M. Jamal Deen CM PhD Dr-hc Dr-hc Dr-hc DEng-hc

FRSC FCAE A-CAS FTWAS FNASI FINAE MEASA FIEEE FAPS FECS FAAAS FEIC

Distinguished University Professor – McMaster University

Canada Research Chair in Information Technology; Director, Micro- & Nano-Systems Lab.

***President, Academy of Science, Royal Society of Canada* (2015-17)**

Electrical and Computer Engineering, McMaster University, 1280 Main St. West, Hamilton, ON L8S 4K1, CANADA

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EDUCATION

Ph.D. (Electrical Engineering and Applied Physics), Case Western Reserve University, Cleveland, OH, U.S.A (July 1985).
M.S. (Electrical Engineering and Applied Physics), Case Western Reserve University, Cleveland, OH, U.S.A (May 1982).
B.Sc. (Physics/Mathematics), University of Guyana, Turkeyen, Guyana (June 1978).

ACADEMIC EXPERIENCE

Distinguished Univ. Prof.	2015 - present	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Canada Research Chair	2001 - present	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Professor	1999 - present	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Dist. Visiting Prof.	2017 - 2018	EEE Department	SUSTech, Shenzhen, China.
Senior Fellow	2014 - 2016	Institute for Advanced Studies	Hong Kong Univ Science and Technology.
Visiting Professor	Jun 14 - Jan15	Electronic & Computer Eng	Hong Kong Univ Science and Technology.
Dist. Visiting Prof.	2008 - 2013	Division of ITCE, WCU Program	POSTECH, Pohang, South Korea.
Guest Professor	Jan - July 2008	Fachgebiet Mikrowellentechnik	Technische Universitaet Berlin, Germany.
Associate Chair	2000 - 2003	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Associate Director	1995 - 1998	Engineering Science	Simon Fraser University, Vancouver, BC.
Visiting Professor	Summer 1997	Electrical Engineering	Delft Univ. of Technology, Nederland.
Professor	1993 - 2002	Engineering Science	Simon Fraser University, Vancouver, BC.
Associate Professor	1989 - 1993	Engineering Science	Simon Fraser University, Vancouver, BC.
Assistant Professor	1986 - 1989	Engineering Science	Simon Fraser University, Vancouver, BC.
Assistant Professor	1985 - 1986	Comp. Sci. & Elect. Eng.	Lehigh University, Bethlehem, PA, USA.

INDUSTRIAL OR NON-ACADEMIC EXPERIENCE

Directeur de Recherche	2002 - 2003	Semiconducteur Groupe	CNRS, Montpellier, France.
Directeur de Recherche	Summer 1998	LPCS	CNRS, Grenoble, France.
Visiting Scientist	Summer 1994	Device Technology (P813)	Northern Telecom Ltd., Ottawa, Canada.
Visiting Scientist	1992 - 1993	Device Technology (P813)	Northern Telecom Ltd., Ottawa, Canada.
Visiting Scientist	Summer 1986	Herzberg Inst. of Astrophysics	National Research Council, Ottawa, Canada.

AWARDS/HONORS

Honorary Degrees & Fellowships/Membership in National Academies or Societies

Doctor - Honoris Causa	El Instituto Nacional de Astrofísica, Óptica y Electrónica, Puebla, Mexico, 11 Nov 16.
Doctor - Honoris Causa	Universitat Rovira I Virgili, Tarragona, Spain, 7 March 2014.
Doctor - Honoris Causa	Universdad de Granada, Granada, Spain, 25 May 2012.
Doctor of Engineering - Honoris Causa	University of Waterloo, Waterloo, Ontario, Canada, 18 June 2011.
Fellow	The World Academy of Sciences (TWAS), 10 December 2019

Academician (Foreign Member)	Chinese Academy of Sciences, 22 November 2019
Academician (Member)	European Academy of Sciences and Arts, 10 July 2014.
Fellow (Foreign)	NASI, The National Academy of Sciences, India, October 2012.
Fellow (Foreign)	INAE, The Indian National Academy of Engineering, September 2007.
Fellow	CAE, The Canadian Academy of Engineering, April 2007.
Fellow	RSC, The Royal Society of Canada - The Academies of Arts, Humanities & Sciences of Canada, 2006. **Highest honor for scholars, artists & scientists in Canada**.
Fellow	APS, The American Physical Society, November 2008.
Fellow	AAAS, The American Assoc. for the Advancement of Science, Oct 2005.
Fellow	ECS, The Electrochemical Society, May 2004.
Fellow	EIC, The Engineering Institute of Canada, December 2003.
Fellow	IEEE, The Institute of Electrical and Electronic Engineers, November 2002.
Honorary Member	WIF, The World Innovation Foundation, May 2006. **Highest honor from WIF**.

International and National and Awards and Honors

Member	Order of Canada - 29 June 2018. **Highest Civilian Honor in Canada.**
Distinguished Visiting Fellowship Award	Royal Academy of Engineering, UK (University of Exeter), 2017.
PIFI Distinguished Scientist Award	Chinese Academy of Sciences, Beijing, 2017.
Overseas Academic Masters Scholar Award	Dalian University of Technology, Dalian, China, 2017.
Ham Outstanding Engineering Educator Award	IEEE Canada, 5 May 2014 – **Top award for Education & Teaching.**
Vice-Chancellor's Award	The University of the West Indies, 11 May 2013.
AGL McNaughton Gold Medal	IEEE Canada, 6 May 2013 **– Top Award for Engineers**.
Fessenden Silver Medal	IEEE Canada, 9 May 2011.
Electronics and Photonics Division Award	Electrochemical Society, 1 May 2011.
Science and Technology Award	New Pioneers Awards, Toronto, Canada, 25 February 2010.
Eadie Medal	The Royal Society of Canada, July 2008 **– RSC only Engineering Award**.
Technology Achievement Award	ICCC – Indo-Canada Chamber of Commerce, June 2009.
Guyana Award – Academic Excellence	Guyana Awards Council - Canada, May 2008.
Humboldt Research Award	Alexander von Humboldt Foundation, April 2006.
IBM Faculty Award	IBM Corporation, USA, 2006.
Distinguished Lecturer	IEEE - Electron Device Society, 2002 - present.
Thomas D. Callinan Award	Electrochemical Soc. – Dielectric Science & Technology Div., 2002.
Canada Research Chair	Government of Canada, 2001 - 2022.

Scholastic Awards

Member	Eta Kappa Nu – Electrical Engineering Honor Society, 1985.
American Vacuum Society Scholar	Elect. Eng. & App. Phys. Department, CWRU, 1983 - 1984.
Fullbright-Laspau Scholar	Elect. Eng. & App. Phys. Department, CWRU, 1980 - 1982.
Irving Adler's Prize	Best graduating mathematics student at the Univ. of Guyana, 1978.
Chancellor's Medal	Second best graduating student of the University of Guyana, 1978.

Other Competitive Awards for Research and Service

Honorary Professor	Huazhong University of Science and Technology, Wuhan China, January 2019, Lifetime appointment.

Honorary Professor	Beihang University, Beijing, China, June 2018, Lifetime appointment.
National Distinguished Professor	Univ of Electronic Sci & Tech of China, Chengdu, China, Oct '18 – Sep '21.
Honorary Professor	Xidian University, Xi'an, China, September 2017 -August 2020.
Distinguished Visiting Professor	Huazhong Univ. Science & Technology, Wuhan, China, April-May 2019, April-May 2018, April - May 2017, April - May 2016.
Honorary Professor	Shanghai University, Shanghai, China, 2015 - 2018.
Càtedres d'Excellència	Universitat Rovira I Virgili (URV), Tarragona, Spain, Feb - March 2016.
Distinguished Visiting Professor	Univ of Electronic Science & Tech, Chengdu, China, Dec 2015 – Dec 2018.
Guest Professor	Jiang Nan University, Wuxi, China, 2014 - 2016.
Winegard Lecturer	University of Guelph, 10 May 2013.
Engineering Research Award	McMaster University, 8 May 2013.
Royal Society of Canada Keynote Lecturer	Canadian Congress of Applied Mechanics – CANCAM, 6 June 2011.
Càtedres d'Excellència	Universitat Rovira I Virgili (URV), Tarragona, Spain, Jan - March 2011.
Bao Yu-gang Chair Professorship	Zhejiang University, Zhejiang, China, August 2009 – for 9 years.
NSERC Senior Industrial Fellow	Device Technology (P813), Northern Telecom, Ottawa, 1993.
Listed in	Canadian Who's Who, from '07, Academic Keys Who's Who in Higher Educ. Eng., from '06. & Amer Men & Women of Sc, from Feb 1989.
Distinguished Researcher Award	Province of Ontario, July 2001.

IEEE Outstanding Branch Counselor and Advisor Award for Canada - Region 7, April 1994.

IEEE Exemplary Student Branch Award for SFU (Deen - Counselor and Kwan - Student Chair) - Region 7, 1995.

Reward and Recognition Award	Silicon Technology Division (P810), Northern Telecom, Ottawa, 1993.

Best Paper/Poster/Presentation Awards

Best Presentation Award	2019 IEEE HPCC/Smart City/DSS 2019 - 21st Int'l Conf on High Perform-ance Computing and Communications / 17th Int' Conf. on Smart City / 5th Int'l Conf. on Data Science and Systems), Zhangjiajie, China, 10 Aug 2019.
Best Presentation Award	2019 APEC Innovation Dialog Forum, Huzhou, China, 14 May 2019.
Best Presentation Award	Int'l Congress on Cybermatics, Halifax, NS, Canada, 30 Jul – 3 Aug 2018.
Best Presentation Award	The 2017 Int'l Conf. on Computer, Information and Telecommunication Systems (CITS - 2017), Dalian, China, 21 - 23 July 2017.
Best Congress Keynote Speech Award	The 2017 World Cybermatics Congress, Chengdu, China, 16 - 19 Dec 2016.
Best Presentation Award	The 2016 Int'l Conf. on Smart X, Dalian, China, 29 - 31 July 2016.
Best Presentation Award	IEEE Int. Conf. on Smart City – IEEE Smart City 2015, 19 - 21 Dec 2015.
Best Presentation Award	IEEE Int. Sym. Future Inf & Com Tech for U-Healthcare, 28-30 May 2015.
Best Keynote Speech Award	17th IEEE Int'l Conf. on Computational Sci. & Eng., 19 - 21 Dec 2014.
Best Poster Award - Autonomics	4th Int. Symposium on IT Convergence Engineering, 12 - 13 July 2012.
Best Poster Award – Nanosensors	4th Int. Symposium on IT Convergence Engineering, 12 - 13 July 2012.
Best Poster Award - Autonomics	3rd Int. Symposium on IT Convergence Engineering, 14 - 15 July 2011.
Best Poster Award – Nanosensors	3rd Int. Symposium on IT Convergence Engineering, 14 - 15 July 2011.
Best Poster Award - Autonomics	2nd Int. Symposium on IT Convergence Engineering, 19 - 20 Aug. 2010.
Outstanding Student Paper Award	IEEE Electron Devices Society's 2006-07 Region 9 Competition, 2008.
Premium Award	The Institution of Engineering Technology (formerly IEE), 2007.
Best Student Poster Paper Award	Annual Micronet Workshop, Ottawa, Canada, May 2005.
Best Paper Award	The Institution of Engineering Technology (formerly IEE), 2004.

Best Student Paper Award	IEEE Canadian Conf. on Electrical & Computer Engineering, 2004.
Best Student Paper Award	SPIE Conference on Noise in Devices and Circuits, 2003.
Best Invited Paper Award	IEEE Custom Integrated Circuits Conference, 2002.

Citation for Order of Canada – Highest Civilian Honor in Canada

► Member, Order of Canada – 29 June 2018.

Short Citation: For his advancements in the fields of electrical engineering and applied physics, and for his leadership of multiple academic and professional institutions.

Longer Citation: Jamal Deen is a prominent global leader in electrical engineering and applied physics. Professor at McMaster University, he is a world-class expert in semiconductor devices and circuits and their applications. His extensive achievements, ranging from theory and modelling to practical applications, have had profound impact on the development of optical detection, imaging and sensing systems, and the development of wireless technologies. His leadership in numerous academic and professional institutions is equally renowned, notably as the President of the Academy of Science of the Royal Society of Canada.

Citations for Honorary Degrees and Fellowships

► Doctor – honoris causa, El Instituto Nacional de Astrofísica, Óptica y Electrónica, Puebla, Mexico, 11 Nov 2016.

Citation and Nominator Statement: The honor was awarded to recognize Dr. Deen's world-class research at the highest level in the field of electronic devices as well as fundamental research and technology development of optical, chemical and biological sensors with applications in information and communications technologies as well as health and environmental sciences.

The nominator of Dr. Deen for this award, Prof. Edmundo Gutierrez, El Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), stated that "Dr. Deen is a dynamic and very wide open-minded researcher who has taught me the importance of establishing international research collaboration and strengthen a team-working strategy. One of the invaluable aspects of his friendship and work as a professional colleague has been the acquired capacity to work with people from different parts of the world, and the cultural exchange. This has served the purpose of improving my way of teaching at the Master and Doctoral levels in Mexico, in the way of supervising Doctoral theses and assembling a team of students around a research topic, as well as learning techniques to encourage and motivate people to work as a team. Dr. Deen has been instrumental in my development not only as a researcher, but also as a person. He has inspired in me a sense of identity and attachment to our countrymen and colleagues in Mexico. He has successfully pushed for the interaction of different professors and students from different countries from South America, in particular Brazil, Venezuela, Colombia, México. This is a major differentiator with respect to other colleagues from South America. This research community would not be possible without his participation as a liaison. Dr. Deen is an exceptional lecturer with a great ability to transmit knowledge and motivate people. Students and colleagues are always eager to know about the latest research work by Dr. Deen. His high-quality personal skills and dedication to the improvement of other people is his main value. As a person he has been always helping, supporting, and assisting people in many ways. His support goes beyond the professional area, where mentoring has been always a way of caring for his friends. As a colleague he has been a valuable mentor that has guided me in choosing the appropriate professional path. Being an excellent mentor, teacher, and supervisor, Dr. Deen helps students in improving personal quality, social commitment, and becoming better people in a current society with needs for socially responsible people."

► Doctor – honoris causa, Universitat Rovira I Virgili, Tarragona, Spain, 7 March 2014.

Partial Citation from Nominator and Rector: Professor Benjamin Iñíguez stated "It is an honor for me to be able to pronounce this laudatio of distinguished professor Jamal Deen, who has been proposed to be granted a doctorate honoris causa from our university. He is one of the most prominent researchers in the international arena for his contributions to the science of electrical engineering, especially semiconductor devices and sensors. Prof. Deen has made very important contributions to the field of electronic and photonic devices, and has won the most prestigious awards in the field. He has contributed greatly to the understanding of semiconductor physics and devices, and to improving semiconductor technology. … The bond we have had with him since he first visited the URV in 2004 will certainly be strengthened after today, due to the high level of his academic and scientific contributions and the value and recognition he has achieved as a person and researcher worldwide."

The Rector (equivalent to University President in Canada), Professor Frances Xavier Grau Vidal stated "The investiture ceremony of an honorary degree is the highest solemnity to the university community. With this event we integrate into our faculty those who have distinguished themselves by their activity in favor of the arts, culture, science, or simply, humanity, and this event also preserves the liturgy that evokes the crucial role that for centuries the university has had in society, the development of which preserves and advances knowledge and transmits it to new generations. Through this recognition, which

is selective and judicious, the University is also defined. … Professor Benjamin Iñíguez has revealed in his laudatio all the academic and scientific merits that make Prof. Jamal Deen deserving of the highest academic distinction awarded by the University and that we have seen in the lectio magistralis that Dr. Deen has delivered. It is an honor and a privilege to welcome Prof. Jamal Deen into our Faculty, and I do it with pleasure, both personally and on behalf of all members of the University."

► Doctor – honoris causa, Universidad de Granada, Spain, 25 May 2012.

Partial Citation from Nominator: On behalf of the Department of Electronics I would like to thank all the personal of Granada University for their support during the nomination process of the highest degree in a University that will be given to Dr. Jamal Deen. Today, we are going to confer the Doctor Honoris Causa title to a person that is remarkable by the quality of his personal merits and for the benefits that has provided and continues providing to our University, due to his collaboration with researchers and students. As other institutions have done before, we recognize his exceptional efforts as supervisor and mentor of a large amount of researchers and engineers, as an excellent university teacher and his efficiency in transferring knowledge to other people. His personal career trajectory justifies it all. … Professor Deen has known how to adapt well to difficult surroundings. His efforts have led him to be situated among the best scientists and engineers in the world. … And his scholarly work has been recognized inside and outside Canada with a large quantity of awards such as Humboldt Research Award from Alexander von Humboldt Foundation, Thomas D. Callinan Award from Electrochemical Society, Foreign Fellow of the Indian National Academy of Engineering, Fellow of the Royal Society of Canada, Eadie Medal from this same society and recently Doctor Honoris Causa in Waterloo University (Canada). …. Dr. Deen knows not only about Science and Engineering, he knows the people, their abilities and limitations. He is capable of assigning the right research topic to the right person. This is what he did years ago with our group. This is another reason why, the Cloister of Doctors of Granada University admits him into it.

► Doctor of Engineering – honoris causa, University of Waterloo, 18 July 2011.

Short Citation: Jamal Deen, a McMaster University professor and senior Canada research chair in information technology, will receive a doctor of engineering degree and address convocation. A highly accomplished researcher, inventor and scholar, Deen's prolific research has helped McMaster become a major centre for innovation and cutting-edge research in opto-electronics. He is a fellow of the IEEE, the world's largest professional association for the advancement of technology, as well of the Royal Society of Canada and the American Physical Society.

► Fellow, The World Academy of Sciences (TWAS), December 2019.

Partial Citation: Dr. M. Jamal Deen is a Distinguished University Professor and Senior Canada Research Chair, McMaster University, Canada. He has contributed in the analysis, modeling and applications of high-performance semiconductor devices and their applications. Member of the Royal Society of Canada: The Academies of Arts, Humanities and Sciences of Canada; the European Academy of Sciences and Arts; the National Academy of Sciences India, he has received honorary doctorate degrees from four universities, the President's International Fellowship Initiative (PIFI) Distinguished Scientist Award from the Chinese Academy of Sciences, among many others. His election is a clear recognition of his outstanding contribution to science and its promotion in the developing world.

► Academician (Foreign Member), Chinese Academy of Sciences, November 2019 (China's highest academic honor).

Partial Citation: Dr. M. Jamal Deen is a Distinguished University Professor (**highest rank of a Professor in a Canadian University**), Senior Canada Research Chair in Information Technology, and Director of the Micro- and Nano-Systems Laboratory, McMaster University. He received the Ph.D. degree in electrical engineering and applied physics from Case Western Reserve University, USA. His Ph.D. dissertation was on the design and modeling of a new CARS spectrometer for dynamic temperature measurements and combustion optimization in rocket and jet engines, and was sponsored and used by NASA, Cleveland, USA. … As an undergraduate student at the University of Guyana, he was the top ranked mathematics and physics student and the second ranked student at the university, winning the Chancellor's gold medal and the Irving Adler prize. As a graduate student, he was a Fulbright-Laspau Scholar and an American Vacuum Society Scholar. He is a Distinguished Lecturer of the IEEE Electron Devices Society for more than a decade and a half. His awards and honours include the Callinan Award as well as the Electronics and Photonics Award from the Electrochemical Society; the Distinguished Researcher Award from the Province of Ontario; a Humboldt Research Award from the Alexander von Humboldt Foundation; the Eadie Medal from the Royal Society of Canada; the McNaughton Gold Medal (**highest award for engineers**), the Fessenden Medal and the Ham Education Medal, all from IEEE Canada. In addition, he was awarded four honorary doctorate degrees in recognition of his exceptional research and scholarly accomplishments, professionalism and service. He is elected by his peers to Fellow status in ten national academies and professional societies including The Royal Society of Canada - The Academies of Arts, Humanities and Sciences (**the highest honour for academics, scholars and artists in Canada**), Institute of Electrical and Electronic Engineers (largest professional society in the world), American Physical Society and Electrochemical Society. Most recently, he was appointed to the Order of Canada, the **highest civilian honor in Canada from the National Government**. He served as the elected **President of the Academy of Science**, The Royal Society of Canada from 2015 to 2017 and is now

serving as the Past President (2017-2019). As a research scholar, three examples of Dr. Deen's major research accomplishments are given.

- Development of accurate, physics-based and engineering models and parameter extraction algorithms for sensitivity in modern silicon transistors that are incorporated into popular simulators and are also used by many industries worldwide. These models and parameter extraction algorithms have allowed for the optimized design of advanced, high-performance integrated circuits with predictable low noise performance at first fabrication attempt, thus realizing significant time and cost savings by industry.
- Development of robust, calibrated, and powerful physics-based algorithms and models to study and enhance the performance of ultra-high speed optical detectors and the successful design of the ten Gigabits per second optical detector used by his industrial collaborator in fiber optic receivers;
- Invention of the solid-state microscope, the gated lateral bipolar transistor and its use in modulation and automatic gain control circuits which are all owned and successfully exploited by industries.

► Academician (Member), European Academy of Sciences and Arts, July 2014.

Long Citation: Prof. Deen is a major contributor and world leader in micro-/nano-electronics and optoelectronics. He anchors innovative, important contributions in the fundamentals of the physics of semiconductor devices by combining physics-based modeling with clever experiments. His research productivity and impact in these fields have been truly exceptional, not only for its originality and rigor, but also for its blend of theory and practice. Prof. Deen is generally regarded as a world leading authority in noise in semiconductor devices. He created a generalized algorithm for calculating the radiofrequency noise parameters of any semiconductor device, given its small-signal model and noise sources. Prof. Deen proposed a new and general model for obtaining the intrinsic noise sources from on-wafer noise and scattering parameters' measurements. This work was the key to one of his industrial collaborators, Nortel, maintaining a world-wide technical and economic leadership in photodetectors and receivers for long-haul fiber communication systems. Another significant outcome of his work is that noise and/or noise dispersion could ultimately limit the further miniaturization of mainstream silicon electronics technology, thus killing the famous Moore's law.

He also studied the effects of proton radiation damage on low frequency noise in field-effect transistors used in a charge-coupled device based guide camera system, for an astronomy space mission (Lyman FUSE). He showed that by choosing the optimum operating condition of the camera, the noise increase after radiation damage can be minimized, thus maintaining excellent camera sensitivity over the mission lifetime.

Prof. Deen is also a world leader in high-performance photodetectors - physics, design, and parameter extraction. He has developed calibrated theoretical models for determining the performance of modern photodetectors such as resonant cavity, waveguide and mushroom-type photodetectors, quantum-dot infrared photodetectors, single-photon avalanche diodes, pixels, and arrays. He has extended his theoretical models to the formulation of circuit-type models for the optimized design and simulated performance of high-performance photodetectors, optical receivers, and optical imaging systems for communications, biomedical, and environmental applications."

► Fellow (Foreign) of NASI, The National Academy of Sciences India, October 2012.

Citation: Dr. M. Jamal Deen, Professor and Senior Canada Research Chair in Information Technology, McMaster, is a major contributor and world leader in microelectronics/nanoelectronics and optoelectronics. He anchors innovative, important contributions in noise and modeling of semiconductor devices in fundamentals of physics by combining physics-based modeling with clever experiments. His research productivity and impact in these fields have been truly exceptional, not only for its originality and rigour, but also for its blend of theory and practice. He is the world's foremost authority in the modeling and noise of electronic and optoelectronic devices, particularly silicon transistors and high-speed photodetectors for application in wireless circuits and optical communication receivers. Dr. Deen has successfully transferred powerful physics-based, engineering and circuit models for the accurate analysis and design of high-performance semiconductor devices and circuits, and innovative experimental techniques, to numerous companies and research laboratories in Canada, USA and Asia. His models that allow for the accurate prediction of noise in semiconductor devices and circuits have solved a major bottleneck in wireless communication systems today. His practical models for high performance optical detectors and experimental innovations to predict their reliability have contributed to the design and manufacture of reliable photodetectors in fiber-optic communication systems and has been used by a major Canadian company. He is in demand for invited lectures at conferences, research organizations and universities throughout the world to describe his fundamental contributions of microelectronics, optoelectronics for information and communication technologies. The recent Guyana Academic Achievement Award and Indo-Canada Chamber of Commerce Technology Achievement Award were given for his pioneering contributions and leadership in research, international education and collaborations. Dr. Deen's work has been recognized by his election as a Fellow of eight academies/learned societies, including three national Academies - RSC, CAE in Canada and NAE in India, as an Honorary Member of the World Innovation Foundation - the foundation's highest honor, as well as by winning the Callinan Award from the Electrochemical Society, a Humboldt Research Award from the Alexander von

Humboldt Foundation, Germany, the Eadie Medal from the Royal Society of Canada and seven best paper awards.

► Fellow (Foreign) of INAE, The Indian National Academy of Engineering, September 2007.

Citation: Professor M. Jamal Deen of McMaster University, Canada, is an international leader in the fields of microelectronics and optoelectronics and one of the world's foremost engineering scientists. Professor Deen's research productivity and impact have been truly exceptional, and he has played a pioneering role in the analysis, modeling and applications of microelectronic and optoelectronic devices. His eminence in his research fields is based on the powerful physics-based, engineering and circuit models he has developed for the accurate analysis and design of high-performance semiconductor devices and circuits, and the experimental techniques he has innovated to study important device properties and performance characteristics.

► Fellow of CAE, The Canadian Academy of Engineering, April 2007.

Citation: Professor M. Jamal Deen, McMaster University, is internationally recognized for his outstanding and seminal contributions to the analysis, modeling and applications of microelectronic and optoelectronic devices. He has developed powerful models for the accurate analysis and design of high-performance semiconductor devices and circuits. These contributions build on his innovative experimental techniques to study important device properties. A highly accomplished researcher, inventor and a prolific scholar, his device models and experimental innovations are used worldwide. He is also noted for his mentoring of engineers and scientists, his competency and proficiency as a teacher, and his effectiveness in technology transfer to industry.

► Fellow of RSC, The Royal Society of Canada - The Academies of Arts, Humanities & Sciences of Canada, June 2006.

Citation: M. Jamal Deen is a scientific leader internationally recognized for his research in the analysis, modeling and applications of microelectronic and optoelectronic devices. He has developed powerful physics-based models for the accurate analysis and design of high-performance semiconductor devices. These outstanding seminal contributions build on his innovative experimental techniques to study important device properties. A highly accomplished researcher, inventor and a prolific scholar, his device models and experimental innovations are used worldwide. Outstanding examples include: algorithms and models for computation of key semiconductor device performance parameters; the gated-lateral bipolar transistor and novel circuits for modulation and amplification; and the solid-state microscope used in biomedical applications.

► Fellow of APS, The American Physical Society, Nov 2008.

Citation: For significant contributions to noise and physics-based modeling of semiconductor devices and innovations in experiments.

► Fellow of AAAS, The American Association for the Advancement of Science, Oct 2005.

Citation: For distinguished contributions in the fields of noise in semiconductor devices, modeling of high-speed photodetectors and development of electrical characterization techniques.

► Fellow of ECS, The Electrochemical Society, May 2004.

Citation: In recognition of important contributions in the fields of semiconductor device physics, modeling and characterization with emphasis on low-frequency and high-frequency noise in semiconductor devices, modeling of high-speed photodetectors and development of electrical characterization techniques.

► Fellow of EIC, The Engineering Institute of Canada, December 2003.

Citation: For pioneering research contributions to modeling, noise and parameter extraction in silicon transistors and high-speed photodetectors, and for significant contributions to the electrical engineering profession in general and to IEEE in particular.

► Fellow of IEEE, The Institute of Electrical and Electronic Engineers, November 2002.

Citation: For contributions to modeling, noise and parameter extraction in silicon transistors and high-speed photodetectors.

Citations/Details for Some Other Awards

► Honorary Professor, XiDian University, China, September2017 – August 2020.

Citation: In recognition of "outstanding record of research achievements in nanoelectronics and optoelectronics, and exemplary professionalism."

► Royal Academy of Engineering (RAE) Distinguished Visiting Fellowship Award, University of Exeter, 2017.

Citation: In recognition of "outstanding expertise, particularly in sensing devices and detector systems making significant contributions to research and engineering in sensor networks for smart healthcare."

► PIFI Distinguished Scientist Award, Chinese Academy of Sciences, Beijing, 2017.

Citation: In recognition of being a well-established and internationally recognized scientist, having obtained outstanding scientific accomplishments and prestigious international honors, awards, and prizes.

► Overseas Academic Masters Scholar Award, Dalian University of Technology, Dalian, China, Jan 2017 – Dec 2019.

Citation: In recognition of "outstanding record of research achievements in smart sensor systems and exemplary professionalism."

► Càtedres d'Excellència (Chair of Excellence), Universitat Rovira I Virgili (URV), Tarragona, Spain, February-March 2016.

Citation: In recognition of "Investigador de referència mundial en el camp del dispositius semiconductors." – "World-recognized researcher in the field of semiconductor devices."

► Honorary Professor, Shanghai University, China, August 2015-2018.

Citation: In recognition of "outstanding record of research achievements and exemplary professionalism."

► Best Keynote Speech Award - 17th IEEE Int'l Conf. on Computational Science & Engineering, 19 December 2014.

Conference Details: The 17th IEEE International Conference on Computational Science & Engineering (CSE 2014) was held together with three other international conferences – 13th IEEE International Conference Ubiquitous Computing and Communications (*IUCC* 2014), 13th International Symposium on Pervasive Systems, Algorithms, and Networks (*I-SPAN* 2014) and 8th International Conference on Frontier of Computer Science and Technology (*FCST* 2014). The 2014 conference covered bio-inspired computing, scientific and engineering computing, big data, cloud computing, mobile computing, embedded and ubiquitous computing, distributed and parallel computing, and the use of technologies of computing and communications to improve the quality of human life. The conferences had 1079 submissions, of which 335 papers were accepted, including 8 keynote papers for the four conferences. The best keynote speech award was for my presentation on ***"Smart Home Technologies Towards Better Healthcare."***

► JM Ham Outstanding Engineering Educator Medal, IEEE Canada, 5 May 2014.

Citation: "For outstanding contributions in engineering education and dedication to students."

► Vice-Chancellor's Award, University of the West Indies, 11 May 2013.

Citation: "Exceptional scholarly work in engineering and science, exemplary professionalism and dedicated volunteerism."

► Winegard Lecturer, University of Guelph, 10 May 2013.

Citation: "To encourage interaction and foster professional relationships between students (undergraduate and graduate), professors, researchers, alumni, and industry associates, with a recognized leader in their field."

► Engineering Research Award, McMaster University, 8 May 2013.

Citation: "To recognize his world-class status and peer-recognitions as a researcher, as well as his sustained research efforts and leadership in the Faculty of Engineering."

► AGL McNaughton Gold Medal, IEEE Canada, 6 May 2013.

Citation: "Pioneering contributions to modeling of semiconductor devices."

► Càtedres d'Excellència (Chair of Excellence), Universitat Rovira I Virgili (URV), Tarragona, Spain, January-March 2011.

Citation: In recognition of "Investigador de referència mundial en el camp del dispositius semiconductors." – "World-recognized researcher in the field of semiconductor devices."

► Fessenden Silver Medal, IEEE Canada, 9 May 2011.

Citation: "For pioneering contributions in electronics and optoelectronics for communications."

► Electronics and Photonics Division Award, Electrochemical Society, 1 May 2011.

Citation: In recognition of "pioneering contributions to noise and physics-based modeling of semiconductor devices and innovations in experiments."

► Science and Technology New Pioneers Awards, Toronto, Canada, 25 February 2010.

Full Citation: "Dr. Jamal Deen immigrated to Canada in 1986 with his wife and a 4-month old son, accepting a demanding job as an Assistant Professor at Simon Fraser University, shortly after completing his graduate studies. Originally from Guyana, Dr. Deen felt alone in Vancouver as there was only a small Guyanese community. Fortunately, since multiculturalism is encouraged and valued in Canada, Dr. Deen handled these challenges well by linking with other communities, but without

losing his identity. Professionally, Dr. Deen faced challenges in attracting funding to establish a high-quality research program since he did not have a track-record in Canada. As well, it was difficult recruiting students for a new graduate engineering program. Dr. Deen's remarkable successes in overcoming these challenges, coupled with his exceptional teaching and research credentials, led to his early promotion through the professional ranks to Full Professor in record time – just after his sixth year of appointment.

Rising from extremely humble beginnings and with a strong academic foundation from Guyana, Dr. Deen has risen to become one of the world's highest-ranked engineering scientists. He has been awarded seven patents in biomedical systems and innovative electronic devices and circuits, and has published more than four hundred peer-reviewed scholarly articles. His inventions, publications, engineering models and innovative experimental techniques have been used by companies and research laboratories worldwide. Dr. Deen has also served as a consultant and collaborator to many companies and laboratories. His ongoing collaborations in micro and nano-systems for environmental and health applications, with colleagues at Public Health Agency of Canada, Toronto Western Hospital, University of Toronto and other organizations, are producing world-class results.

Dr. Deen's top ranking as a research scholar is highlighted by his peers electing him as fellow (the highest professional Recognition) in eight national academies and learned societies, including the Royal Society of Canada – the highest honor for scientists, artists and scholars in Canada. It is also underscored by his seven best paper awards, and in obtaining more than forty million dollars in peer-reviewed research funding from private and public agencies in the last decade. His other honours include being elected Honorary Member of the World Innovation Foundation - the foundation's highest honour, and winning the Callinan Award from the Electrochemical Society, the Humboldt Research Award from the Alexander von Humboldt Foundation, Germany and the Eadie Medal from the Royal Society of Canada.

Since his arrival in Canada, Dr. Deen has given freely some of his time for community activities. He served as a judge in the British Columbia Science fair and volunteered to develop and teach a ten-week Science/Engineering enrichment program at an elementary school, he also served as an elementary school representative to the Carleton Council on Education. Moving to McMaster University in 1999, he continued his community involvement by volunteering to coach soccer for the West Hamilton Children's Soccer League. Since 2003, he has also served as a periodic volunteer at Mission Services, especially during the critical Christmas holiday period.

Dr. Deen has served as an External Examiner at the University of the West Indies, Trinidad and for doctoral students from the Americas, Asia and Europe. He also assists in organizing International Conferences and in promoting and securing sponsorships for these conferences. Dr. Deen gives generously of his time in mentoring students from developing countries; and to the professional/academic community in these countries through invited lectures. He actively follows the career development of students and researchers from his research team, most of whom have gone on to highly successful careers in industry and academia. He is also deeply interested in the well-being of current and past students and researchers."

► Eadie Medal, The Royal Society of Canada, July 2008.

Citation: "Dr. Deen is a major contributor and world leader in microelectronics/nanoelectronics and optoelectronics and has made significant contributions to communication systems hardware. He is the world's foremost authority in the modeling and noise of electronic and optoelectronic devices, particularly silicon transistors and high¬-speed photodetectors for application in wireless communication circuits and optical communication receivers."

► Bao Yu-gang Chair Professorship, Zhejiang University, Zhejiang, China, August 2009 – for 9 years.

Citation: In recognition of "outstanding record of research achievements and innovative technical contributions in the areas of mciro-/nano-electronics and optoelectronics."

► Technology Achievement Award, ICCC – Indo-Canada Chamber of Commerce, June 2009.

Award Criteria: In recognition of his record as "a Technology Achiever who has demonstrated achievements in business product, a record of innovation, established a high profile in the Canadian and the global business community; has strong leadership skills and has contributed to the community."

► Guyana Award – Academic Excellence, Guyana Awards Council, Canada, May 2008.

Citation: "Dr. M. Jamal Deen holds a variety of senior academic roles within Canada, serving as the Senior Canada Research Chair in Information Technology, and Director of Micro and Nano- Systems Lab, and Professor of Electrical and Computer Engineering at McMaster University. His research work on high-performance photodetectors and optical detection systems is of tremendous industrial relevance.

Professor Deen is considered a visionary leader who has attained international stature for his work in electronic device modelling and innovations in experiments. Because of his outstanding research credentials, Dr. Deen is a highly sought-after speaker, editor of several international journals, and serves on many international Editorial Boards, making him one of the most respected engineering scientists in Canada and internationally.

From humble beginnings in Guyana, Professor Deen has become one of the most recognized and honoured academics in engineering to emerge from Guyana, the Caribbean and South America. His prolific research record of more than 390 peer-reviewed articles, 7 best paper awards, 7 patents, 15 book chapters and co-editorship of 14 books and conference proceedings, has helped McMaster University and Canada become a major centre for innovative and cutting-edge research in micro-, nano- and opto-electronics.

Dr. Deen attended Queen's College, the University of Guyana, and Case Western Reserve University in Cleveland, Ohio, where he obtained his Ph.D. for research sponsored and used by NASA. He has received numerous awards for academic excellence including, most recently, the prestigious Humboldt Research Award from Germany. His peers have also elected him to Fellow status in seven national academies and professional organizations, including election as Fellow of the Royal Society of Canada – the "highest academic accolade in Canada that is available to scientists and scholars.

Professor Deen has had a significant impact in microelectronics and opto-electronics research at collaborating institutions in many countries, and remains involved in the social development of Guyana."

► IBM Faculty Award, IBM Corporation, USA, 2006.

Award Criteria: "The IBM Faculty Awards is a worldwide competitive program …to foster collaboration between researchers at leading universities worldwide and those in IBM research, development and services organizations."

► Thomas D. Callinan Award, Electrochemical Society – Dielectric Science & Technology Div., 2002.

Citation: In recognition of "outstanding record of research achievements and innovative technical contributions in the area of Dielectric Science and Technology, particularly to the understanding, modeling and characterization of important phenomena at the silicon-silicon dioxide interface in MOSFETs."

Dissertation, Thesis

- **Ph.D. Dissertation,** "*The Design and Simulated Performance of a CARS Spectrometer Using Advanced Solid-State Detectors*", 175 pages, Electrical Engineering and Applied Physics Department, Case Western Reserve University, **Advisor:** Professor E.D. Thompson (all requirements completed in July 1985, degree awarded in January 1986). Dissertation research was sponsored and used by NASA, Cleveland, Ohio, USA.
- **M.S. Thesis**, "*Josephson Junctions with Reactive R.F. Sputter-Deposited Tunneling Barriers*", 170 pages, Electrical Engineering and Applied Physics Department, Case Western Reserve University, **Advisor:** Professor E.D. Thompson (degree awarded in May 1982).

EDITORIAL RESPONSIBILITIES - Current

- Co-Editor-in-Chief, ***Micro and Nanosystems*** (2016 – present).
- Co-Editor-in-Chief, ***International Journal of High Speed Electronics and Systems*** (2014 – present).
- Associate Editor, **IET Cyber-Physical Systems: Theory & Applications** (2017 - present).
- Member, Editorial Board, ***Applied Sciences*** (2018 – present).
- Member, Editorial Board – Circuits and Systems, ***Journal of Electrical and Computer Engineering*** (Jan 2013 – present).
- Member, Editorial Board, ***Open Journal of Radiology* (*OJRad*)** (January 2012 – present).
- Member, Editorial Board, ***Nanoscience & Nanotechnology-ASIA*** (January 2011 – present).
- Editor (Devices), ***Journal of Semiconductor Technology and Science*** (January 2010 – present).
- Member, Editorial Board, ***Nanotechnology*** (January 2010 – present).
- Executive Editor, ***Fluctuation and Noise Letters*** (March 2001 – present).
- Guest Editor, Special Issue of ***Sensors*** on *"Water and Health pH Sensors*" (2020).
- Guest Editor, Special Issue of ***IEEE Journal of Biomedical and Health Informatics*** on *"Enabling Technologies in Health Engineering and Informatics for the New Revolution of Healthcare* 4.0" (2019-2020).

EDITORIAL RESPONSIBILITIES - Previous

- Member, Editorial Board, ***Research Letters in Electronics*** (January 2009 – March 2018).
- Member, Editorial Board, ***Microelectronics Journal*** (May 2006 – 2017).
- Guest Editor, Special Issue of ***Sustainability*** on **"***Smart X for Sustainability***"** (February 2017).
- Guest Editor, Special Issue of ***Photonics*** on **"***Advanced Photodetectors Devices and Technologies***"** (2016-2017).
- Guest Editor, Special Issue of ***Journal of Industrial Information Integration*** on **"***Future Buildings and Homes Under the Context of Internet-of-Things and Industry* 4.0**"** (2016-2017).

- Associate Editor, ***IEEE/OSA Journal of Display Technology*** (January 2011 – December 2016)
- Member, Editorial Board, ***Micro and Nanosystems*** (January 2012 – December 2015).
- Guest Editor, Special Issue of ***Sensors*** on **"***State-of-the-Art Sensors in Canada* 2014**"** (2014).
- Guest Editor, Special Issue of ***IEEE Tran on Electron Devices*** on **"***Compact Modeling of Emerging Devices***"** (Feb 2014).
- Member, Editorial Board, ***Open Journal of Applied Physics*** (January 2007 – 2014).
- Guest Editor, Special Issue of ***Applied Sciences*** on **"***Rapid Detection Systems***"** (2013).
- Guest Editor, Special Issue of ***Sensors*** on **"***State-of-the-Art Sensors in Canada* 2011**"** (2011).
- Member, Advisory Board of Editors, ***Int'l Journal of High Speed Electronics and Systems*** (June 2006 – Dec 2013).
- Regional Editor, ***IEEE Electron Devices Society (EDS) Newsletter*** – Canada and Central USA (Nov 2004 – Dec. 2010).
- Editor – Solid-State, ***IEEE Transactions on Electron Devices*** (April 2001 – March 2010).
- Member, Editorial Advisory Board, ***Interface, an Electrochemical Society Publication*** (April 2001 – May 2007)
- Guest Editor, Special Issue of ***IEEE Transactions on Electron Devices*** on **"***Compact Interconnect Models for Gigascale Integration*" (September 2009).
- Guest Editor, Special Issue of ***IET Circuits, Devices and Systems*** from *IEEE/SPIE International Conference on Computers and Devices for Communications* **(*CODEC*)** 2006 (1 February 2008).
- Guest Editor, Special Issue of ***IEEE Transactions on Electron Devices*** on **"***Advanced Compact Models and 45-nm Modeling Challenges*" (September 2006).
- Guest Editor, Special Issue of ***IEE Proceedings - Circuits, Devices and Systems*** from *IEEE/SPIE International Conference on Computers and Devices for Communications* **(*CODEC*)** 2004 (October 2005).
- Guest Editor, ***Interface, an Electrochemical Society Publication*** (Summer 2005).
- Member, Editorial Board, ***The Journal of Nanoscience and Nanotechnology*** (September 2004 – 2007).
- Guest Editor, Special Issue of ***IEE Proc. - Circuits, Devices & Systems*** on **"***Noise in Devices & Circuits***"** (April 2004).
- Guest Editor, Special issue of ***Fluctuation and Noise Letters*** on **"***Noise in Devices and Circuits***"** (2004).
- Member, Editorial Board, ***IEEE Transactions on Microwave Theory and Techniques*** (2001-2002).
- Guest Editor, Special Issue of ***IEE Proc. - Circuits, Devices & Systems*** on "*Sel. Topics on Electronic Noise*" (Feb. 2002).
- Guest Editor, Special Issue of ***International Journal of High Speed Electronics and Systems*** (IJHSES) on **"***CMOS RF Modeling, Characterization and Applications***"** (2002).

RESEARCH INTERESTS

Micro-/Nano-/Opto-electronics – Bioimagers; Biosensors; Data Analytics; Device Physics, Modeling and Characterization; Integrated Circuits; Plastic Microelectronics. Most applications are in health and environmental sciences.

A Measure of Research Impact: H-index ~ 64, Citations ~ 14,850 (Google Scholar, Dec '19).

Published SCI Papers

Authored/Edited Books and Conference Proceedings

- **Total Authored/Edited Books or Conference Proceedings – 25**

1. S. Kumar and M.J. Deen, **Fiber Optic Communications: Fundamentals and Applications**, John Wiley and Sons Ltd., ISBN: 978-0-470-51867-0, 552 pages (April 2014).

   Publisher's Description: Fiber-optic communication systems have advanced dramatically over the last four decades, since the era of copper cables, resulting in low-cost and high-bandwidth transmission. Fiber optics is now the backbone of the internet and long-distance telecommunication. Without it we would not enjoy the benefits of high-speed internet, or low-rate international telephone calls.

   This book introduces the basic concepts of fiber-optic communication in a pedagogical way. The important mathematical results are derived by first principles rather than citing research articles. In addition, physical interpretations and real-world analogies are provided to help students grasp the fundamental concepts.

   Key Features:

   • Lucid explanation of key topics such as fibers, lasers, and photodetectors.

- Includes recent developments such as coherent communication and digital signal processing.
- Comprehensive treatment of fiber nonlinear transmission.
- Worked examples, exercises, and answers.
- Accompanying website with PowerPoint slides and numerical experiments in MATLAB.

Intended primarily for senior undergraduates and graduates studying fiber-optic communications, the book is also suitable as a professional resource for researchers working in the field of fiber-optic communications.

2. M.J. Deen and P.K. Basu, **Silicon Photonics – Fundamentals and Devices**, John Wiley and Sons Ltd., ISBN-13: 978-0-470-51750-5, 456 pages (2012). Part of Wiley Series in Materials for Electronic and Optoelectronic Applications.

   Publisher's Description: The creation of affordable high speed optical communications using standard semiconductor manufacturing technology is a principal aim of silicon photonics research. This would involve replacing copper connections with optical fibres or waveguides, and electrons with photons. With applications such as telecommunications and information processing, light detection, spectroscopy, holography and robotics, silicon photonics has the potential to revolutionise electronic-only systems. Providing an overview of the physics, technology and device operation of photonic devices using exclusively silicon and related alloys, the book includes: Basic Properties of Silicon; Quantum Wells, Wires, Dots and Superlattices; Absorption Processes in Semiconductors; Light Emitters in Silicon; Photodetectors, Photodiodes and Phototransistors; Raman Lasers including Raman Scattering; Guided Lightwaves; Planar Waveguide Devices; Fabrication Techniques and Material Systems.

   Silicon Photonics: Fundamentals and Devices outlines the basic principles of operation of devices, the structures of the devices, and offers an insight into state-of-the-art and future developments.

3. M.J. Deen, Editor, **Silicon-based Millimeter-wave Technology, Vol. 174 in Advances in Imaging and Electron Physics,** Academic Press, Amsterdam (Elsevier), ISBN-13: 978-0-12-394298-2, 484 pages (December 2012).

   Description: In this book, the latest developments in theory and practice of silicon-based mm-wave components and systems are described and discussed. The book will cover six main topics: measurement techniques, practical issues and challenges, including system calibration and test structures; transmission lines and passive components; modeling and design of high-frequency structures using artificial neural networks and space mapping; field-effect types of transistors – nanoscale FETs; RF MEMS switches and switch matrices; and substrate-integrated antennas on silicon. The book contains comprehensive reviews of the latest research results, theoretical issues and system performances for silicon-based mm-wave systems. It will be a valuable resource to both experienced engineers and researchers as well as beginners to this exciting field.

   Contents: Measurement Techniques and Practical Issues; Transmission lines and passive components; Modeling and Design of High Frequency Structures Using Artificial Neural Networks and Space Mapping; Field-effect types of transistors – Nanoscale FETs; RF MEMS Switches and Switch Matrices; and Substrate-Integrated Antennas on Silicon

4. M.J. Deen and T. A. Fjeldy, Editors, **Selected Topics in Electronics and Systems - Vol. 24**: **CMOS RF Modeling, Characterization and Applications,** World Scientific Publishing, Singapore, 409 pages (2002).

   Publisher's Description: CMOS technology has now reached a state of evolution, in terms of both frequency and noise, where it is becoming a serious contender for radio frequency (RF) applications in the GHz range. Cutoff frequencies of about 50 GHz have been reported for 0.18 μm CMOS technology, and are expected to reach about 100 GHz when the feature size shrinks to 100 nm within a few years. This translates into CMOS circuit operating frequencies well into the GHz range, which covers the frequency range of many of today's popular wireless products, such as cell phones, GPS (Global Positioning System) and Bluetooth. Of course, the great interest in RF CMOS comes from the obvious advantages of CMOS technology in terms of production cost, high-level integration, and the ability to combine digital, analog and RF circuits on the same chip. This book discusses many of the challenges facing the CMOS RF circuit designer in terms of device modeling and characterization, which are crucial issues in circuit simulation and design.

   Contents: RF MOS Measurements; MOSFET Modeling and Parameter Extraction for RF IC's; MOSFET Modeling for RF IC Design; RF CMOS Noise Characterization and Modeling; SOI CMOS Transistors for RF and Microwave Applications; and RF CMOS Reliability.

5. E. A. Gutierrez-D., M.J. Deen and C. Claeys, Editors, **Low Temperature Electronics: Physics, Devices, Circuits and Applications,** Academic Press, New York, 964 pages (2001).

   Publisher's Description: Low Temperature Electronics: Physics, Devices, Circuits, and Applications summarizes the recent advances in cryoelectronics starting from the fundamentals in physics and semiconductor devices to electronic systems, hybrid superconductor-semiconductor technologies, photonic devices, cryocoolers and thermal management. Furthermore, this book provides an exploration of the currently available theory, research, and technologies related to cryoelectronics, including treatment of the solid state physical properties of the materials used in these systems.

   Current applications are found in infrared systems, satellite communications and medical equipment. There are

opportunities to expand in newer fields such as wireless and mobile communications, computers, and measurement and scientific equipment. Low temperature operations can offer certain advantages such as higher operational speeds, lower power dissipation, shorter signal transmission times, higher semiconductor and metal thermal conductivities, and improved digital and analog circuit performance.

The computer, telecommunication, and cellular phone market is pushing the semiconductor industry towards the development of very aggressive device and integrated circuit fabrication technologies. This is taking these technologies towards the physical miniaturization limit, where quantum effects and fabrication costs are becoming a technological and economical barrier for further development. In view of these limitations, operation of semiconductor devices and circuits at low temperature (cryogenic temperature) is studied in this book.

It is a book intended for a wide audience: students, scientists, technology development engineers, private companies, universities, etc. It contains information which is for the first time available as an all-in-one source; Interdisciplinary material is arranged and made compatible in this book. It is a must as reference source.

6. **Solid-State Electronics and Photonics in Biology and Medicine 5,** Eds., Y.-L. Wang, A.M. Hoff, C.-T. Lin, W. Wu, L.F. Marsal, M.J. Deen, T. Sakata, Z.-H. Lin and Z.P. Aguilar, ECS Transactions, Vol. 85, Issue 9, 233rd Meeting of The Electrochemical Society, Seattle, Washington, USA (13-17 May 2018).
7. **Organic Semiconductor Materials, Devices, and Processing 4,** Eds., M.J. Deen, D. Gundlach, B. Iniguez and H. Klauk, ECS Transactions, Vol. 53, Issue 26, 223rd Meeting of The Electrochemical Society, Toronto, Canada (12-16 May 2013).
8. **ICNF 2011 – IEEE Proceedings of 21st International Conference on Noise and Fluctuations,** Eds. M.J. Deen and C.H. Chen, Toronto, Canada, 504 pages (12-16 June 2011).
9. **Organic Semiconductor Materials, Devices, and Processing 3**, Ed., M.J. Deen, ECS Transactions, Vol. 35, Issue 19, 219th ECS Meeting, Montreal, QC, Canada (1 6 May 2011).
10. **Silicon Nitride, Silicon Dioxide and Emerging Dielectrics 10 (Tenth International Symposium),** Eds., R. E. Sah, J.F. Zhang, M.J. Deen, J. Yota, and Y. Toriumi, The Electrochemical Society, Proceedings Series, Pennington, N.J., ECS Transactions, Vol. 19, No. 2, 857 pages (2009).
11. **Organic Semiconductor Materials, Devices, and Processing 2**, Ed., M.J. Deen and H. Klauk, ECS Transactions, Vol. 25, Issue 26, 216th ECS Meeting, Vienna, Austria (4-9 October 2009).
12. **Silicon Nitride, Silicon Dioxide and Emerging Dielectrics 9 (Ninth International Symposium),** Eds., R. E. Sah, M.J. Deen, J.F. Zhang, J. Yota, and Y. Kamakura, The Electrochemical Society, Proceedings Series, Pennington, N.J., ECS Transactions Vol. 6, No. 3, 847 pages (2007).
13. **Sensors Based on Nanotechnology 3**, Ed., J. Li, M.J. Deen, E. Traversa, ECS Transactions, Vol. 6, Issue 26, 211th ECS Meeting, Chicago, Illinois (6-10 May 2007).
14. **Bioelectronics, Biointerfaces, and Biomedical Applications 2**, Eds., D. Landheer, R. Bashir, M. Deen, C. Kranz, C. Liu, M. Madou, A. Offenhaeusser, R. Schasfoort, ECS Transactions, Vol. 3, Issue 26, 210th ECS Meeting, Cancun, Mexico, 40 pages (29 October – 3 November 2006).
15. **Noise in Devices and Circuits III,** Eds., A. Balandin, F. Danneville, M.J. Deen and D.M. Fleetwood, SPIE Proceedings Series Vol. 5844, Bellingham, Washington (2005).
16. **Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics (Eight International Symposium),** Eds., R. E. Sah, M.J. Deen, J. Zhang, Y. Yota, and Y. Kamakura, The Electrochemical Society, Proceedings Series, Pennington, N.J., PV2005-01, 588 pages (2005).
17. **Noise in Devices and Circuits II,** Eds., F. Danneville, F. Bonani, M.J. Deen and M.E. Levinhstein, SPIE Proceedings Series Vol. 5470, 588 pages, Bellingham, Washington (2004).
18. **Noise in Devices and Circuits I,** Eds., M.J. Deen, Z. Celik-Butler and M.E. Levinhstein, SPIE Proceedings Series Vol. 5113, Bellingham, Washington, 516 pages (2003).
19. **Silicon Nitride and Silicon Dioxide Thin Insulating Films (Seventh International Symposium),** Eds., R.E. Sah, M.J. Deen, D. Landheer, K.B. Sundaram, W.D. Brown and D. Misra, The Electrochemical Society, Proceedings Series, Pennington, N.J., PV-03, 636 pages (2003).
20. **Integrated Optoelectronics (First International Symposium),** Eds., M.J. Deen, D. Misra and J. Ruzyllo, Electrochemical Society Proceedings Series Volume 2002-4, Penington, New Jersey, 436 pages (2002).
21. **Silicon Nitride and Silicon Dioxide Thin Insulating Films (Sixth International Symposium),** Eds., K.B. Sundaram, M.J. Deen, D. Landheer, W.D. Brown, D. Misra, M.D. Allendorf and R.E. Sah, Electrochemical Society Series, Penington, New Jersey, Proceedings Volume PV 2001-7, 286 pages (2001).
22. **Silicon Nitride and Silicon Dioxide Thin Insulating Films (Fifth Int. Sym.)**, Eds., K.B. Sundaram, M.J. Deen, W. Brown, R. Sah, E. Poindexter, D. Misra, Electrochem. Soc. Series, Penington, NJ, Proc. Vol. PV-99- 284 pages (1999).
23. **State-of-the-Art Program on Compound Semiconductors XXVI (Twenty-Sixth Int. Sym.),** Eds., D.N. Buckley,

S.N.G. Chu, H.Q. Hou, R.E. Sah, J.P. Vilcot and M.J. Deen, Electrochemical Society Series, Penington, New Jersey, Proceedings Volume PV-97-1, 402 pages (1997).

24. **Low Temp. Electronics and High Temp. Superconductivity (4th Int. Sym.),** Eds., C. Claeys, S.I. Raider, M.J. Deen, W. Brown and R.K. Kirschman, Electrochem. Soc. Series, Penington, New Jersey, Proc. Vol. PV-97-2, 322 pages (1997).
25. **Silicon Nitride and Silicon Dioxide Thin Insulating Films (4th Int. Sym.),** Eds., M.J. Deen, W.D. Brown, S.I. Raider and K.B. Sundaram, Electrochemical Society Series, Penington, New Jersey, Proc. Volume PV-97-10, 588 pages, (1997).

Book Chapters

- **Total Book Chapters – 25**
- **Invited Book Chapters - 19**

1. S. Seghir Mechaour, A Derardja, M.J. Deen and P.R. Selvaganapathy, "*New Morphology of a Silver Chloride Surface Grown on Silver Wires*," in **Advanced Structured Materials book series** (**STRUCTMAT**, Volume 72) "**Improved Performance of Materials**" pp 63-71 (2018).
2. **Invited Contribution,** M.J. Deen and F. Pascal, "*Electrical Characterization of Semiconductor Materials and Devices*," in **Springer Handbook of Electronic and Optoelectronic Materials**, Second Edition, Eds. Safa Kasap and Peter Capper, Springer Science and Business Media Inc., New York, (2016).
3. **Invited Contribution,** Y.M. El-Batawy, F.M. Mohammedy and M.J. Deen, "*Resonant Cavity Enhanced Photodetectors*: *Theory, Design and Modeling*," in **Photodetectors: Materials, Devices and Applications**, Woodhead Publishing Series in Electronics and Optical Materials – Vol. 84, Ed. Bahram Nabet, Chapter 13, pp. 415-470, Woodhead Publishing – Elsevier, Cambridge, UK (2016).
4. **Invited Contribution,** M.J. Deen, "Organic Semiconductor Devices," **Wiley Encyclopedia of Electrical and Electronics Engineering**, Editor, J.G. Webster, John Wiley and Sons, Inc., 17 pages (Published on-line 15 Dec 2014).
5. O. Moldovan, A. Lazaro, F. Danneville, R. Picos, B. Nae, B. Iniguez and M.J. Deen, "*Nanoscale FETs*," in M. Jamal Deen, Editor, **Silicon-based Millimeter-wave Technology, Vol. 174 in Advances in Imaging and Electron Physics,** Academic Press, Amsterdam (Elsevier), pp. 261-347 (December 2012).
6. G.A. Kouzaev, M.J. Deen and N.K. Nikolova, "*Transmission Lines and Passive Components*," in M. Jamal Deen, Editor, **Silicon-based Millimeter-wave Technology, Vol. 174 in Advances in Imaging and Electron Physics,** Academic Press, Amsterdam (Elsevier), pp. 119-222 (December 2012).
7. M.J. Deen and O. Marinov, "*Measurement Techniques and Issues*," in M. Jamal Deen, Editor, **Silicon-based Millimeter-wave Technology, Vol. 174 in Advances in Imaging and Electron Physics,** Academic Press, Amsterdam (Elsevier), pp. 1-117 (December 2012).
8. **Invited Contribution,** D. Landheer, W. R. McKinnnon, W.H. Jiang, G. Lopinski, G. Dubey, N.G. Tarr, M.W. Shinwari and M.J. Deen, "*Bioaffinity Sensors Based on MOS Field—Effect Transistors*," in **Semiconductor Device-Based Sensors for Gas, Chemical, and Biomedical Applications**, Eds. Fan Ren and Steve Pearton, Taylor and Francis Books, Boca Raton, FL, USA, pp. 215-265 (2010).
9. **Invited Contribution,** M.J. Deen and F. Pascal, "*Electrical Characterization of Semiconductor Materials and Devices*," in **Springer Handbook of Electronic and Optoelectronic Materials**, Eds. Safa Kasap and Peter Capper, Springer Science and Business Media Inc., New York, pp. 409-438, (2006).
10. **Invited Contribution,** Z. Wang, M.J. Deen and A. Rahal, "*Modeling of Integrated Inductors and Resistors for Microwave Applications*," in **Integrated Passive Component Technology**, Ed. R.K. Ulrich and L.W. Schapper, Chapter 11, pp. 247-291, IEEE Press, New York, ISBN 0-471-24331-7 (2003).
11. **Invited Contribution,** M. Sanden and M.J. Deen, "*Low Frequency Noise in Advanced Si-Based Bipolar Transistors and Circuits*," in **Noise and Fluctuations Control in Electronic Devices**, Ed. A. Balandin, Chapter 11, pp. 235-247, American Scientific Publishers (2002).
12. **Invited Contribution,** C-H Chen and M.J. Deen, "*RF CMOS Noise Characterization and Modeling*," in **Selected Topics in Electronics and Systems - Vol. 24: CMOS RF Modeling, Characterization and Applications**, Eds. M. Jamal Deen and Tor A. Fjeldy, World Scientific Publishing, Singapore, pp. 199-271 (2002)
13. **Invited Contribution,** S. Naseh and M.J. Deen, "*RF CMOS Reliability*," in **Selected Topics in Electronics and Systems - Vol. 24: CMOS RF Modeling, Characterization and Applications**, Eds. M. Jamal Deen and Tor A. Fjeldy, World Scientific Publishing, Singapore, pp. 363-409 (2002).
14. **Invited Contribution,** M.J. Deen, J. De la Hidalga, "*Circuits and Applications*," in **Device and Circuit Cryogenic Operation for Low Temp. Electronics**, Eds., F. Balestra, G. Ghibaudo, Kluwer Academic Press, pp. 189-262 (2001).
15. E. A. Gutierrez-D., M.J. Deen and C. Claeys, "*General Introduction*," in **Low Temperature Electronics: Physics,**

Devices, Circuits and Applications, Eds., Edmundo A. Gutierrez-D., M. Jamal Deen and Cor Claeys, Academic Press, New York, pp. xi-xx (2001).

16. **Invited Contribution,** J. De la Hidalga-W., M.J. Deen and Y. Xiao, "*Heterostructure and Compound Semiconductor Devices*," in **Low Temperature Electronics: Physics, Devices, Circuits & Applications,** Eds., Edmundo A. Gutierrez-D., M. Jamal Deen & Cor Claeys, Academic Press, New York, pp. 511-646 (2001).
17. **Invited Contribution,** Y. Xiao, M.J. Deen and J. De la Hidalga-W., "*Compound Semiconductor Lasers and Photodetectors*," in **Low Temperature Electronics: Physics, Devices, Circuits and Applications,** Eds., Edmundo A. Gutierrez-D., M. Jamal Deen & Cor Claeys, Academic Press, New York, pp. 647-840 (2001).
18. E. A. Gutierrez-D., M.J. Deen and C. Claeys, "*Conclusions, Trends and Perspectives*," in **Low Temperature Electronics: Physics, Devices, Circuits and Applications,** Eds., Edmundo A. Gutierrez-D., M. Jamal Deen and Cor Claeys, Academic Press, New York, pp. 935-951 (2001).
19. **Invited Contribution,** A. Bandyopadhyay and M.J. Deen, "*Photodetectors for Optical Fiber Communications*," *in* Photodetectors and Fiber Optics, Ed. H.S. Nalwa, Academic Press, pp. 307-368 (2001).
20. **Invited Contribution,** S. An and M.J. Deen, "*Photodetectors*," **Optoelectronics and Photonics (CD-ROM Book)**, Ed. S. Kasap, Univ of Saskatchewan, 40 ms pages (2000).
21. **Invited Contribution,** M.J. Deen, "*Organic Semiconductor Devices*," **Wiley Encyclopedia of Electrical and Electronics Engineering - Vol. 15,** Editor, J.G. Webster, pp. 419-429 (1999).
22. **Invited Contribution,** P. Kolev and M.J. Deen, *"Development and Applications of a New DLTS Method and New Averaging Techniques*," **Advances in Imaging & Electron Physics,** Ed. P. Hawkes, Academic Press, New York, Vol. 109, pp. 1-161 (1999).
23. **Invited Contribution,** T. Hardy, M.J. Deen and R. Murowinski, "*Effects of Radiation Damage in Scientific Charge Coupled Devices*," **Advances in Imaging and Electron Physics,** Vol. 106, Editor P. Hawkes, Academic Press, Vol. 106, pp. 1-96 (1999).
24. **Invited Contribution,** M.J. Deen, "*High Temperature Characteristics of AlAs-GaAs-AlAs Quantum Well Diodes*," **High Temperature Electronics,** Editor R.K. Kirschman, IEEE Press Book, pp. 435-444 (1998).
25. **Invited Contribution,** C.L.F. Ma, M.J. Deen and L. Tarof, "*Characterization and Modeling of SAGCM InP/ InGaAs Avalanche Photodiodes for Multigigabit Optical Fiber Communications*," **Advances in Imaging and Electron Physics,** Vol. 99, Editor P. Hawkes, Academic Press, pp. 65-170 (1998).

Patents

1. M.J. Deen, P. Selvaganapathy, M.W. Shinwari "*BioFET Based Microfluidic System*", **Canadian Patent Number** 2,619,000 (11 July 2016).
2. M.M. Eldesouki & M.J. Deen, "*Injection Locking Based Power Amplifier*," **US Patent Number** 9,099,956 (4 Aug 2015).
3. M.M. Eldesouki, M.J. Deen and Q. Fang, "*Coordinated In-pixel Light Detection Method and Apparatus*," **US Patent Number** 8,859,944 (14 October 2014).
4. M.M. Eldesouki, M.J. Deen and Q. Fang, "*Single Photon Counting Image Sensor and Method*", **U.S. Patent Number** 8,716,643, 46 pages (6 May 2014).
5. M.M. Eldesouki, M.J. Deen and Q. Fang, "*High-speed Analog Photon Counter and Method*", **U.S. Patent Number** 8,581,172, 46 pages (12 November 2013).
6. M.M. Eldesouki, M.J. Deen and Q. Fang, "*Reduction of Delay Between Subsequent Capture Operations of a Light-detection Device*," **U.S. Patent Number** 8,410,416 (Apr 2, 2013).
7. M.J. Deen, Z.X. Yan and D. S. Malhi, "*Gain-Controlled Amplifier and Automatic Gain Control Amplifier Using GCLBT*," **U.S. Patent Number** 5,764,106, 21 pages (9 June 1998).
8. D. S. Malhi, M.J. Deen, W. Kung, J.I. Ilowski and S. Kovacic, "*Gate Controlled Lateral Bipolar Junction Transistor*," **U.S. Patent Number** 5,717,241, 16 pages (10 February, 1998).
9. M.J. Deen, D. S. Malhi, Z.X. Yan and R.H. Hadaway, "*Modulation Circuit,*" **U.S. Patent Number 5,498,855,** 15 pages (12 March 1996).
10. B. Jaggi, M.J. Deen and B. Palcic, *Solid State Microscope,"* **European Patent Pub. No. 0 380 904 (B1),** 20 pages (4 May 1994).
11. B. Jaggi, M.J. Deen & B. Palcic, "*Solid State Microscope*," **Canadian Patent Number 1,304,612**, 40 pages (7 Jul 1992).
12. B. Jaggi, M.J. Deen and B. Palcic, "*Quantitative Light Microscope Using a Solid State Detector in the Primary Image Plane*," **US Patent Number 4,845,552,** 14 pages (4 July, 1989).

Invited Journal Papers

- **Total Invited and Contributed Journal Papers - 363**
- **Total Invited/Feature Journal Papers – 36**

1. **Invited Paper,** O. Marinov, M.J. Deen, J. A. Jiménez-Tejada and C-H. Chen, "*Variable-Range Hopping Charge Transport in Organic Thin-Film Transistors*," **Physics Reports**, >200 Pages, In Press (Accepted 10 December 2019).
2. **Invited Review Paper,** Wei Jiang, Yamn Chalich, M Jamal Deen, "Sensors for Positron Emission Tomography Applications" Sensors, Vol. 19(22), pp. 5019 - 56 pages (November 2019)
3. **Invited Paper,** J. A. Jiménez-Tejada, A. Romero, J. González, N. B. Chaure, A. N. Cammidge, I. Chambrier, A. K. Ray and M. J. Deen "*Evolutionary Computation for Parameter Extraction of Organic Thin-Film Transistors Using Newly Synthesized Liquid Crystalline Nickel Phthalocyanine*", **Micromachines**, Vol. 10(10), 26 pages (October 2019).
4. **Feature Review Paper,** A.I. Faisal, S. Majumder, T. Mondal, D. Cowan, S. Naseh and M.J. Deen, "*Monitoring Methods of Human Body Joints: State-of-the-Art and Research Challenges*," **Sensors**, Vol. 19(11), pp. 2629 – 39 pages (10 June 2019).
5. **Feature Review Article,** S. Majumder, T. Mondal and M.J. Deen, "*Wearable Sensors for Remote Health Monitoring*", **Sensors**, vol. 17, 45 pages, On-line (12 Jan 2017).
6. **Invited Paper,** O. Moldovan, B. Iñiguez, M.J. Deen, L.F. Marsal "*Graphene Electronic Sensors – A Review of Recent Developments and Future Challenges*", **IET Circuits, Devices & Systems**, Vol. 9(6), pp. 446-453 (November 2015).
7. **Invited Paper,** M. Jamal Deen, **"***Information and Communications Technologies for Elderly Ubiquitous Healthcare in a Smart Home*," **Personal and Ubiquitous Computing (Special Issue on Aspects of ubiquitous computing for improved clinical practice)**, Vol. 19, Issue 3-4, pp. 573-599 (July 2015).
8. **Invited Paper,** M.M.R. Howlader, M. Jamal Deen, and T. Suga, **"***Nanobonding – A Key Technology for Emerging Applications in Health and Environmental Sciences***," Japanese Journal of Applied Physics,** Vol. 54(3), 10 pages, DOI:10.7567/JJAP.54.030201, (On-line, 2015).
9. **Invited Paper,** J.A. Jiménez Tejada, J.A. López Villanueva, P. López Varo, K. M. Awawdeh and M.J. Deen, "*Compact Modelling and Contact Effects in Thin Film Transistors*," **IEEE Transactions on Electron Devices** (**Special Issue on Compact Modeling of Emerging Devices**), Vol. 61(2), pp. 266-277 (February 2014).
10. **Invited Paper,** M.M.R. Howlader, P.R. Selvaganapathy, M.J. Deen and T. Suga, "*Nanobonding Technology Toward Electronic, Fluidic and Photonic Systems Integration*," **IEEE Journal of Selected Topics in Quantum Electronics**, Vol. 17(3), pp. 689-703 (May/June 2011).
11. **Feature Article,** M.W. Shinwari, M.J. Deen, E.B. Starikov and G. Cuniberti, "*Electrical Conductance in Biological Molecules*," **Advanced Functional Materials**, Vol. 20 (12), pp. 1865-1883 (23 June 2010).
12. **Invited Review Paper,** Farseem M. Mohammedy and M. Jamal Deen, "*Growth and Fabrication Issues of GaSb-based Detectors*," **Journal of Materials Science: Materials in Electronics,** Vol. 20(10), pp. 1039-1058 (November 2009).
13. **Invited Paper,** N. Faramarzpour, M.M. El-Desouki, M.J. Deen, S. Shirani and Q. Fang, "*CMOS Photodetector Systems for Low-Level Light Applications*," **Journal of Materials Science: Materials in Electronics (Special issue for ICOOPMA 2007),** Vol. 20(Supplement 1), pp. S87-S93 (January 2009).
14. **Invited Paper,** M.W. Shinwari, M.J. Deen, and P. Selvaganapathy, "*Analytic Modeling of Biotransistors*," **IET Circuits, Devices & Systems (Special issue for CODEC 2006)**, Vol. 2(1), pp. 158-165 (February 2008).
15. **Invited Paper,** M.W. Shinwari, M.J. Deen and D. Landheer, "*Study of the Electrolyte-Insulator-Semiconductor Field-Effect Transistor* (*EISFET*) *with Applications in Biosensor Design*," **Microelectronics Reliability,** Vol. 47(12), pp. 2025-2057 (December 2007).
16. **Invited Paper,** J.C. Ranuarez, M.J. Deen and C-H Chen, "*A Review of Gate Tunneling Current in MOS Devices*," **Microelectronics Reliability,** Vol. 46(12), pp. 1939-1956 (December 2006).
17. **Invited Paper,** B. Iñiguez, T.A. Fjeldly, A. Lázaro, F. Danneville and M.J. Deen, "*Compact Modeling Solutions For Nanoscale Double-Gate and Gate-All-Around MOSFETs*," **IEEE Transactions on Electron Devices (Special Issue on Advanced Compact Models and 45-nm Modeling Challenges),** Vol. 53(9), pp. 2128-2142 (Sept. 2006).
18. **Invited Paper,** M.J. Deen, C.-H. Chen, S. Asgaran, G. A. Rezvani, J. Tao and Y. Kiyota, "*High Frequency Noise of Modern MOSFETs: Compact Modeling and Measurement Issues*," **IEEE Transactions on Electron Devices (Special Issue on Advanced Compact Models and 45-nm Modeling Challenges),** Vol. 53(9), pp. 2062-2081(Sept. 2006).
19. **Invited Paper,** M.J. Deen, B. Iniguez, O. Marinov. F. Lime, "*Electrical Studies of Semiconductor-Dielectric Interfaces*," **Special Issue - Journal of Materials Science: Materials in Electronics,** Vol. 17(9), pp. 663-683 (September 2006).

20. **Invited Review Paper,** M.J. Deen and F. Pascal, "*Electrical Characterization of Semiconductor Materials and Devices*," **Journal of Materials Science: Materials in Electronics,** Vol. 17(8), pp. 549-575 (August 2006).
21. **Invited Paper,** S. Naseh, M.J. Deen, C-H. Chen, "*Hot-carrier Reliability of Submicron NMOSFETs and Integrated NMOS Low Noise Amplifiers*," **Microelectronics Reliability,** Vol. 46(2-4), pp. 201-212 (Feb.-April 2006).
22. **Invited Paper,** M.J. Deen, R. Murji, A. Fakhr, N. Jafferali and W. L. Ngan, "*Low Power CMOS Integrated Circuits for Radio Frequency Applications*," **IEE Proceedings - Circuits, Devices and Systems,** Vol. 152(5), pp. 509-522 (October 2005).
23. **Invited Paper,** A. Jiménez-P, F.J. De la Hidalga-W, and M.J. Deen, "*Modelling of the Dynamic Threshold MOSFET*," **IEE Proceedings - Circuits, Devices and Systems**, Vol. 152(5), pp. 502-508 (October 2005).
24. **Invited Paper,** M.J. Deen and M. H. Kazemeini, "*Photosensitive Polymer Thin-Film Field-Effect Transistors Based on Poly*(*3-octylthiophene*)," **Proceedings of the IEEE (Special Issue on Flexible Electronics Technology - Part 1: Systems and Applications**), Vol. 93(7), pp. 1312-1320 (July 2005).
25. **Invited Paper,** Y. Cheng, M.J. Deen and C-H. Chen, "*MOSFET Modeling for RFIC Design*," **IEEE Transactions on Electron Devices (Special Issue on IC Technologies for RF Circuit Applications),** Vol. 52(7), pp. 1286-1303 (July 2005).
26. **Invited Paper,** O. Marinov, M.J. Deen, J. Yu, G. Vamvounis, S. Holdcroft, W. Woods, "*Low-Frequency Noise in Polymer Thin-Film Transistors*," **IEE Proc. - Circuits, Devices and Systems,** Vol. 151(5), pp. 466-472 (Oct. 2004).
27. **Invited Paper,** Y. Ardeshirpour, M.J. Deen and S. Shirani, "*2-D CMOS Based Image Sensor System for Fluorescent Detection*," **Canadian Journal of Electrical and Computer Engineering**, Vol. 29(4), pp. 231-235 (October 2004).
28. **Invited Paper,** O. Marinov and M.J. Deen, "*Physical Model for Low Frequency Noise in Avalanche Breakdown of pn Junctions*," **Fluctuations and Noise Letters**, Vol. 4(2), pp. L287-L296 (June 2004).
29. **Invited Paper**, F. Pascal, C. Chay, M.J. Deen, S. G-Jarrix, C. Delseny, A. Penarier, "*Comparison of Low Frequency Noise in III-V and Si/SiGe HBTs*," **IEE Proc. - Circuits, Devices and Systems**, Vol. 151(2), pp. 138-147 (April 2004).
30. **Invited Paper**, M.J. Deen and P. Pascal, "*A Review of Low Frequency Noise Behavior of Polysilicon Emitter Bipolar Junction Transistors*," **IEE Proceedings - Circuits, Devices and Systems**, Vol. 151(2), pp. 125-137 (April 2004).
31. **Best Paper Award** - **Invited Paper**, M. Marin, M.J. Deen M. de Murcia, P. Llinares and J.C. Vildeuil, "*Effects of Body Biasing on the Low Frequency Noise of MOSFETs from a 130nm CMOS Technology*," **IEE Proceedings - Circuits, Devices and Systems**, Vol. 151(2), pp. 95-101 (April 2004).
32. **Invited Paper**, M.J. Deen and E. Simoen, "*Low Frequency Noise in Polysilicon Emitter Bipolar Transistors*," **IEE Proceedings - Circuits, Devices and Systems**, Vol. 49(1), pp. 40-50 (February 2002).
33. **Invited Paper**, C-H. Chen and M.J. Deen, *RF CMOS Noise Characterization and Modeling*, **International Journal of High Speed Electronics and Systems**, Vol. 11(4), pp. 1085-1157 (2001).
34. **Invited Paper**, S. Naseh and M.J. Deen, "*RF CMOS Reliability*," **International Journal of High Speed Electronics and Systems**, Vol. 11(4), pp. 1249-1295 (2001).
35. **Invited Paper**, M.J. Deen and S. Rumyantsev, "*Low Frequency Noise in Polysilicon Emitter Bipolar Junction Transistors*," **Microelectronics Reliability**, Vol. 40(11), pp. 1855-1861 (November 2000).
36. **Invited Paper**, M.J. Deen, "*Cryogenic Operation of CMOS-based Microsystems and Computers*," **Microprocessors and Microsystems**, Vol. 13(4), pp. 245-253 (May 1989).

Journal Papers

● Total Contributed Journal Papers – 327

1. M. Naghshvarianjahromi, S. Kumar and M. J. Deen, "*Brain-Inspired Cognitive Decision Making for Nonlinear and Non-Gaussian Environments*," **IEEE Access**, 14 pages, In Press (Accepted 9 December 2019).
2. M. Naghshvarianjahromi, S. Kumar and M. J. Deen, "*Brain-Inspired Intelligence for Real-time Health Situation Understanding in Smart e-Health Home Applications*," **IEEE Access**, 22 pages, In Press (Accepted 5 December 2019).
3. A.Y. Elsharabasy, A. H. Alshehri, M.H. Bakr MJ Deen, K. P Musselman and M. Yavuz, "*Near Zero-bias MIIM diode Based on TiO_2/ZnO for Energy Harvesting Applications*," **AIP Advances**, Vol. 9(11), pp. 115207, 8 pages (Nov 2019).
4. A. Romero, J. González, M. J. Deen, J. A. Jiménez Tejada, "*Versatile Model for the Contact Region of Organic Thin-film Transistors*," **Organic Electronics**, In Press, 11 pages (October 2019).
5. X. Wang, L. T. Yang, Y. Wang, X. Liu, Q. Zhang and M. J. Deen, *"A Distributed Tensor-train Decomposition Method for Cyber-physical-social Services*," **ACM Transactions on Cyber-Physical Systems**, Vol. 3(4), 15 pages (Oct 2019).
6. A.U. Alam, M.R. Howlader, N-X. Hu and M.J. Deen, "*Electrochemical Sensing of Lead in Drinking Water using* β-*Cyclodextrin-Modified MWCNTs*," **Sensors and Actuators B. Chemical**, vol. 296, 6 pages, In Press (1 October 2019).
7. A.Y. Elsharabasy, A.S. Negm, M.H. Bakr and MJ Deen, "*Global Optimization of Rectennas for IR Energy Harvesting at* 10.6 μ*m*," **IEEE Journal of Photovoltaics**, Vol. 9 (5), pp. 1232 – 1239 (September 2019).

8. A.Y. Elsharabasy, M.H. Bakr and MJ Deen, "*Design of Metal Mesh THz Filters Exploiting Adjoint Sensitivity Analysis*," **Applied Computational Electromagnetics Society Journal**, Vol. 34(8), pp. 1234 – 1237 (August 2019).
9. S. Majumder and M.J. Deen, "*Smartphone Sensors for Health Monitoring and Diagnosis*," **Sensors**, vol. 19(9), 2164 – 45 pages (2019).
10. A. Romero, C. Jiménez, J. González, P. López-Varo, M. J. Deen, J. A. Jiménez Tejada, "*Compact Modeling of the Effects of Illumination on the Contact Region of Organic Phototransistors*," **Organic Electronics**, Vol. 70, pp 113-121 (July 2019).
11. M. Naghshvarianjahromi, S. Kumar and M. J. Deen, "*Brain Inspired Dynamic System for the Quality of Service Control over the Long-Haul Nonlinear Fiber-Optic Link*," **Sensors**, Vol. 19(9), 2175 – 25 pages (10 May 2019).
12. Y. Liu, L. Zhang, Y. Yang, L. Zhou, L. Ren, F. Wang, R. Liu, Z. Pang and M.J. Deen, "*A Novel Cloud-based Framework for the Elderly Healthcare Services Using Digital Twin*", **IEEE Access**, Vol. 7, pp. 49088-49101 (11 April 2019).
13. P. Li, Z. Chen, L. T. Yang, J. Gao, Q. Zhang and M.J. Deen, "*An Incremental Deep Convolutional Computation Model for Feature Learning on Industrial Big Data*," **IEEE Transactions on Industrial Informatics**, Vol. 15(3), pp. 1341-1349 (March 2019).
14. S. Majumder, T. Mondal and M. J. Deen, "*A Simple, Low-cost and Efficient Gait Analyzer for Wearable Healthcare Applications*," **IEEE Sensors Journal**, Vol. 19(6), pp. 2320-2329 (15 March 2019).
15. L. Zhao, Z. Chen, L. T Yang, M. J. Deen and Z. J. Wang, "*Deep Semantic Mapping for Heterogeneous Multimedia Transfer Learning Using Co-Occurrence Data*," **ACM Transactions on Multimedia Computing, Communications, and Applications**, vol. 15, no. 1s, 9 pages (January 2019).
16. X. Wang, L.T. Yang, L. Kuang, X. Liu, Q. Zhang and M.J. Deen, "*A Tensor-based Big Data-Driven Routing Recommendation Approach for Heterogeneous Networks*", **IEEE Network**, Vol. 33, no.1, pp. 64 – 69 (January/February 2019).
17. X. Wang, L.T. Yang, X. Chen, L. Wang, R. Ranjan, X. Chen, and M.J. Deen, "*A Multi-order Distributed HOSVD with its Incremental Computing for Big Services in Cyber-Physical-Social Systems*", **IEEE Transactions on Big Data**, In press, 14 pages (2018). DOI: 10.1109/TBDATA.2018.2824303
18. X. Wang, L.T. Yang, X. Chen, M.J. Deen and J. Jin, "*Improved Multi-order Distributed HOSVD with its Incremental Computing for Smart City Services*," **IEEE Trans. on Sustainable Computing**, In Press, 14 pages (15 Nov 2018).
19. P. Li, Z. Chen, L. T. Yang, J. Gao, Q. Zhang and M. J. Deen, "*An Improved Stacked Auto-Encoder for Network Traffic Flow Classification*," **IEEE Network**, vol. 32, no. 6, pp. 22-27 (Nov/Dec 2018).
20. M. Alayed, D. Palubiak, and M.J. Deen, "*Characterization of a Time-Resolved Diffuse Optical Spectroscopy Prototype Using Low-Cost, Compact Single Photon Avalanche Detectors for Tissue Optics Applications*," **Sensors**, vol. 18(11), 18 pages (Published on-line, 29 October 2018).
21. A. Romero, J. González, R. Picos, M.J. Deen and JA Jiménez-Tejada, "*Evolutionary parameter extraction for an organic TFT compact model including contact effects*," **Organic Electronics**, vol. 61, pp. 242-253 (October 2018).
22. X. Wang, L.T. Yang, H. Liu, and M.J. Deen, "*A Big Data-as-a-Service Framework: State-of-the-art and Perspectives*," **IEEE Transactions on Big Data**, Vol. 4, No. 3, pp. 325-340 (July- September 2018).
23. A. Ul Alam, Y. Qin, M. Catalano, L. Wang, M.J. Kim, M.R. Howalder, N-X. Hu and M. J. Deen, "*Tailoring MWCNTs and β-Cyclodextrin for Sensitive Detection of Acetaminophen and Estrogen*," **ACS Applied Materials and Interfaces**, vol. 10, pp. 21411-21427 (2018).
24. Q. Zhang, L.T. Yang, Z. Chen, P. Li and M.J. Deen, "*Privacy-preserving double-projection deep computation model with crowdsourcing on cloud for big data feature learning*," **IEEE Internet of Things Journal**, vol. 5(4), pp. 2896-2903 (August 2018). **Highly cited paper.**
25. X. Wang, W. Wang, L.T. Yang, S. Liao, D. Yin and M.J. Deen, "*A Distributed HOSVD Method With Its Incremental Computation for Big Data in Cyber-Physical-Social Systems*," **IEEE Transactions on Computational Social Systems**, vol. 5(2), pp. 481-492 (May 2018).
26. A. Ul Alam, Y. Qin, S. Nambiar, J. Yeow, M. Howlader, N-X. Hu and M.J. Deen, "*Polymers and Organic Materials-Based pH Sensors for Healthcare Applications*," **Progress in Materials Science,** Vol. 96, pp. 174-216 (July 2018).
27. S. Majumder, L. Chen, O. Marinov, C.H. Chen, T. Mondal and M.J. Deen, "*Non-Contact Wearable Wireless ECG Systems for Long Term Monitoring*," **IEEE Reviews in Biomedical Engineering**, vol. 11, pp. 306-321 (May 2018).
28. L.T. Yang, X. Wang, X. Chen, L. Wang, R. Ranjan, X. Chen and M.J. Deen, "*A Multi-order Distributed HOSVD with its Incremental Computing for Big Services in Cyber-Physical-Social Systems*," **IEEE Transactions on Big Data**, In Press (April 2018).
29. P. Mandal, K. Tank, T. Mondal, C.H. Chen, and M.J. Deen, "*Predictive Walking-Age Health Analyzer*," **IEEE Journal of Biomedical and Health Informatics,** vol. 22(2), pp. 363-374 (March 2018).
30. Y. Qin, A.U. Alam, S. Pan, M.M.R. Howlader, R. Ghosh, N.X. Hu, H. Jin, S. Dong, C.H. Chen, and M.J. Deen,

"*Integrated Water Quality Monitoring System with pH, Free Chlorine, and Temperature Sensors*," **Sensors and Actuators B: Chemical**, Vol. 255, Part 1, pp. 781-790 (February 2018).

31. L-H. Hsu, M.J. Deen, and P.R. Selvaganapathy, "*Complete Solid State Dissolved Oxygen Sensor Using Hemin Electrocatalyst and Palladium-Reusable Reference Electrode*," **IEEE Sensors Journal**, Vol. 18(3), pp. 941-947 (February 2018).
32. P. Li, Z. Chen, L.T. Yang, Q. Zhang and M.J. Deen, "*Deep Convolutional Computation Model for Feature Learning on Big Data in Internet of Things*," **IEEE Transactions on Industrial Informatics**, vol. 14 (2), pp. 790-798 (Feb. 2018). **Highly cited paper.**
33. M. Alayed, M.A. Naser, I. Aden Ali, and M.J. Deen, "*Time-resolved Diffuse Optical Tomography System Using an Accelerated Inverse Problem Solver*," **Optics Express**, Vol. 26(2), pp. 963-979 (January 2018).
34. S. Seghir Mechaour, A. Derardja, K. Oulmi, and M.J. Deen, "*Effect of the Wire Diameter on the Stability of Micro-Scale Ag/AgCl Reference Electrode*," **Journal of The Electrochemical Society**, Vol. 164(14), pp. E560-E564 (2017).
35. A.U. Alam, Y. Qin, M.M.R. Howlader, N.X. Hu, and M.J. Deen, "*Electrochemical Sensing of Acetaminophen Using Multi-walled Carbon Nanotube and* β*-cyclodextrin*," **Sensors and Actuators B: Chemical**, vol. 254, pp. 896-909 (January 2018).
36. A. Shahid, S. Chong, J. Mahony, M.J. Deen, P.R. Selvaganapathy, "*Electrical Tweezer for Droplet Transportation, Extraction, Merging and DNA Analysis*," **Micromachines**, Vol. 8(12), pp. 353-365 (2017).
37. X. Wang, L.T. Yang, X. Xie, J. Jin and M.J. Deen, "*A Cloud-Edge Computing Framework for Cyber-Physical-Social Services*," **IEEE Communications Magazine,** Vol. 55(11), pp. 80-85 (November 2017).
38. H. Jin, Y. Qin, S. Pan, A. U. Alam, S. Dong, R. Ghosh and M.J. Deen, "*An Open-source Low-cost Wireless Potentiometric Instrument for pH Determination Experiments*," **Journal of Chemical Education**, vol. 95(2), pp. 326-330 (2018).
39. X. Zheng, Z. Cheng, M.J. Deen, and H. Peng, "*Effect of Charge Sharing and Characteristic X-ray Emission in CZT Detectors for Photon-Counting Computed Tomography Applications*," **IEEE Transactions on Nuclear Science**, In Press, 9 journal pages (Accepted 4 September 2017).
40. **Review Paper,** S. Majumder, E. Aghayi, M. Noferesti, H. Memarzadeh-Tehran, T. Mondal, Z. Pang and M.J. Deen, "*Smart Homes for Elderly Healthcare – Recent Advances and Research Challenges*," **Sensors**, Vol. 17(11), pp. 2496-2527 (November 2017).
41. **Review Paper,** M. Alayed and M.J. Deen, "*Time-Resolved Diffuse Optical Spectroscopy and Imaging Using Solid-State Detectors: Characteristics, Present Status, and Research Challenges*," **Sensors**, vol. 17 (9), 2115-2150 (2017).
42. H. Jin, X. Tao, S. Dong, Y. Qin, L. Yu, J. Luo, and M.J. Deen, "*Flexible Surface Acoustic Wave Respiration Sensor for Monitoring Obstructive Sleep Apnea Syndrome*," **Journal of Micromechanics and Microengineering**, Vol. 27(11), #115006, 7 pages (2017).
43. P. López-Varo, J.A. Jiménez-Tejada, O. Marinov, J.E. Carceller, C.H. Chen, and M.J. Deen, "*Boundary Condition Model for the Simulation of Organic Solar Cells*", **Organic Electronics**, vol. 48, pp. 85–95 (September 2017).
44. C. Nganou, G. Lackner, B. Teschome, M.J. Deen, N. Adir, D. Pouhe, D. C. Lupascu and M. Mkandawire, "*Energy Transfer Kinetics in Photosynthesis as an Inspiration for Improving Organic Solar Cells*," ACS **Applied Materials and Interfaces**, vol. 9(22), pp. 19030-19039 (12 May 2017).
45. R. Abbasi-Kesbi, H. Memarzadeh-Tehran, and M.J. Deen, "*A Technique to Estimate the Human Reaction Time Based on Visual Perception*," **IET Healthcare Technology Letters,** Vol. 4(2), pp. 73-77 (2 April 2017).
46. A. Elmahdy, Y.M. El-Batawy, M.J. Deen, "*An Equivalent Circuit Model and Biasing Effects Over the Gain and Bandwidth of Waveguide Avalanche Photodetectors* (*WG-APDs*)," **Optical and Quantum Electronics** vol. 49(3), 14 pages, Online, 13 February 2017
47. M.S. Islam, A. Shahid, K. Kuryllo, Y. Li, M.J. Deen, and P.R. Selvaganapathy, "*Electrophoretic Concentration and Electrical Lysis of Bacteria in a Microfluidic Device Using a Nanoporous Membrane*," **Micromachines,** vol. 8(2), 45, Online 3 February 2017.
48. Y. Qin, A.U. Alam, M.M.R. Howlader, N-X. Hu, and M.J. Deen, "*Morphology and Electrical Properties of Inkjet-printed Palladium/Palladium Oxide*," **Journal of Materials Chemistry C**, vol. 5(8), pp. 1893-1902, Published on-line 19 January 2017.
49. X. Wang, L.T. Yang, J. Feng, X. Chen and M.J. Deen, "*A Tensor-Based Big Service Framework for Enhanced Living Environments*," **IEEE Could Computing**, Vol. 3(6), pp. 36-43 (November-December 2016)
50. A. Tsikouras, P. Peronio, I. Rech, N. Hirmiz, M.J. Deen and Q. Fang, "*Characterization of SPAD Array for Multifocal High-Content Screening Applications*", **Photonics**, Vol3(4), #56, 15 pages (Dec 2016).
51. A. U. Alam, Y. Qin, M.M.R. Howlader and M.J. Deen, "*Direct bonding of liquid crystal polymer to glass*," **RSC Advances**, Vol. 6, Issue 109, pp. 107200-107207 (4 November 2016).
52. Y. Qin, S. Pan, M.M.R. Howlader, R. Ghosh, N-X Hu, and M.J. Deen, "*Paper-based, Hand-drawn Free Chlorine*

Sensor with Poly(*3,4-ethylenedioxythiophene*):P*oly(styrenesulfonate*)", **Analytical Chemistry**, Vol. 88(21), pp. 10384-10389 (27 September 2016).

53. P. Lopez-Varo, J.A. Jiménez-Tejada, O. Marinov, C.H. Chen, and M.J. Deen, "*Charge Density at the Contacts of Symmetric and Asymmetric Organic Diodes*," **Organic Electronics**, Vol. 35, pp. 74-86 (August 2016).
54. Y. Qin, H-J. Kwon, A. Subrahmanyam, M.M.R. Howlader, P.R. Selvaganapathy, A. Adronov, and M.J. Deen, "*Inkjet-printed Bifunctional Carbon Nanotubes for pH Sensing*," **Materials Letters**, Vol. 176, pp. 68-70, 1 August 2016.
55. Z. Cheng, D. Palubiak, X. Zheng, M J. Deen, and H. Peng, "*Impact of Silicide Layer on Single Photon Avalanche Diodes in a 130 nm CMOS Process*," **Journal of Physics D: Applied Physics,** Vol. 49(34), #345105, 10 journal pages (July 2016).
56. Y. Qin, A. U. Alam, M.M.R. Howlader, N-X. Hu, and M.J. Deen, "*Inkjet Printing of a Highly Loaded Palladium Ink for Integrated, Low-cost pH Sensors*" **Advanced Functional Materials**, Vol. 26(27), pp. 4923-4933 (19 July 2016).
57. Z. Cheng, X. Zheng, D. Palubiak, M.J. Deen, and H. Peng, "*A Comprehensive and Accurate Analytical SPAD Model for Circuit Simulation*," **IEEE Transactions on Electron Devices**, Vol. 63(5), pp. 1940-1948 (May 2016).
58. Z. Cheng, M.J. Deen, and H. Peng, "*A Low-Power Gateable Vernier Ring Oscillator Time-to-Digital Converter for Biomedical Imaging Application*," **IEEE Transactions on Biomedical Circuits and Systems**, Vol. 10(2), pp. 445-454 (March 2016).
59. X. Zheng, Z. Cheng, M.J. Deen, and H. Peng, "*Improving the Spatial Resolution in CZT Detectors Using Charge Sharing Effect and Transient Signal Analysis: Simulation Study*," **Nuclear Instruments and Methods in Physics Research Section A: Accelerators**, Vol. 808, pp. 60-70 (1 February 2016).
60. Z. Cheng, X. Zheng, M.J. Deen, and H. Peng, "*Recent Developments and Design Challenges of High-Performance Ring Oscillator CMOS Time-to-Digital Converters*," **IEEE Transactions on Electron Devices**, Vol. 63(1), pp. 235-251 (January 2016).
61. Y. Qin, A. U. Alam, S. Pan, M.M.R. Howlader, R. Ghosh, P.R. Selvaganapathy, Y. Wu, and M.J. Deen, "*Low-Temperature Solution Processing of Palladium/Palladium Oxide Films and Their pH Sensing Performance*," **Talanta**, Vol. 146, pp. 517-524 (2016).
62. Y. Qin, M. MR Howlader and M J. Deen, "*Low-Temperature Bonding for Silicon-Based Micro-Optical Systems*," **Photonics**, Vol. 2(4), pp. 1164-1201 (December 2015).
63. M.A. Naser and M.J. Deen, "*Time-domain Diffuse Optical Tomography Using Recursive Direct Method of Calculating Jacobian at Selected Temporal Points*," **Biomedical Physics and Engineering Express**, Vol. 1(4), #045207, 14 journal pages (18 November 2015)
64. D. P. Palubiak, Z. Li and M.J. Deen, "*Afterpulsing Characteristics of Free-Running and Time-Gated Single-Photon Avalanche Diodes in 130-nm CMOS*," **IEEE Transactions on Electron Devices**, Vol. 62(11), pp. 3727-3733 (November 2015).
65. S. Pan, M.J. Deen, and R. Ghosh, "*Low-cost graphite-based free chlorine sensor*," **Analytical Chemistry**, Vol. 87 (21), pp 10734–10737 (12 October 2015).
66. R. Henda, O. Alshekhli, M. Howlader and J. Deen, "*Nanocrystalline Diamond Films Prepared by Pulsed Electron Beam Ablation on Different Substrates*," **Journal of Materials Research**, 8 pages On-line (26 August 2015).
67. Y. Qin, H-J Kwon, M.M.R. Howlader and M.J. Deen, "*Microfabricated Electrochemical pH and Free Chlorine Sensors for Water Quality Monitoring*: *Recent Advances and Research Challenges*," **RSC Advances**, Vol. 5, Issue 85 pp. 69086–69109 (2015).
68. T. Guo, M.J. Deen, C.Q. Xu, Q. Fang, P.R. Selvaganapathy and H. Zhang "*Observation of Ultraslow Stress Release in Silicon Nitride Films on CaF_2*," **Journal of Vacuum Science & Technology A**, Vol. 33, 5 pages, #041515, DOI:10.1116/1.4923029 (June 2015).
69. C. Feng, O. Marinov, M.J. Deen, P.R. Selvaganapathy, Y. Wu, "*Sensitivity of the Threshold Voltage of Organic Thin-film Transistors to Light and Water*," **Journal of Applied Physics**, Vol. 117(18), # 185501, 9 pages (14 May 2015).
70. M.M. El-Desouki, S.M. Qasim, M.S. BenSaleh and M.J. Deen, "*Toward Realization of 2.4 GHz Balunless Narrowband Receiver Front-End for Short Range Wireless Applications*", **Sensors**, Vol. 15(5), pp. 10791-10805 (May 2015).
71. Z. Cheng, X. Zheng, M.J. Deen and H. Peng, "*Development of a High Performance Digital Silicon Photomultiplier* (*dSiPM*) *for ToF PET Imaging*," **Journal of Nuclear Medicine**, Vol. 56(Supplement 3), p. 603 (1 May 2015).
72. M. Howlader, A. Ul Alam, R. Sharma, M.J. Deen, "*Materials Analyses and Electrochemical Impedance of Implantable Metal Electrodes"* **Physical Chemistry Chemical Physics,** 11 pages (Published on-line, 12 March 2015).
73. E-Y. Jeong, M.J. Deen, C-H. Chen, R-H. Baek, J-S. Lee, Y-H. Jeong, "*Physical DC and Thermal Noise Models of 18 nm Double-gate Junctionless p-type MOSFETs for Low Noise RF Applications*," **Japanese Journal of Applied Physics**, Vol. 54(4S), 04DC08-1 to 04DC08-6, 6 pages (April 2015).
74. X. Bian, H. Jin, X. Wang, S-R. Dong, G. Chen, J. Luo, M.J. Deen, and B. Qi, "*UV Sensing Using Film Bulk Acoustic Resonators Based on Au/n-ZnO/Piezoelectric-ZnO/Al Structure*," **Scientific Reports (Nature)**, Vol. 5, Article # 9123,

5 pages (16 March 2015).

75. A. C. Nganou, L. David, N. Adir, D. Pouhe, M.J. Deen, and M. Mkandawire, "*Evidence of Additional Excitation Energy Transfer Pathways in the Phycobiliprotein Antenna System of Acaryochloris Marina*," **Photochemical and Photobiological Sciences**, Vol. 14(2), pp. 429-438 (1 February 2015).
76. **Invited Topical Review,** A. Santos, M.J. Deen and L. F. Marsal, "*Conventional and Low-cost Fabrication Technologies for Nanostructures: State-of-the-art and Potential*," **Nanotechnology**, Vol. 26(4), #042001, 20 pages (20 Jan 2015).
77. T. Guo, Y. Wei, C. Xu, B. R. Watts, Z. Zhang, Q. Fang, H. Zhang, P.R. Selvaganapathy and M.J. Deen, "*Counting of Escherichia Coli by a Micro-Flow Cytometer Based on a Photonic-Microfluidic Integrated Device*," **Electrophoresis**, Vol. 36(2), pp. 298-304 (January 2015).
78. H. Wang, N. Agoulmine, M.J. Deen and J Zhao, "*A Utility Maximization Approach for Information Communication Tradeoff in Wireless Body Area Networks*," **Personal and Ubiquitous Computing**, Vol. 18(8), pp. 1963-1976 (December 2014).
79. D.P. Palubiak and M.J. Deen, "*CMOS SPADs*: *Design Issues and Research Challenges for Detectors, Circuits, and Arrays*", **IEEE Journal of Selected Topics in Quantum Electronics**, Vol. 20(6), 18 pages (Nov/Dec 2014).
80. Y. Qin, M.R. Howlader, M.J. Deen, Y. Haddara, P.R. Selvaganapathy, "*Polymer Integration for Packaging of Implantable Sensors*", **Sensors & Actuators B: Chemical**, Vol. 202, pp. 758-778 (31 October 2014).
81. L. Hsu, P.R. Selvaganapathy, J. Brash, Q. Fang, C-Q. Xu, M.J. Deen, and H. Chen, "*Development of a Low-Cost Hemin-Based Dissolved Oxygen Sensor With Anti-Biofouling Coating for Water Monitoring*," **IEEE Sensors Journal**, Vol. 14(10), pp. 3400–3407 (October 2014)
82. P. López Varo, J.A. Jiménez Tejada, J.A. López Villanueva, and M.J. Deen, "*Electrical Characterization of Controlled and Unintentional Modified Metal–organic Contacts*", **Organic Electronics**, Vol. 15(10), pp. 2536-2545 (Oct. 2014)
83. P. López Varo, J.A. Jiminez Tejada, J.A. López Villanueva and M.J. Deen, "*Space-charge and Injection Limited Current in Organic Diodes: A Unified Model*" **Organic Electronics**, Vol. 15(10), pp. 2526-2535 (October 2014).
84. Z. Li, M.J. Deen, S. Kumar and P.R. Selvaganapathy, "*Raman Spectroscopy for In-Line Water Quality Monitoring—Instrumentation and Potential*," **Sensors**, Vol. 14 (9), 17275-17303 (September 2014).
85. M. R. Dadkhah, M. Jamal Deen, and Shahram Shirani, "*Block-Based Compressive Sensing in a CMOS Image Sensor*," **IEEE Sensors Journal**, Vol. 13(8), pp. 2897-2909 (August 2014).
86. Z. Li and M.J. Deen, "*Towards a Portable Raman Spectrometer Using a Concave Grating and a Time-gated CMOS SPAD*," **Optics Express**, Vol. 22(15), pp. 18736-18747 (25 July 2014).
87. X. Xie, D. Sarkar, W. Liu, J. Kang, O. Marinov, M.J. Deen and K. Banerjee, "*Low-Frequency Noise in Bilayer MoS_2 Transistor*," **ACS Nano**, Vol. 8(6), pp 5633–5640 (7 April 2014).
88. A. Ul Alam, M.M.R. Howlader and M.J. Deen, "*Effects of Oxygen Plasma and Humidity on Surface Roughness, Water Contact Angle and Hardness of Silicon, Silicon Dioxide and Glass*," **Journal of Micromechanics and Microengineering**, Vol. 24(3), #035010, 14 journal pages, (2014).
89. B. Jin, T.H. Thu, E. Baek, S.H. Sakong, J. Xiao, T. Mondal, M.J. Deen, "*Walking-Age Analyzer for Healthcare Applications*," **IEEE Journal of Biomedical and Health Informatics**, Vol. 18(3), pp. 1034-1042 (May 2014).
90. O. Marinov, M.J. Deen, C. Feng and Y. Wu, "*Precise Parameter Extraction Technique for Organic Thin-Film Transistors Operating in the Linear Regime*", **Journal of Applied Physics**, Vol. 115(3), # 034506, 10 journal pages (January 2014).
91. A.U. Alam, M.M.R. Howlader and M.J. Deen, "*Oxygen Plasma and Humidity Dependent Surface Analysis of Silicon, Silicon Dioxide and Glass for Direct Wafer Bonding*", **ECS Journal of Solid State Science and Technology**, Vol. 2(12), pp. P515-P523 (2013).
92. K. M. Awawdeh, J.A. Jiménez Tejada, P. López Varo, J.A. López Villanueva, F. M. Gómez Campos, and M.J. Deen, "*Characterization of Organic Thin Film Transistors with Hysteresis and Contact Effects*," O**rganic Electronics**, Vol. 14(12), pp. 3286-3296 (December 2013).
93. T. Rim, K. Kim, N. Hong, W. Ko, C-K Baek, S. Jeon, M.J. Deen, M. Meyyappan, Y-H. Jeong and J-S. Lee, "*Investigation of the Electrical Stability of Si-nanowire Biologically Sensitive Field-effect Transistors with Embedded Ag/AgCl Pseudo Reference Electrode*," **RSC Advances**, Vol. 3, Issue 21, pp. 7963-7969 (2013).
94. C. Derry, Y. Wu, S. Zhu and M.J. Deen, "*Composite Semiconductor Material of Carbon Nanotubes and Poly*[*5,5*'-*bis*(*3-dodecyl-2-thienyl*)-*2,2*'-*bithiophene*] *for High-Performance Organic Thin-Film Transistors*", **Journal of Electronic Materials**, DOI: 10.1007/s11664-013-2785-7, 8 pages (Published on-line 12 October 2013)
95. M.M. El-Desouki, S.M. Qasim, M. BenSaleh and M.J. Deen, "*Single-Chip Fully Integrated Direct-Modulation CMOS RF Transmitters for Short-Range Wireless Applications*", **Sensors**, Vol. 13, pp. 9878-9895 (2013).
96. S. Safari, P.R. Selvaganapathy and M.J. Deen, "*Microfluidic Reference Electrode with Free-Diffusion Liquid Junction*", **Journal of the Electrochemical Society**, Vol. 160(1), pp. B177-B183 (2013).

97. T. Wang, B. Yu, Y. Liu, and M.J. Deen, "*Investigation of Electrically Induced Migration of Copper on Graphene Surfaces: Theory and Experiments*," **Applied Physics Letters,** Vol. 103(7), #07310, 5 pages (12 August 2013).
98. S.R. Dong, X.L. Bian, H. Jin, N.N. Hu, J. Zhou, H. Wong and M.J. Deen, "*Electrically Tunable Film Bulk Acoustic Resonator Based on Au/ZnO/Al Structure*," **Applied Physics Letters,** Vol. 103(6), #062904, 5 pages (5 August 2013).
99. H. Abd Elhamid, Y. Ismail and M.J. Deen, "*A Computational Study of Nonparabolic Conduction Band Effect on Quantum Wire Transport* (e.g. *GaN*)", **Optical and Quantum Electronics**, Vol. 25(8), pp. 885-899 (9August 2013).
100. M.M.R. Howlader, F.F. Zhang and M.J. Deen, "*Formation of Gallium Arsenide Nanostructures in Pyrex Glass*," **Nanotechnology**, Vol. 24(31), #315301, 8 pages (9 August 2013).
101. F. S. Campos, N. Faramarzpour, O. Marinov, M.J. Deen, J. W. Swart, "*Photodetection with Gate-Controlled Lateral BJTs from Standard CMOS Technology*", **IEEE Sensors Journal**, Vol. 13(5), pp. 1554-1563 (May 2013)
102. O. Marinov and M.J. Deen, "*Quasistatic Compact Modeling of Organic Thin-Film Transistors*", **Organic Electronics**, Vol. 14(1), pp. 295-311 (January 2013).
103. N. R. Das, M. W. Shinwari, M.J. Deen and Jeong-Soo Lee, "*Electron States in a Silicon Nanowire in the Presence of Surface Potential and Field*," **Nanotechnology**, Vol. 23, No. 41, 15 pages, # 415201 (19 October 2012).
104. Z. Li, M.J. Deen, Q. Fang and P.R. Selvaganapathy, "*Design of a Flat Field Concave Grating Based Micro-Raman Spectrometer for Environmental Applications*," **Applied Optics**, Vol. 51, No. 28, pp. 6855-6863 (1 October 2012).
105. M.W. Shinwari and M.J. Deen, "*Important Physical Processes to Consider when Modelling the Response of DNA Biotransistors*," **Sensors & Actuators: B. Chemical,** Vols. 171-172, pp. 463-368 (August-September 2012).
106. P. López Varo, J.A. Jiménez Tejada, J.A. López Villanueva, J. E. Carceller and M.J. Deen, "*Modeling the Transition from Ohmic to Space-charge Limited Current in Organic Semiconductors*," **Organic Electronics**, Vol. 13(9), pp 1700-1709 (September 2012).
107. C-H Park, M-D Ko, K-H Kim, R-H Baek, C-W Sohn, C.K. Baek, S. Park, M.J. Deen, Y-H. Jeong, J-S Lee, "*Electrical characteristics of 20-nm junctionless Si nanowire transistors*", **Solid-State Electronics**, Vol. 73, pp. 7-10 (July 2012).
108. J.A. Jiménez Tejada, A. Luque Rodríguez, A. Godoy, S. Rodríguez-Bolívar, J.A. López Villanueva, O. Marinov, and M.J. Deen, "*Effects of Gate Oxide and Junction Non-Uniformity on the DC and Low-Frequency Noise Performance of Four-Gate Transistors*," **IEEE Transactions on Electron Devices**, Vol. 59(2), pp. 459-467 (February 2012).
109. T. Wang, B. Yu, Y. Liu, Q. Guo, K. Sheng, and M.J. Deen, "*Fabrication of Vertically-Stacked Single-Crystalline Si Nanowires Using Self-Limiting Oxidation*," **Nanotechnology**, Vol. 23(1), # 015307, 5 journal pages (13 January 2012).
110. E. Nemati, M.J. Deen and T. Mondal, "*A Wireless Wearable ECG Sensor for Long-Term Applications*," **IEEE Communications Magazine** (**Special Issue on Communications in Ubiquitous Healthcare**), Vol. 50(1), pp. 36-43 (January 2012).
111. M. W. Shinwari, M. F. Shinwari, M.J. Deen and P.R. Selvaganapathy, "*The Effect of DNA Probe Distribution on the Reliability of Label-free Biosensors*," **Sensors & Actuators: B. Chemical**, Vol. 160, Issue 1, pp. 441-447 (15 December 2011).
112. S. Kim, T. Rim, K. Kim, U. Lee, E. Baek, H. Lee, C-K Baek, M. Meyyappan, M.J. Deen and J-S Lee, "*Silicon nanowire ion sensitive field effect transistor with integrated Ag/AgCl electrode: pH sensing and noise characteristics*," **Analyst**, Vol. 136, Issue 23, pp. 5012-5016 (7 December 2011).
113. N. Agoulmine, M.J. Deen, J-S. Lee and M. Meyyappan, "*U-Health Smart Home*," **IEEE Nanotechnology Magazine**, Vol. 5, Issue 3, pp. 6-11 (September 2011).
114. D. Palubiak, M.M. El-Desouki, O. Marinov, M.J. Deen and Q. Fang, "*High-Speed, Single-Photon Avalanche-Photodiode Imager for Biomedical Applications*," **IEEE Sensors Journal**, Vol. 11(10), pp. 2401-2412 (October 2011).
115. D. Palubiak, M.M. El-Desouki, O. Marinov, M.J. Deen and Q. Fang, "*High-Speed, Single-Photon Avalanche-Photodiode Imager for Biomedical Applications*," **IEEE Sensors Journal**, Vol. 11(10), pp. 2401-2412 (October 2011).
116. M.M. El-Desouki, M.J. Deen Y.M. Haddara and O. Marinov, "*A Fully Integrated CMOS Power Amplifier Using Superharmonic Injection-Locking for Short-Range Applications*," **IEEE Sensors Journal**, Vol. 11(9) pp. 2149-2158 (September 2011).
117. S. Safari, P.R. Selvaganapathy, A. Derardja and M.J. Deen, "*Electrochemical Growth of High-aspect Ratio Nanostructured Silver Chloride on Silver and its Application to Miniaturized Reference Electrodes*," **Nanotechnology**, Vol. 22(31), #315601, 8 journal pages (5 August 2011).
118. R.C.C. Wang, M.J. Deen, D. Armstrong, and Q. Fang, "*Design and Simulation of a Catadioptric Endoscopic Objective with Dual Forward and Side Views*", **Journal of Biomedical Optics**, Vol. 16(6), #066015, 15 pages (June 2011).
119. O. Marinov, M.J. Deen, J.A. Jimenez Tejada and B. Iniguez, "*Impact of the Fringing Capacitance at the Back of Thin-Film Transistors*," **Organic Electronics**, Vol. 12(6), pp. 936 - 949 (June 2011).
120. M.W. Shinwari and M.J. Deen, "*Impedance Modelling of FET-based Biosensors*," **Journal of the Electrochemical Society**, Vol. 158(6), pp. J189-J194 (June 2011).

121. M.M. El-Desouki, O. Marinov, M.J. Deen and Q. Fang, "*CMOS Active-Pixel Sensor with In-Situ Memory for Ultrahigh-Speed Imaging*," **IEEE Sensors Journal**, Vol. 11(6), pp. 1375 - 1379 (June 2011).
122. J.A. Jiménez Tejada, K. M. Awawdeh, J.A. López Villanueva, J. E. Carceller, M.J. Deen, N. B. Chaure, Tamara Basova, and A. K. Ray, "*Contact Effects in Compact Models of Organic Thin Film Transistors: Application to Zinc Phthalocyanine-based Transistors*," **Organic Electronics**, Vol. 12(5), pp. 832 - 842 (May 2011).
123. M.M. El-Desouki, D. Palubiak, M.J. Deen, Q. Fang, and O. Marinov, "*A Novel, High Dynamic Range, High Speed and High Sensitivity CMOS Imager Using Time-Domain Single Photon Counting and Avalanche Photodiodes*," **IEEE Sensors Journal**, Vol. 11(4), pp. 1078 – 1083 (April 2011).
124. M.M.R. Howlader, F. Zhang, M.J. Deen, T. Suga and A. Yamauchi, "*Surface Activated Bonding of Copper Through Silicon Vias and Gold Stud Bumps at Room Temperature*," **Journal of Vacuum Science and Technology A**, Vol. A29(2), pp. # 021007-1 - 021007-7 (March/April 2011).
125. L. Reséndiz, M. Estrada, A. Cerdeira, B. Iñiguez and M.J. Deen, "*Effect of Active Layer Thickness on the Electrical Characteristics of Polymer Thin Film Transistors*," **Organic Electronics**, Vol. 11(12), pp. 1920-1927 (December 2010)
126. **Invited Topical Review,** A. Chung, M.J. Deen, J-S. Lee and M. Meyyappan, "*Nanoscale Memory Devices*," **Nanotechnology**, Vol 21(41), #412001, 22 journal pages (15 October 2010).
127. M W Shinwari, M J Deen, and P R Selvaganapathy, "*Finite-element Modelling of Biotransistors*," **Nanoscale Research Letters - Special Issue**, Vol. 5, No. 3, pp. 494-500 (March 2010).
128. M.A. Naser, M.J. Deen and D.A. Thompson, *Photocurrent Modeling and Detectivity Optimization in a Resonant Tunneling Quantum Dot Infrared Photodetector*, **IEEE Journal of Quantum Electronics**, Vol. 46(6), pp. 849-859 (June 2010).
129. **Invited Review Paper,** M.W. Shinwari, D. Zhitomirsky, I.A. Deen, P.R. Selvaganapathy, M.J. Deen, and D. Landheer, *Microfabricated Reference Electrodes and their Biosensing Applications*, **Sensors – Special Issue on ISFET Sensors**, Vol. 10(3), pp. 1679-1715 (March 2010).
130. D. Keogh, Z. Chen, R.A. Hughes, A. Dabkowski, O. Marinov, C. Maunders, L. Gunawan, M.J. Deen, J.S. Preston and G.A. Botton, (*100*) $MgAl_2O_4$ *as a Lattice-matched Substrate for the Epitaxial Thin Film Deposition of the Relaxor Ferroelectric PMN-PT*, **Applied Physics A: Materials Science & Processing**, Vol. 98(1), pp. 187-194 (Jan. 2010).
131. O. Marinov, M.J. Deen, U. Zschieschang and H. Klauk, *Organic Thin-Film Transistors: Part* I *–Compact DC Modeling*, **IEEE Transactions on Electron Devices,** Vol. 56(12), pp**.** 2952-2961 (December 2009).
132. M.J. Deen, O. Marinov, U. Zschieschang and H. Klauk, *Organic Thin-Film Transistors: Part* II *— Parameter Extraction*, **IEEE Transactions on Electron Devices,** Vol. 56(12), pp**.** 2962-2968 (December 2009).
133. P. Lara Bullejos, J.A. Jiménez Tejada, F.M. Gómez-Campos, M.J. Deen and O. Marinov, *Evaluation of the Charge Density in the Contact Region of Organic Thin Film Transistors*, **Journal of Applied Physics**, Vol. 106(9), #094503, 4 pages (1 November 2009).
134. S. Ghanad-Tavakoli, M.A. Naser, D.A. Thompson and M.J. Deen, *Experimental Characterization and Theoretical Modeling of the Strain Effect on the Evolution and Inter-band Transitions of InAs Quantum Dots Grown on* $In_xGa_{1-x}As$ $(0.0 \leq x \leq 0.3)$ *Metamorphic Pseudosubstrates on GaAs Wafers*, **Journal of Applied Physics**, Vol. 106(6), #063533, 8 pages (15 September 2009).
135. O. Marinov, M.J. Deen and W.R. Datars, *Compact Modeling of Charge Carrier Mobility in Organic Thin-Film Transistors*, **Journal of Applied Physics**, Vol. 106(6), #064501 13 pages, (15 September 2009).
136. M.M. El-Desouki, S.M. Abdelsayed, M.J. Deen, N.K. Nikolova and Y.M. Haddara, *The Impact of On-Chip Interconnections on CMOS RF Integrated Circuits*, **IEEE Transactions on Electron Devices (Special Issue),** Vol. 56(9), pp. 1882-1890 (September 2009).
137. O. Marinov and M.J. Deen, *Low-Frequency Noise Partition of Asymmetric MOS Transistors Operating in Linear Regime*, **IEEE Electron Device Letters**, Vol. 30(8), pp. 840-842 (August 2009).
138. P. Lara Bullejos, J.A. Jiménez Tejada, S. Rodríguez-Bolívar, M.J. Deen and O. Marinov, *Model for the Injection of Charge Through the Contacts of Organic Transistors*, **Journal of Applied Physics**, Vol. 105(8), #084516, 8 pages (15 April 2009).
139. Y. Yuan, J-Y. Hwang, M. Krishnamoorthy, K. Ye, Y. Zhang, J. Ning, R.C. Wang, M.J. Deen and Q. Fang, *High-throughput Acousto-optic-tunable-filter-based Time-resolved Fluorescence Spectrometer for Optical Biopsy*, **Optics Letters**, Vol. 34(7), pp. 1132-1134 (1 April 2009).
140. F.M. Mohammedy, M.J. Deen and D.A. Thompson, *Extraction of Electron and Hole Ionization Coefficients from Metamorphically Grown InGaSb Diodes*, **IEEE Trans. on Electron Devices,** Vol. 56(3), pp. 523-528 (March 2009).
141. **Invited Review Paper,** M. El-Desouki, M.J. Deen, Q. Fang, L. Liu, F. Tse and D. Armstrong, *CMOS Image Sensors for High Speed Applications*, **Sensors**, Vol. 9(1), pp. 430-444 (January 2009).
142. F. Cheng, P. Imin, S. Lazar, G. A. Botton, G. de Silveira, O. Marinov, J. Deen and A. Adronov, *Supramolecular*

Functionalization of Single-Walled Carbon Nanotubes (*SWNTs*) *with Conjugated Polyelectrolytes and their Patterning on Surfaces*, **Macromolecules**, Vol. 40(24), pp 9869–9874 (23 December 2008).

143. F.S. Campos, O. Marinov, N. Faramarzpour, F. Saffih, M.J. Deen, J.W. Swart, *A Multisampling Time-Domain CMOS Imager with Synchronous Readout Circuit*, **Analog Integrated Circuits and Signal Processing**, Vol. 57(1-2), pp. 151-159 (November 2008).
144. M.A. Swillam, M.H. Bakr, X. Li and M.J. Deen, *Efficient Sensitivity Analysis of the Time Independent Schrödinger Equation with Application to Quantum Lasers*, **Optics Communications**, Vol. 281, pp. 4459-4463 (2008).
145. M. A. Naser, M.J. Deen and D.A. Thompson, *Theoretical Modeling of Dark Current in Quantum Dot Infrared Photodetectors Using Non-equilibrium Green's Functions*, **Journal of Applied Physics**, Vol. 104, #014511, 11 pages (1 July 2008).
146. M.J. Deen, M.H. Kazemeini and S. Holdcroft, *Contact Effects and Extraction of Intrinsic Parameters in Poly(3-alkylthiophene) Thin-Film Field-Effect Transistors*, **Journal of Applied Physics**, Vol. 103, Issue 12, #124509, 7 pages (15 June 2008).
147. J. Raoult, F. Pascal, C. Delseny, M. Marin and M.J. Deen, *Impact of Carbon Concentration on 1/f Noise and Random Telegraph Signal Noise in SiGe:C Heterojunction Bipolar Transistors*, **Journal of Applied Physics**, Vol. 103, Issue 11, #114508, 10 pages (1 June 2008).
148. H. Abd Elhamid and M.J. Deen, *Continuous Current and Surface Potential Models for Undoped and Lightly Doped Double-Gate Metal-Oxide-Semiconductor Field-Effect Transistors*, **Journal of Applied Physics**, Vol. 103, Issue 11, #114501, 12 pages (1 June 2008).
149. N. Faramarzpour, M.M. El-Desouki, M.J. Deen, Q. Fang, S. Shirani and L.W.C. Liu, *CMOS Imaging for Biomedical Applications*, **IEEE Potentials**, Vol. 27(3), pp. 31-36 (May/June 2008).
150. F.M. Mohammedy, O. Hulko, B.J. Robinson, D.A. Thompson and M.J. Deen, *Effect of Growth Temperature on InGaSb Metamorphic Layers and the Fabrication of InGaSb PIN Diodes*, **Journal of Vacuum Science and Technology B**, Vol. 26(2), pp. 636-642 (March/April 2008).
151. P Lara Bullejos, JA Jiménez Tejada, MJ Deen, O Marinov and WR Datars, *Unified Model for the Injection and Transport of Charge in Organic Diodes*, **Jour of App Physics**, Vol. 103, Issue 6, #064504, 12 pages (15 Mar. 2008).
152. N. Faramarzpour, M.J. Deen, S. Shirani and Q. Fang, *Fully Integrated Single Photon Avalanche Diode Detector in Standard CMOS* 0.18μ*m Technology*, **IEEE Transactions on Electron Devices,** Vol. 55(3), pp. 760-767 (March 2008).
153. M. Kfouri, O. Marinov, P. Quevedo, N. Faramarzpour, S. Shirani, L.W-C. Liu, Q. Fang and M.J. Deen, *Towards a Miniaturized Wireless Fluorescence-Based Diagnostic Imaging System*, **IEEE Journal of Selected Topics in Quantum Electronics (Special Issue on Biophotonics)**, Vol. 14(10) pp. 226-234 (January/February 2008).
154. N. Faramarzpour, M.J. Deen, S. Shirani, Q. Fang, L.W.C. Liu, F. Campos and J.W. Swart, *CMOS Based Active Pixel for Low-Light-Level Detection: Analysis and Measurements*, **IEEE Transactions on Electron Devices,** Vol. 54(12), pp. 3229-3237 (December 2007).
155. M. A. Naser, M.J. Deen and D.A. Thompson, *Spectral Function and Responsivity of Resonant Tunneling and Superlattice Quantum Dot Infrared Photodetectors Using Green's Function*, **Journal of Applied Physics**, Vol. 102(8), # 083108 ,12 pages (15 October 2007).
156. H.M. Jafari, M.J. Deen, S. Hranilovic and N. K. Nikolova, *Co-polarized and Cross-polarized Antenna Arrays for Breast Cancer Detection*, **IET Microwaves, Antennas and Propagation**, Vol. 1(5), pp. 1055-1058 (October 2007).
157. Rizwan Murji and M. Jamal Deen, *Design Issues of a Low Power Wideband Frequency Doubler Implementation in* 0.18 μm *CMOS*, **Analog Integrated Circuits and Signal Processing** Vol. 53(1), pp. 53-62 (October 2007).
158. S. Asgaran and M.J. Deen, *A Flicker Noise Cancellation Technique for Low-Voltage Direct-Conversion Mixers*, **Electronics Letters**, Vol. 43(19), pp. 1020-1021 (13 September 2007).
159. D. Landheer, W.R. McKinnon, G. Aers, W. Jiang, M.J. Deen and M.W. Shinwari, *Calculation of the Response of Field-Effect Transistors to Charged Biological Molecules*, **IEEE Sensors Journal**, Vol. 7(9), pp. 1233-1242 (Sep. 2007).
160. S. Asgaran, M.J. Deen, C.H. Chen, G. A. Rezvani, Y. Kamali and Y. Kiyota, *Analytical Extraction of MOSFET's High Frequency Noise Parameters from NF_{50} Measurements and its Application in RFIC Design*, **IEEE Journal of Solid-State Circuits**, Vol. 42(5) pp. 1034-1043 (May 2007).
161. H.M. Jafari, M.J. Deen, S. Hranilovic and N.K. Nikolova, *A Study of Ultra-Wideband Antennas for Near-Field Imaging*, **IEEE Transactions on Antennas and Propagation**, Vol. 55(4), pp. 1184-1188 (April 2007).
162. O Marinov, MJ Deen and JA Jiménez Tejada, *Theory and Physical Explanation of the Microplasma Fluctuation and Noise in Avalanche Breakdown of the Silicon Diodes*, **Jour of App Phys**, vol. 101, #064515, 21 pages (15 Mar 2007).
163. S. Asgaran, M.J. Deen, and C-H. Chen, *Design of the Input Matching Network of RF CMOS LNAs for Low-Power Operation*, **IEEE Transactions on Circuits and Systems I**, Vol. 54(3), pp. 544-554 (March 2007).

164. F. Mohammedy, Z.L. Peng, D. A. Thompson and M.J. Deen, *Reactive Ion Etching of GaSb with an Electron Cyclotron Resonance Source using Methane/Hydrogen chemistry in an Argon Plasma*, **Journal of the Electrochemical Society**, Vol. 154(2), pp. H127-H130 (2007).
165. M. A. Naser, M.J. Deen and D.A. Thompson, *Spectral Function of InAs/InGaAs Quantum Dots in a Well Detector Using Green's Function*, **Journal of Applied Physics**, Vol. 100, #093102, 6 pages (1 November 2006).
166. J.A. Jiménez Tejada, P. Lara Bullejos, J.A. López Villanueva, F. M. Gómez-Campos, S. Rodríguez-Bolívar and M.J. Deen, *Determination of the Concentration of Recombination Centers in Thin Asymmetrical p-n Junctions from Capacitance Transient Spectroscopy*, **Applied Physics Letters**, Vol. 89, #112107, 3 pages (September 2006).
167. M.J. Deen, M.W. Shinwari, J.C. Ranuárez and D. Landheer, *Noise Considerations in Field-Effect Biosensors*, **Journal of Applied Physics,** Vol. 100, #074703, 8 pages (1 October 2006).
168. N. Faramarzpour, M.J. Deen and S. Shirani, *An Approach to Improve the Signal-to-Noise Ratio of Active Pixel Sensor for Low-Light-Level Applications*, **IEEE Transactions on Electron Devices,** Vol. 53(9), pp. 2384-2391 (Sep. 2006).
169. O. Marinov, M.J. Deen and B. Iniguez, *Performance of Organic Thin-Film Transistors*, **Journal of Vacuum Science and Technology B**, Vol. B24(4), pp. 1728-1733. (July/August 2006).
170. N. Faramarzpour, M.J. Deen, and S. Shirani, *Signal and Noise Modelling and Analysis of CMOS Active Pixel Sensors*, **Jour of Vacuum Science & Tech A (Special Issue for CSTC 2005)**, Vol. 24(3), pp. 879–882 (May/June 2006).
171. Y. Ardeshirpour, M.J. Deen and S. Shirani, *Evaluation of CMOS Based Photodetectors for Low-level Light Detection*, **Journal of Vacuum Science and Tech. A (Special Issue - CSTC 2005)**, Vol A24(3), pp. 860–865 (May/June 2006).
172. S.M. Abdelsayed, M.J. Deen and N. K. Nikolova, *Parasitic-aware Layout Design of a Low-power Fully Integrated Complementary Metal-Oxide Semiconductor Power Amplifier*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 2005)**, Vol A24(3), pp. 835–840 (May/June 2006).
173. J.C. Ranuárez, M.J. Deen and C.H. Chen, *Temperature Effects in CMOS Microwave Distributed Amplifiers*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 2005)**, Vol A24(3), pp. 831–834, (May 2006).
174. M.J. Deen, S. Naseh, O. Marinov, M.H. Kazemeini, *Very Low-Voltage Operation Capability of CMOS Ring Oscillators and Logic Gates*, **Journal Vacuum Science and Tech. A (Special Issue)**, Vol. 24(3), pp. 763–769 (May/June 2006).
175. H. M. Jafari, W. Liu, S. Hranilovic and M.J. Deen, *Ultra-Wideband* (*UWB*) *Radar Imaging System for Biomedical Applications*, **Journal of Vacuum Science and Tech. A (Special Issue)**, Vol A24(3), pp. 752–757, (May/June 2006).
176. O. Marinov and M.J. Deen, B. Iniguez and B. Ong, *Charge Localization in Polymeric Metal-Oxide-Semiconductor Capacitors*, **Journal of Vacuum Science and Technology A (Special Issue - CSTC 2005)**, Vol A24(3), pp. 649–653 (May/June 2006).
177. F.M. Mohammedy, O. Hulko, B.J. Robinson, D.A. Thompson, M.J. Deen, J.G. Simmons, *Growth and Characterization of GaAsSb Metamorphic Samples on an InP-Substrate*, **Journal of Vacuum Science and Technology A (Special Issue for Canadian Semiconductor Technology Conference - CSTC 2005)**, Vol A24(3), pp. 587–590 (May/June 2006).
178. S. Asgaran, M.J. Deen and C.-H. Chen, *A 4 mW Monolithic CMOS LNA at 5.7 GHz with the Gate Resistance Used for Input Matching*, **IEEE Microwave and Wireless Components Letters**, Vol. 16(4), pp. 188-190 (April 2006).
179. B. Brown, D. Hess, V. Desai and M.J. Deen, *Dielectric Science and Technology*, **Interface – An Electrochemical Society Publication**, Vol. 15(1), pp. 28-31 (Spring 2006).
180. S. Soliveres, A. Hoffmann, F. Pascal, C. Delseny, M.S. Kabir, O. Nur, A. Salasse, M. Wilander, M.J. Deen, *Excess Low Frequency Noise in Single-wall Carbon Nanotube*, **Fluctuations and Noise Letters,** Vol. 6(1), pp. L45-L55 (2006).
181. G.A. Kouzaev, M.J. Deen, N.K. Nikolova and A. H. Rahal, *Cavity Models of Planar Components Grounded by Via-holes and their Experimental Verification*, **IEEE Transactions on Microwave Theory and Techniques,** Vol. 54(3), pp. 1033-1042 (March 2006).
182. N. Zhao, O. Marinov, G.A. Botton, M.J. Deen, B.S. Ong, Y. Wu, P. Liu, *Characterization of MOS Structures Based on Poly* (*3,3'''-dialkyl-quaterthiophene*), **IEEE Trans. on Electron Devices,** Vol. 52(10), pp. 2150-2156 (Oct. 2005).
183. S. Naseh, M.J. Deen and C.-H. Chen, *Effects of Hot-Carrier Stress on the Performance of CMOS Low Noise Amplifiers*, **IEEE Transactions on Device and Materials Reliability**, Vol. 5(3), pp. 501-508 (September 2005).
184. D. Landheer, G. Aers, W.R. McKinnon, M.J. Deen and J.C. Ranuarez, *Model for the Field-Effect from Layers of Biological Macromolecules on the Gates of Metal-Oxide-Semiconductor Transistors*, **Journal of Applied Physics**, Vol. 98, # 044701,15 pages (15 August 2005).
185. J.C. Ranuárez, M.J. Deen and C-H. Chen, *Modeling the Partition of Noise from the Gate Tunneling Current in MOSFETs*, **IEEE Electron Device Letters**, Vol. 26(8), pp. 550-552 (August 2005).
186. R. Murji and M.J. Deen, *Accurate Modelling and Parameter Extraction for Meander- Line N-well Resistors*, **IEEE Transactions on Electron Devices (Special Issue on Integrated Circuit Technologies for RF Circuit Applications)**, Vol. 52(7), pp. 1364-1369 (July 2005).

187. **IET Circuits, Devices and Systems Premium Award,** O. Marinov, M. Jamal Deen, Benjamin Iniguez, *Charge Transport in Organic and Polymer Thin-Film Transistors: Recent Issues*, **IEE Proceedings - Circuits, Devices and Systems,** Vol. 153(3), pp. 189-209 (June 2005).
188. N.R. Das and M.J. Deen, A *Model for the Performance Analysis and Design of Waveguide PIN Photodetectors*, **IEEE Transactions on Electron Devices**, Volume 52(4), pp. 465-472 (April 2005).
189. G.A. Kouzaev, M.J. Deen, N.K. Nikolova and A. Rahal, *An Approximate Parallel-plate Waveguide Model of a Lossy Multilayered Microstrip Line*, **Microwave and Optical Technology Letters**, Vol. 45(1), pp. 23-26 (5 April 2005).
190. Y.M. El-Batawy and M.J. Deen, *Analysis and Circuit Modeling of Waveguide-Separated Absorption Charge Multiplication-Avalanche Photodetector*, **IEEE Transactions on Electron Devices**, Vol. 52(3), pp. 335-344 (March 2005).
191. Y.M. El-Batawy and M.J. Deen, *Effects of the Parasitics on the Time Response of Resonant Cavity Enhanced Photodetectors* (*RCE-PDs*), **IEEE Transactions on Electron Devices**, Vol. 52(3), pp. 325-334 (March 2005).
192. G.A. Kouzaev, M.J. Deen and N.K. Nikolova, *A Parallel-Plate Waveguide Model of Lossy Microstrip Lines*, **IEEE Microwave and Wireless Components Letters**, Vol. 15(1), pp. 27-29 (January 2005).
193. Y.M. El-Batawy and M.J. Deen, *Analysis, Circuit Modeling and Optimization of Mushroom Waveguide Photodetector* (*Mushroom-WGPD*), **IEEE Journal of Lightwave Technology**, Vol. 23(1), pp. 423-431 (January 2005).
194. S. Asgaran, M.J. Deen and C-H. Chen, *Analytical Modeling of MOSFET's Channel Noise and Noise Parameters*, **IEEE Transactions on Electron Devices,** Vol. 51(12), pp. 2109-2114 (December 2004).
195. M.J. Deen, M.H. Kazemeini, Y.M. Haddara, J. Yu, G. Vamvounis, S. Holdcroft and W. Woods, *Electrical Characterization of Polymer-Based Field-Effect Transistors Fabricated by Spin-Coating Poly*(*3-alkylthiophene*)*s*, **IEEE Transactions on Electron Devices,** Vol. 50, pp. 1892-1901 (November 2004).
196. S. Samavi, S. Shirani, N. Karimi, M.J. Deen, *A Pipeline Architecture for Processing of DNA Microarrays Images*, **Journal of VLSI Signal Processing Systems (Special Issue on Genomic Signal Processing**), Vol. 38(3), pp. 287-297 (November 2004).
197. G.A. Kouzaev, M.J. Deen, N.K. Nikolova and Ali H. Rahal, *Influence of Eccentricity on the Frequency Limitations of Circular-Pad Via-Holes*, **IEEE Microwave and Wireless Components Letters**, Vol. 14(6), pp. 265-267 (June 2004).
198. Y.M. El-Batawy and M.J. Deen, *Modeling of Mushroom Waveguide Photodetector*, **Journal of Vacuum Science and Technology A**, Vol. A22(3), pp. 811-815 (May/June 2004).
199. O. Marinov, M.J. Deen, J. Yu, G. Vamvounis, S. Holdcroft, W. Woods, *Variable Current Transport in Polymer Thin Film Transistors*, **Journal of Vacuum Science and Technology A**, Vol. A22(3), pp. 755-759 (May/June 2004).
200. M. Marin, M.J. Deen, M. de Murcia, P. Llinares, J-C. Vildeuil, *A New Method for the Channel Length Extraction in MOSFETs with Sub-2nm Gate Oxide*, **IEEE Electron Device Letters**, Vol. 25(4), pp. 202-204 (April 2004).
201. N. R. Das and M. Jamal Deen, On the Performance *Analysis and Design of Integrated Front-End PIN/HBT Photoreceiver*, **IEEE Journal of Quantum Electronics**, Vol. 40(1), pp. 78-91 (January 2004).
202. K. Bhattacharyya and M.J. Deen, *Microwave CMOS Traveling Wave Amplifiers: Performance and Temperature Effects*, **IEEE Microwave and Wireless Components Letters**, Vol. 14(1), pp. 16-18 (January 2004).
203. G.A. Kouzaev, N.K. Nikolova, and M.J. Deen, *Circular-Pad Via Model Based on Cavity Field Analysis*, **IEEE Microwave and Wireless Components Letters**, Vol. 13(11), pp. 481-483 (November 2003).
204. Y.M. El-Batawy, M.J. Deen and N.R. Das, *Analysis, Optimization and SPICE Modeling of Resonant Cavity Enhanced PIN Photodetector*, **IEEE Journal of Lightwave Technology**, Vol. 21(9), pp. 2031-2043 (Sep. 2003).
205. S. Naseh, M.J. Deen and O. Marinov, *Effects of Hot-Carrier Stress on the Performance of the LC-Tank CMOS Oscillators*, **IEEE Transactions on Electron Devices,** Vol. 50(5), pp. 1334-1339 (May 2003).
206. Y.M. El-Batawy and M.J. Deen, *Modeling and Optimization of Resonant Cavity Enhanced-Separated Absorption Graded Charge Multiplication-Avalanche Photodetector* (*RCE-SAGCM-APD*), **IEEE Transactions on Electron Devices,** Vol. 50(3), pp. 790-801 (March 2003).
207. N.R. Das and M.J. Deen, *A New Model for Avalanche Build-up of Carriers in a SAGCM Avalanche Photodiode*, **IEEE Transactions on Electron Devices,** Vol. 49(12), pp. 2362 -2366 (December 2002).
208. N.R. Das and M.J. Deen, *On the Frequency Response of a Resonant-Cavity-Enhanced Separate Absorption, Grading, Charge and Multiplication Avalanche Photodiode*, **Jour of App Physics,** Vol. 92(12), pp. 7133-7145 (15 Dec. 2002).
209. C.H. Chen and M.J. Deen, *Channel Noise Modeling of Deep Sub-Micron MOSFETs*, **IEEE Transactions on Electron Devices,** Vol. 49(8), pp. 1484-1487 (August 2002).
210. O. Marinov, M.J. Deen, V. Loukanov and V. Velikov, *Low Frequency Noise in Reverse Biased Rectifier Diodes in Avalanche Breakdown Region*, **Journal of Applied Physics**, Vol. 91(11), pp. 9232-9240 (1 June 2002).
211. N.R. Das and M.J. Deen, *Effect of Interface-Trapping on the Frequency Response of a Photodetector*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 2001)**, Vol. A20(3), pp. 1105-1110 (May/June 2002).

212. N.R. Das and M.J. Deen, *On the Optimum Design of the Front-End PIN-HBT OEIC*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 2001)**, Vol. A20(3), pp. 1067-1071(May/June 2002).
213. J. Xu and M.J. Deen, *MOSFET 1/f Noise Model Based on Mobility Fluctuation in Linear Region*, **Electronics Letters**, Vol. 38(9), pp. 429-431 (25 April 2002).
214. M. Sanden, O. Marinov, M. Jamal Deen and M. Ostling, *A New Model for the Low-Frequency Noise and the Noise Level Variation in Polysilicon Emitter Bipolar Junction Transistors*, **IEEE Transactions on Electron Devices,** Vol. 49(3), pp. 514-520 (March 2002).
215. M.J. Deen and O. Marinov, *Effect of Forward and Reverse Substrate Biasing on Low Frequency Noise in Silicon PMOSFETs*, **IEEE Transactions on Electron Devices,** Vol. 49(3), pp. 409-414 (March 2002).
216. Y. Cheng, C.H. Chen, M. Matloubian and M. Jamal Deen, *High Frequency Small-Signal AC and Noise Modeling of MOSFETs for RFICs*, **IEEE Transactions on Electron Devices,** Vol. 49(3), pp. 400-408 (March 2002).
217. R. Murji and M.J. Deen, *A Scalable Meander-Line Resistor Model for Silicon RFICs*, **IEEE Transactions on Electron Devices,** Vol. 49(1), pp. 187-190 (January 2002).
218. O. Marinov, M.J. Deen, V. Loukanov and V. Velikov, *Low Frequency Noise in Reverse-Biased Rectifier Diodes*, **IEEE Transactions on Electron Devices,** Vol. 49(1), pp. 184-187 (January 2002).
219. N.R. Das and M.J. Deen, *Calculating the Photocurrent and Transit-Time Limited Bandwidth of a Heterostructure PIN Photodetector*, **IEEE Journal of Quantum Electronics**, Vol. 37(12), pp. 1574-1587 (December 2001).
220. C.H. Chen, M.J. Deen, Y. Cheng and M. Matloubian, *Extraction of the Induced Gate Noise, Channel Noise and Their Correlation in Sub-micron MOSFETs from RF Noise Measurements*, **IEEE Transactions on Electron Devices,** Vol. 48(12), pp. 2884-2892 (December 2001).
221. M.J. Deen, O. Marinov, J. Yu, S. Holdcroft and W. Woods, *Low Frequency Noise in Polymer Transistors*, **IEEE Transactions on Electron Devices**, Vol. 48(8), pp. 1688-1695 (August 2001).
222. Y. G. Xiao and M.J. Deen, *Frequency Response and Modeling of Resonant-Cavity Separate Absorption, Charge and Multiplication Avalanche Photodiodes*, **IEEE Jour of Lightwave Technology**, Vol. 19(7), pp. 1010-1022 (July 2001).
223. M. Sanden, M. Ostling, O. Marinov and M.J. Deen, *Statistical Simulations of the Low-Frequency Noise and the Noise Level Variation Using a Model Based on Generation-Recombination Centers*, **Fluctuations and Noise Letters,** Vol. 1(2), L51-L60 (June 2001).
224. M. Sanden, O. Marinov, M.J. Deen and M. Ostling, *Modeling the Variation of the Low-Frequency Noise in Poly-silicon Emitter Bipolar Junction Transistors*, **IEEE Electron Device Letters**, Vol. 22(5), pp. 242-244 (May 2001).
225. C.H. Chen and M.J. Deen, *A General Noise and S-Parameter De-Embedding Procedure for On-Wafer High Frequency Noise Measurements of MOSFETs*, **IEEE Transactions on Microwave Theory and Techniques,** Vol. 49(5), pp. 1004-1005 (May 2001).
226. Y.G. Xiao and M.J. Deen, *Temperature Dependent Studies of InP/InGaAs Avalanche Photodiodes Based on Time Domain Modeling*, **IEEE Transactions on Electron Devices**, Vol. 48(4), pp. 661-670 (April 2001).
227. N.R. Das and M.J. Deen, *Low Bias Performance of Avalanche Photodetector - A Time Domain Approach*, **IEEE Journal of Quantum Electronics**, Vol. 37(1), pp. 69-74 (January 2001).
228. X.Y. Chen, M.J. Deen and C.X. Peng, *Low Frequency Noise of High-Speed, High-Performance 1.3 μm Strained Multi-Quantum Well Gain-Coupled Distributed Feedback Lasers*, **Journal of Applied Physics**, Vol. 88(11), pp. 6746-6751 (1 Dec 2000).
229. N.R. Das, P.K. Basu and M.J. Deen, *A New Approach to the Design Optimization of HEMT and HBT for Maximum Gain-Bandwidth of MSM-Based Integrated Photoreceiver and its Noise Performance at 1.55 μm*, **IEEE Transactions on Electron Devices**, Vol. 47(11), pp. 2101-2109 (November 2000).
230. M.J. Deen, S.L. Rumyantsev, D. Landheer and D.-X. Xu, *Low Frequency Noise in Cadmium Selenide Thin-Film Transistors*, **Applied Physics Letters,** Vol. 77(14), pp. 2234-2236 (2 October 2000).
231. F.J. De la Hidalga-W., M.J. Deen, E.A. Gutiérrez-D., *Theoretical and Experimental Characterization of Self-Heating in Silicon Integrated Devices Operating at Low Temperatures*, **IEEE Transactions on Electron Devices**, Vol. 47(5), pp. 1098-1106 (May 2000).
232. P. Kolev, M.J. Deen, H.C. Liu, J.M. Li, M. Buchanan and Z.R. Wasilewski, *Asymmetry in the Dark Current Low Frequency Noise Characteristics of B-B and B-C Quantum Well Infrared Photodetectors (QWIPs) from 10K to 80K*, **Journal of Applied Physics**, Vol. 87(5), pp. 2400-2407 (1 March 2000).
233. W.S. Kwan, C.H. Chen and M.J. Deen, *Hot-Carrier Effects on RF Noise Characteristics of LDD MOSFETs*, **Journal of Vacuum Science and Tech A (Special Issue for CSTC 1999)**, Vol. A18(2), pp. 765-769 (March/April 2000).
234. C.H. Chen and M.J. Deen, *Direct Extraction of the Channel Thermal Noise in MOSFETs from Measurements of Their RF Noise Parameters*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 1999)**, Vol. A18(2), pp. 757-760 (March/April 2000).

235. Y. Xiao and M.J. Deen, *Two-Dimensional Gain Profiles of InP/InGaAs SAGCM Avalanche Photodiodes Modeled by a Simplified Stochastic Approach*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 1999)**, Vol. A18(2), pp. 610-614 (March/April 2000).
236. S. An and M.J. Deen, *Low Frequency Noise in Single Growth Planar Separate Absorption, Grading, Charge and Multiplication Avalanche Photodiodes*, **IEEE Transactions on Electron Devices**, Vol. 47(3), pp. 537-543 (March 2000).
237. Y. Xiao and M.J. Deen, *Modeling of Two-Dimensional Gain Profiles for InP/InGaAs Avalanche Photodiodes with a Stochastic Approach*, **IEEE Journal of Quantum Electronics**, Vol. 35(12), pp. 1853-1862 (December 1999).
238. S. An, M.J. Deen, A.S. Vetter, W.R. Clark, J.-P. Noel and F.R. Shepherd, *Effect of Mesa Overgrowth on Low-Frequency Noise in Planar Separate Absorption, Grading, Charge and Multiplication Avalanche Photodiodes*, **IEEE Journal of Quantum Electronics**, Vol. 35(8), 1196-1202 (August 1999).
239. T. Hardy, M.J. Deen and R. M. Murowinski, *Low Frequency Noise in Proton Damaged LDD MOSFETs*, **IEEE Transactions on Electron Devices**, Vol. 46(7), pp. 1339-1346 (June 1999).
240. M. Margarit, J.L. Tham, R.G. Meyer and M.J. Deen, A *Low-Noise, Low Power VCO with Automatic Amplitude Control for Wireless Applications*, **IEEE Journal of Solid-State Circuits**, Vol. 34(6), pp, 761-771 (June 1999).
241. X.Y. Chen, M.J. Deen, A.D. van Rheenen, C.X. Peng and A. Nathan, *Low Frequency Noise in a Thin Active Layer α-Si:H Thin Film Transistor*, **Journal of Applied Physics**, Vol. 85(11), pp. 7952-7957 (1 June 1999).
242. E. Abou-Allam, T. Manku, C.H. Chen and M.J. Deen, *A Self Consistent Lumped Radio Freq. Linear Network Model for the MOSFET Taking into Account the Gate Resistance*, **Canadian Journal of Physics**, Vol. 31, pp. 371-384 (1999).
243. M.J. Deen, M.E. Levinshtein, S.L. Rumyantsev and J. Orchard-Webb, *Generation-Recombination Noise in MOSFETs*, **Semiconductor Science and Technology**, Vol. 14(3), pp. 298-304 (March 1999).
244. M.J. Deen, S.L. Rumyantsev and M. Schroter, *On the Origin of 1/f Noise in Polysilicon Emitter Bipolar Transistors*, **Journal of Applied Physics**, Vol. 85(2), pp. 1192-1195 (15 January 1999).
245. P. Kolev, M.J. Deen, J. Kierstead and M. Citterio, *Constant Resistance DLTS in Si and Ge JFETs*, **IEEE Transactions on Electron Devices**, Vol. 46(1), pp. 204-213 (January 1999).
246. C.W. Chu, M.J. Deen and R.H. Hill, *Sensors for Detecting Sub-ppm NO_2 Using Photochemically Produced Amorphous Tungsten Oxide*, **Journal of the Electrochemical Society**, Vol. 145(12), pp. 4219-4225 (December 1998).
247. C.H. Chen and M.J. Deen, *High Frequency Noise of MOSFETs I - Modeling*, **Solid-State Electronics,** Vol. 42(11), pp. 2069-2081 (November 1998).
248. C.H. Chen, M.J. Deen, Z.X. Yan, M. Schroter and C. Enz, *High Frequency Noise of MOSFETs II - Experiments*, **Solid-State Electronics,** Vol. 42(11), pp. 2083-2092 (November 1998).
249. E.A. Gutierrez-D, S. Koshevaya and M.J. Deen, A *4.2 K CMOS Optical Detector*, **Cryogenics**, Vol. 38(9), pp. pp. 943-945 (September 1998).
250. P. Kolev, M.J. Deen, T. Hardy and R. Murowinski, *A New Voltage Transient Technique for Deep Level Studies in Depletion-Mode Field-Effect Transistors*, **Jour of the Electrochemical Soc**, vol. 145(9), pp. 3258-3264 (Sep. 1998).
251. M.J. Deen, S. Rumysantsev and J. Orchard-Web, *Low Frequency Noise in Heavily Doped Polysilicon Thin Film Resistors*, **Journal Vacuum Science and Technology B (Special Issue for CSTC 1997)**, Vol. B16(4), pp. 1881- 1884 (July/August 1998).
252. F.J. De La Hidalga-W, M.J. Deen and E.A. Gutierrez-D., *The Effect of the Forward Biasing the Source-Substrate Junction in n-MOS Transistors for Possible Low Power CMOS IC's Applications*, **Journal of Vacuum Science and Technology B (Special Issue for CSTC 1997)**, Vol. B16(4), pp. 1812-1817 (July/August 1998).
253. M.J. Deen, S. Rumysantsev, R. Bashir and R. Taylor, *Measurements and Comparison of Low Frequency Noise in npn and pnp Polysilicon Emitter Bipolar Transistors*, **Journal of Applied Physics**, Vol. 84(1), pp. 625-633 (1 July 1998).
254. Plamen V. Kolev, M.J. Deen, and N. Alberding, *Averaging and Recording of Digital DLTS Transient Signals*, **Review of Scientific Instruments**, Vol. 69(6), pp. 2464-2474 (June 1998).
255. A. Bandyopadhyay, M.J. Deen, L. E. Tarof and W. Clark, *A Simplified Approach to Time Domain Modeling of Avalanche Photodiodes*, **IEEE Journal of Quantum Electronics**, Vol. 34(4), pp. 691-699 (April 1998).
256. T. Hardy, R. Murowinski and M.J. Deen, *Charge Transfer Efficiency in Proton Damaged CCDs*, **IEEE Transactions on Nuclear Science,** Vol. 45(2), pp. 154-163 (April 1998).
257. W.S. Kwan and M.J. Deen, *Hot-Carrier Effects on the Scattering Parameters of LDD MOSFETs*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 1997)**, Vol. A16(2), pp. 855-859 (March/April 1998).
258. C.H. Chen and M.J. Deen, *Direct Calculation of the MOSFET High Frequency Noise Parameters*, **Journal of Vacuum Science and Technology A (Special Issue for CSTC 1997)**, Vol. A16(2), pp. 850-854 (March/April 1998).
259. W.S. Kwan and M.J. Deen, *Hot-Carrier Effects on the Scattering Parameters of LDD MOSFETs*, **Journal of Vacuum Science and Technology B: Microelectronics and Nanometer Structures,** Vol. B16(2), pp. 628-632 (March 1998).

260. X.Y. Chen, M.J. Deen, Z.X. Yan and M. Schroter, *Effects of Emitter Dimensions on Low Frequency Noise in Double Polysilicon BJTs,* **Electronics Letters**, Vol. 34(2), pp. 219-220 (22 January 1998).
261. P.V. Kolev and M.J. Deen, *Constant-Resistance Deep Level Transient Spectroscopy in Sub-Micron Metal-Oxide-Semiconductor Field-Effect Transistors,* **Journal of Applied Physics**, Vol. 83(2), pp. 820-825(15 January, 1998)
262. F.J. De la Hidalga-W., M.J. Deen, E.A. Gutierrez & F. Balestra, *Effects of Forward Biasing the Substrate on the Low Temperature Behavior of n-MOS Transistors,* **Electronics Letters**, Vol. 33(17), pp. 1456-1458 (14 August 1997).
263. Z.X. Yan, M.J. Deen and D.S. Malhi, *Gate-Controlled Lateral LPNP BJT: Characteristics, Modeling and Circuit Applications,* **IEEE Transactions on Electron Devices**, Vol. 44(1), pp. 118-128 (January 1997).
264. A. Raychaudhuri, M.J. Deen, M.I.H. King and W. Kwan, *Features and Mechanisms of the Saturating Hot-Carrier Degradation in LDD MOSFETs,* **IEEE Transactions on Electron Devices,** Vol. 43(7) pp. 1114-1122 (July 1996).
265. A Raychaudhuri, MJ Deen, M King and J Kolk, *Finding the Asymmetric Parasitic Source and Drain Resistances from the A.C. Conductances of a Single MOS Transistor,* **Solid-State Electronics,** Vol. 39(6), pp. 909- 913 (June 1996).
266. E.A. Gutierrez, S.V. Koshevaya, P. Kolev and M.J. Deen, *A 4.2K Very High Gain/Modulation Factor Silicon Detector/Modulator,* **Journal de Physique IV**, Vol. 6, Coll. 3, Suppl. JP III, No. 4, pp. C3-213-C3-218 (Avril 1996).
267. M.J. Deen and J. Ilowski, *Modeling of Bonding Pads and Their Effects on the High Frequency Characteristics of Bipolar Junction Transistors*, **Canadian Journal of Physics (Special Issue)**, Vol. 74, pp. S200-S204 (1996)
268. M.J. Deen, *High Frequency Noise Modeling and the Scaling of the Noise Parameters of Polysilicon Emitter Bipolar Junction Transistors,* **Canadian Journal of Physics (Special Issue for CSTC 1995)**, Vol. 74, pp. S195-S199 (1996).
269. M.J. Deen and Z.X. Yan, *Unique D.C. Characteristics of a New Gated LPNP BJT Using 0.8*μ*m BiCMOS Technology,* **Canadian Journal of Physics (Special Issue for CSTC 1995)**, Vol. 74, pp. S189-S194 (1996).
270. V. Van, M.J. Deen, J. Kendall, D.S. Malhi, S. Voinigescu and M. Schroter, *D.C. Extraction of Base and Emitter Resistances in Polysilicon Emitter npn BJTs,* **Canadian Jour of Phys (Special Issue)**, vol. 74, pp. S172-S176 (1996).
271. W.S. Kwan, A. Raychaudhuri and M.J. Deen, *Location and Quantification of the Interface Defects in Stressed MOSFETs Using a Combination of Floating Gate and Transconductance Techniques, and Charge Pumping Methods,* **Canadian Journal of Physics (Special Issue for CSTC 1995)**, Vol. 74, pp. S167-S171 (1996).
272. P. Kolev, M.J. Deen and H.C. Liu, Jianmeng Li, M. Buchanan and Z. R. Wasilewski, *Thermally Activated Current-Voltage Asymmetry in Quantum Well Inter-Subband Photodetectors,* **Canadian Journal of Physics (Special Issue for CSTC 1995)**, Vol. 74, pp. S9-S15 (1996)
273. X. Zhao, M.J. Deen and L. Tarof, *Low Frequency Noise in Separate Absorption, Grading, Charge and Multiplication (SAGCM) Avalanche Photodiodes,* **Electronics Letters**, Vol. 32(3) pp. 250-252 (1 February 1996).
274. A Raychaudhuri, MJ Deen, MIH King and W Kwan, *A Simple Method to Qualify the LDD Structure Against the Early Mode of Hot-Carrier Degradation,* **IEEE Transactions on Electron Devices,** Vol. 43(1), pp. 110-115 (January 1996).
275. C.L.F. Ma, M.J. Deen and L. Tarof, *Device Parameters Extraction in Separate Absorption, Grading, Charge and Multiplication InP/InGaAs Avalanche Photodiodes,* **IEEE Transactions on Electron Devices,** Vol. 42(12), pp. 2070-2079 (December 1995).
276. C.L.F. Ma, M.J. Deen and L. Tarof, *Multiplication in Separate Absorption, Grading, Charge and Multiplication InP/ InGaAs Avalanche Photodiodes,* **IEEE Journal of Quantum Electronics,** Vol. 31(11), pp. 2078-2089 (Nov. 1995).
277. A. Raychaudhuri, J. Kolk, M.J. Deen and M.I.H. King, *A Simple Method to Extract the Asymmetry in Parasitic Source and Drain Resistances from Measurements on a MOS Transistor,* **IEEE Transactions on Electron Devices,** Vol. 42(7), pp. 1388-1390 (July 1995).
278. M.J. Deen, J.I. Ilowski and P. Yang, *Low Frequency Noise in Polysilicon-Emitter Bipolar Junction Transistors,* **Journal of Applied Physics,** Vol. 77(12), pp. 6278-6288 (15 June 1995).
279. M.S.A. Abdou, X. Lu, Z.W. Xie, M.J. Deen and S. Holdcroft, *The Nature of Impurities in* π*-Conjugated Polymers Prepared by Ferric Chloride and Their Effect of the Electrical Properties of Metal-Insulator-Semiconductor Structures,* **Chemistry of Materials,** Vol. 7(4), pp. 631-641 (April 1995).
280. C.L.F. Ma, M.J. Deen, L. Tarof and J. Yu, *Temperature Dependence of Breakdown Voltages in Separate Absorption, Grading, Charge and Multiplication InP/InGaAs Avalanche Photodiodes,* **IEEE Transactions on Electron Devices,** Vol. 42(5), pp. 810-818 (May 1995).
281. Z.X. Yan and M.J. Deen, *New RTD Large Signal Model Suitable for PSPICE,* **IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems,** Vol. 14(2), pp. 167-172 (February 1995).
282. M.S.A. Abdou, F.P. Orfino, Z.W. Xie, M.J. Deen and S. Holdcroft, *Reversible Charge Transfer Complexes Between Molecular Oxygen and Poly(3-Alkylthiophenes),* **Advanced Materials,** Vol. 6(11), pp. 838-841 (November 1994).
283. M.J. Deen, A.A. Naem and L.Y. Chee, *Temperature Effects on Heavily Doped Polycrystalline Silicon,* **Journal of Applied Physics,** Vol. 76(9), pp. 5253-5259 (1 November 1994).
284. A.A. Naem, M.J. Deen and L. Chee, *Temperature Effects on the Resistivity of Heavily Doped Polycrystalline Titanium*

Silicide, **Journal of Applied Physics,** Vol. 76(2), pp. 1071-1076 (15 July 1994).

285. M.J. Deen and Z.P. Zuo, *A Physical Model for the Edge Effects in Narrow Width MOSFETs,* **Solid-State Electronics**, Vol. 36(11), pp. 1557-1562 (November 1993).
286. Z.X. Yan and M.J. Deen, *New BiCMOS Delay Model to Include R_C Limited BJT Saturation Effects,* **Solid-State Electronics**, Vol. 36(11), pp. 1523-1528 (November 1993).
287. A. Raychaudhuri and M.J. Deen, *New Static Storage Scheme for Analog Signals Using Four-State Resonant Tunneling Devices,* **Electronics Letters**, Vol. 29(16), pp. 1435-1437 (5 August 1993).
288. M.J. Deen, *Low Frequency Noise as a Characterization Tool in InP and GaAs-Based Double Barrier Resonant Tunneling Diodes,* **Materials Science and Engineering B**, Vol. B20, pp. 207-213 (1993).
289. R. Murowinski, G. Linzhuang and M.J. Deen, *The Effects of Space Radiation Damage and Temperature on the Noise in CCDs and LDD MOS Transistors,* **IEEE Transactions on Nuclear Science**, Vol. 40(3), pp. 288-294 (July 1993).
290. M.J. Deen and J.J. Ilowski, *Microwave Noise Characterization of Poly-Emitter Bipolar Junction Transistors,* **Electronics Letters**, Vol. 29(8), pp. 676-677 (15 April, 1993).
291. Y. Zhu, M.J. Deen and T.M. Kleinpenning, *A New 1/f Noise Model for Metal-Oxide-Semiconductor Field-Effect Transistors in Saturation and Deep Saturation,* **Journal of Applied Physics**, Vol. 72(12), pp. 5990-5998 (Dec. 1992).
292. A. Ng, M.J. Deen and J. Ilowski, *Determination of the Trap Energy Levels and Emitter Area Dependence of Noise in Poly-Emitter Bipolar Junction Transistors from Generation-Recombination Noise Spectra,* **Canadian Journal of Physics (Special Issue for CSTC 1991)**, Vol. 70(10-11), pp. 949-958 (Oct-Nov 1992).
293. A. Raychaudhuri, Z.X. Yan, M.J. Deen and A.C. Seabaugh, *Hysteresis in RTD-Based Multi-Peak Driver Device for Multi-Valued SRAM Cells: Analysis and Simulation Results,* **Canadian Journal of Physics (Special Issue for CSTC 1991)**, Vol. 70, pp. 993-1000 (Oct-Nov 1992).
294. C.L.F. Ma, M.J. Deen and R.H.S. Hardy, *Excess Currents Due to Trap-Assisted Tunneling in Double Barrier Resonant Tunneling Diodes,* **Canadian Journal of Physics (Special Issue for CSTC 1991)**, Vol. 70(10-11), pp. 1005-1012 (Oct-Nov 1992).
295. Z. Xie, M.S. Abdou, X. Lu, M.J. Deen and S. Holdcroft, *Electrical Characteristics of Poly(3-Hexylthiophene) Thin Film MISFETs,* **Canadian Journal of Physics (Special Issue for CSTC 1991)**, Vol. 70(10-11), pp. 1171-1177 (Oct-Nov 1992).
296. Z.X. Yan and M.J. Deen, *A New Resonant-Tunnel Diode-Based Multi-Valued Memory Circuit Using a MESFET Depletion Load,* **IEEE Journal of Solid-State Circuits**, Vol. SC-27(8), pp. 1198-1203 (August 1992).
297. X.M. Li and M.J. Deen, *Determination of the Interface State Density in MOSFETs Using the Spatial Profiling Charge Pumping Technique,* **Solid-State Electronics**, Vol. 35(8), pp. 1059-1063 (August 1992).
298. M.J. Deen, *A Simple Method to Determine the Series Resistance and its Temperature Dependence in AlAs/ GaAs/AlAs Double Barrier Resonant Tunneling Diodes,* **Electronics Letters**, Vol. 28(3), pp. 1195-1997 (June 1992).
299. M.J. Deen and Z.X. Yan, *DIBL in Short Channel NMOS Devices at 77K,* **IEEE Transactions on Electron Devices**, Vol. ED 39(4), pp. 908-915 (April 1992).
300. M.J. Deen and Z.X. Yan, *A Simple Propagation Model for BiCMOS Driver Circuits,* **Solid-State Electronics**, Vol. 35(1), pp. 9-13 (January 1992).
301. Z.P. Zuo and M.J. Deen, *Parallel Parasitic Conductance in Narrow Width MOSFETs,* **Solid-State Electronics**, Vol. 34(12), pp. 1381-1386 (December 1991).
302. S.A. Boothroyd, J. Chrostowski, H.X. Lian, A. Rawicz and M.J. Deen, *Second Harmonic Modulation in Potassium Niobate,* **Microwave and Optical Technology Letters**, Vol. 4(12), pp. 521-524 (November 1991).
303. Z.X. Yan and M.J. Deen, *Comparison of Drain-Induced Barrier-Lowering in Short Channel NMOS and PMOS Devices at 77K,* **Solid-State Electronics**, Vol. 34(10), pp. 1065-1070 (October 1991).
304. M.J. Deen and Z.P. Zuo, *Edge Effects in Narrow Width MOSFET's,* **IEEE Transactions on Electron Devices**, Vol. ED 38(8), pp. 1815-1819 (August 1991).
305. Z.X. Yan and M.J. Deen, *A Physically-Based Method for Measuring the Threshold Voltage of MOSFETs,* **IEE Proceedings ~ G Circuits, Devices and Systems**, Vol. 138(3), pp. 351-357 (June 1991).
306. M.J. Deen and J. Wang, *Substrate Currents in Short Channel PMOS Devices at Cryogenic Temperatures,* **Cryogenics**, Vol. 30(12), pp. 1113-1117 (December 1990).
307. X.M. Li, M.J. Deen, S. Stapleton, R.H.S. Hardy and O. Berolo, *Low Temperature 1/f Noise Studies of AlAs-GaAs- AlAs Quantum Well Diodes,* **Cryogenics**, Vol. 30(12), pp. 1140-1145 (December 1990).
308. Z.X. Yan and M.J. Deen, *Substrate Bias Effects on Drain-Induced Barrier Lowering in Short Channel PMOS Devices at 77K,* **Cryogenics**, Vol. 30(12), pp. 1160-1165 (December 1990).
309. M.J. Deen and Z.P. Zuo, *Low Temperature Dependence of the Hole Impact Ionization Constants Determined from PMOS Transistors,* **Electronics Letters**, Vol. 26(23), pp. 1975-1977 (November 1990).

310. Z.X. Yan and M.J. Deen, *The Dependence of Drain-Induced Barrier Lowering on Substrate Biasing in Short Channel PMOS Devices at 77K*, **Solid-State Electronics**, Vol. 33(10), pp. 1265-1273 (October 1990).
311. M.J. Deen, *Anomalous Drain-Induced Barrier Lowering in Short Channel NMOS Devices at 77K*, **Electronics Letters**, Vol. 26(18), pp. 1493-1495 (August 1990).
312. M.J. Deen and Z.X. Yan, *Substrate Bias Effects on Drain Induced Barrier Lowering in Short Channel PMOS Devices*, **IEEE Transactions on Electron Devices**, Vol. 37(7), pp. 1707-1713 (July 1990).
313. M.J. Deen and Z.X. Yan, *A New Method of Measuring the Threshold Voltage for Small Geometry MOSFETs from Subthreshold Conduction*, **Solid-State Electronics**, Vol. 33(5), pp. 503-512 (May 1990).
314. S.P. Stapleton, M.J. Deen and R.H.S. Hardy, *A Novel Power Combining Technique for MMIC Oscillators*, **Electronics Letters**, Vol. 26(5), pp. 300-301 (March 1990).
315. M.J. Deen and J. Wang, *PMOS Transistors Intrinsic Mobility and Their Surface Degradation Parameters at Cryogenic Temperatures*, **IEE Proceedings ~G Circuits, Devices and Systems**, Vol. 137, Pt. G, No. 1, pp. 33-36 (Feb. 1990).
316. S.P. Stapleton, M.J. Deen, O. Berolo, and R.H.S. Hardy, *Experimental Study of the Microwave Reflection Gain of AlAs/GaAs/AlAs Quantum Well Structures*, **Electronics Letters**, Vol. 26(2), pp. 84-85 (18 January 1990).
317. M.J. Deen, J. Wang and R.H.S. Hardy, *Intrinsic Mobility and Its Surface Degradation Parameters in Narrow Channel PMOS Devices at Cryogenic Temperatures*, **Solid-State Electronics**, Vol. 32(11), pp. 1009-1012 (November 1989).
318. B. Jaggi, M.J. Deen and B. Palcic, *Design of a Solid State Microscope*, **Optical Engineering**, Vol. 28(6), pp. 675- 682 (June 1989).
319. M.J. Deen and E.D. Thompson, *Design and Simulated Performance of a CARS Spectrometer for Dynamic Temperature Measurements Using Electronic Heterodyning*, **Applied Optics**, Vol. 28(7), pp. 1409-1416 (April 1989).
320. M.J. Deen, *Digital Characteristics of CMOS Devices at Cryogenic Temperatures*, **IEEE Journal of Solid-State Circuits**, Vol. SC-24(1), pp. 158-164 (February 1989).
321. M.J. Deen, D. Landheer, J.D. Wade, G.I. Sproule and M.D. Denhoff, *NbN Thin Films Reactively Sputtered with a High Field DC Magnetron*, **Journal of Vacuum Science and Technology A**, Vol. 6(4), pp. 2299-2303 (July/Aug. 1988).
322. M.J. Deen, *Cryogenic Temperature Dependence of the Voltage Transfer Characteristics of CMOS Inverters*, **Solid-State Electronics**, Vol. 31(8), pp. 1299-1308 (August 1988).
323. M.J. Deen, C.Y. Chan and N. Fong, *Operational Characteristics of a CMOS Microprocessor System at Cryogenic Temperatures*, **Cryogenics**, Vol. 28(5), pp. 336-338 (May 1988).
324. M.J. Deen, *Operational Characteristics of CMOS Op-Amps at Cryogenic Temperatures*, **Solid-State Electronics**, Vol. 31(2), pp. 291-297 (February 1988).
325. M.J. Deen, *The Effect of the Deposition Rate on the Properties of DC Magnetron Sputtered Niobium Nitride Thin Films*, **Thin Solid Films**, Vol. 152(9), pp. 535-44 (September 1987).
326. M.J. Deen and E.D. Thompson, *NbN_X-NbO_Y-$PbIn_Z$ Josephson Junctions with R.F. Oxidized Tunneling Barriers*, **IEEE Transactions on Magnetics**, Vol. MAG-19(3), pp. 954-956 (May 1983).
327. G.L. Larkins, E.D. Thompson, M.J. Deen, C.W. Burkhart and J.B. Lando, *Josephson Junctions with Monomolecular Barriers*, **IEEE Transactions on Magnetics**, Vol. MAG-19(3), pp. 980-982 (May 1983).

Keynote, Plenary or Invited Conference Papers

- **Total Plenary, Keynote, Invited Refereed and Contributed Conference Publications – 244**
- **Total Plenary, Keynote, Invited Refereed Conference Publications – 94**

1. **Invited Paper,** A.U. Alam, S. Majumder, C-H. Chen, O. Marinov and M.J. Deen "*Low Frequency Noise in Electrochemical Sensors for Water Quality Monitoring*" **Proceedings of the 25th International Conference on Noise and Fluctuations (ICNF 2019)**, Neuchâtel, Switzerland, pp. 77-82 (18 - 21 June 2019).
2. **Keynote Paper**, M.J. Deen and A.U. Alam, "*Flexible Sensors – Materials, Interfaces and Surfaces*", Digest of **2019 6th International Workshop on Low Temperature Bonding for 3D Integration (LTB-3D 2019)**, pp. 108-115, Kanazawa, Ishikawa-Prefecture, Japan (May 21-25, 2019)
3. **Best Presentation Award** - **Opening Keynote Speaker**, M.J. Deen, "*Smart Sensors, IoT and Data Analytics – Research, Trends and Opportunities*," **The 2018 International Congress on Cybermatics** p. 9, Halifax, Nova Scotia, Canada (30 July – 3 August 2018).
4. **Opening Keynote Paper,** M. Jamal Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities*," **IEEE Fifth International Conference on Enterprise Systems (ES 2017) – Industry 4.0 and Made in China 2025,** Tsinghua University, Beijing, China, p. 5 (22-24 September 2017).
5. **Opening Keynote Paper,** M. Jamal Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities*," **International Academicians Forum - Made in China 2025 and Industry 4.0,** Yiwu, China, 1 page (19 Sep 2017).

6. **Best Presentation Award – Distinguished Keynote Speaker,** M. Jamal Deen, "*Information and Communications Technologies for Smart Homes for Elderly Healthcare*," **6th IEEE International Conference on Computer, Information and Telecommunication Systems (CITS 2017)**, Dalian, China, 2 pages (21-23 July 2017).
7. **Opening Plenary Paper,** M. Jamal Deen, "*Low Frequency Noise in Semiconductor Devices – State-of-the-art and Future Perspectives*," **24th International Conference on Noise and Fluctuations (ICNF 2017)**, Vilnius, Lithuania, IEEE Conference Proceedings, 4 pages (20-23 June 2017).
8. **Best Presentation Award - Keynote Speaker**, M.J. Deen, *"Smart Sensors and Smart Home*: *State-of-the-Art and Future Perspectives*," **The 2016 World Cybermatics Congress (Cybermatics X 2016)**, Chengdu, China 2 pages (16-19 December 2016).
9. **Plenary Paper**, M.J. Deen, "*Compact Modeling of Organic/Polymeric Thin Film Transistors - Past, Present and Future*", **7th International Conference on Computer Aided Design for Thin-Film Transistor Technologies (CAD-TFT),** Beijing, China, 2 pages (26-28 October 2016).
10. **Best Presentation Award - Keynote Speaker**, M.J. Deen, *"Smart Sensors - Research, Trends and Opportunities*," **The 2016 International Conference on Smart X (Smart X 2016)**, Dalian, 2 pages (29-31 July 2016).
11. **Opening Keynote Speaker**, M.J. Deen, *"Engineering Education's Contribution to Economic Development*," **Asian Engineering Deans Summit (AEDS) 2016**, Zhejiang University, Hangzhou, China, 2 pages (16-17 May 2016).
12. **Best Presentation Award - Keynote Paper**, M.J. Deen, "*Smart Sensors, Smart Homes and Smart Cities*," **2015 International Conference on Smart City (IEEE Smart City 2015)**, 2 pages, Chengdu, China (19-21 Dec 2015).
13. **Plenary Paper**, M.J. Deen, *"Unprecedented Vision: From Quantum Dots to Silicon Imagers*," **The 5th IEEE International Conference on Computers and Devices for Communications** (**CODEC'15**), Kolkata, India, pp 4-5, (16-18 December 2015).
14. **Plenary Paper**, M.J. Deen, *"Engineering Education's Contribution to Economic Development*," **2015 Conference of the Global Engineering Dean's Council (GEDC2015)**, Adelaide, Australia, 2 pages (30 November – 2 Dec 2015).
15. **Keynote Paper**, M.J. Deen, "*Smart Home Technologies for Smart Cities*," The Twelfth International Conference on Ubiquitous Intelligence and Computing (UIC 2015), Beijing, China, 2 pages (10-14 August 2015).
16. **Keynote Paper**, M.J. Deen, "*Bioimagers – Life at the Intersection of Engineering and the Sciences*," **International Photonics and Optoelectronics Meetings (POEM 2015) – Optoelectronics and Devices Integration (OEDI)**, 2 pages, Wuhan, China (16-19 June 2015).
17. **Best Presentation Award - Keynote Paper**, M.J. Deen, "*Information and Communications Technologies for Elderly Ubiquitous Healthcare*," **Second IEEE International Symposium on Future Information & Communication Technologies for Ubiquitous Healthcare (Ubi-HealthTech 2015)**, 2 pages, Beijing, China (28-30 May 2015).
18. **Invited Paper**, O. Marinov and M.J. Deen, "*Low-Frequency Noise in Organic Transistors*," **IEEE Proceedings of the 23rd International Conference on Noise and Fluctuations** (**ICNF 2015**), Xian, China, 6 pages (2-5 June 2015).
19. **Keynote Paper**, M.J. Deen, "*Information and Communications Technologies for Elderly Ubiquitous Healthcare*," **Second IEEE International Symposium on Future Information & Communication Technologies for Ubiquitous Healthcare (Ubi-HealthTech 2015)**, 2 pages, Beijing, China (28-30 May 2015).
20. **Best Keynote Speech Award - Keynote Paper**, M. Jamal Deen, "*Smart Home Technologies Towards Better Healthcare*," **The 13th International Conference on Ubiquitous Computing and Communications (IUCC 2014),** Chengdu, China, 2 pages (19-21 December 2014).
21. **Keynote Paper**, M. Jamal Deen, "*High-performance Integrated Circuits for Environmental and Biomedical Applications*," **IEEE TENCON 2014 – Leveraging Technology for a Better Tomorrow (IEEE Region 10 International Technical Conference)**, Bangkok, Thailand, 2 pages (22-25 October 2014).
22. **Keynote Paper**, M. Jamal Deen, "*Information and Communications Technologies for Ubiquitous Healthcare*," **The 4th International Conference on Current and Future Trends of Information and Communication Technologies in Healthcare (ICTH)**, Halifax, Nova Scotia, 2 pages (22-25 September 2014).
23. **Keynote Paper**, M. Jamal Deen and M.M.R. Howlader, "*Nanobonding - A Key Technology for Emerging Applications in Health and Environment*,"**2014 4th IEEE International Workshop on Low Temperature Bonding for 3D Integration** (**LTB-3D 2014**), The University of Tokyo, Hongo, Japan, 2 pages (15-16 July 2014).
24. **Keynote Paper**, M.J. Deen and J. Xiao, "*Ubiquitous-Healthcare Smart Homes*," **First IEEE International Symposium on Future Information & Communication Technologies for Ubiquitous Healthcare (Ubi-HealthTech 2013)**, 2 pages, Jinhua, China (1-3 July 2013).
25. **Invited Paper**, M.J. Deen, "*Low Frequency Noise in Silicon-based Devices, Circuits and Systems*," **22nd International Conference on Noise and Fluctuations**, Montpellier, France, 5 pages (24-28 June 2013).
26. **Invited Paper**, M.J. Deen, "*Flexible Electronics – Opportunities and Challenges*," **The 2013 IEEE International Conference on Electron Devices and Solid-State Circuits** (EDSSC'13), Hong Kong, 2 pages (3-5 June 2013).
27. **Plenary Paper**, M.J. Deen, "*Biosensors - Research at the Intersection of Engineering and the Sciences*," **Second Saudi**

International Electronics, Communications and Photonics Conference (**SIECPC**), Riyadh, Saudi Arabia, 3 pages, (27-30 April 2013).

28. **Invited Paper**, M.J. Deen, *"Photodetectors - From Quantum Dot to Silicon Imagers*," **The 1st International Workshop on Advanced Materials and Devices** (**WAMD '13**), Havana, Cuba, 4 pages (13-15 March 2013).
29. **Keynote Paper**, M.J. Deen, *"Information and Communications Technologies for Ubiquitous Healthcare*," **The 5th IEEE International Conference on Computers and Devices for Communications** (**CODEC'12**), Kolkata, India, pp K1-K3, (17-19 December 2012).
30. **Keynote Paper**, M.J. Deen *"Information and Communications Technologies for Ubiquitous Healthcare*," **8th International Caribbean Conference on Devices, Circuits and Systems (ICCDCS)**, Playa del Carmen, Mexico, 2 pages (14-17 March 2012).
31. **Plenary Paper**, M.J. Deen, "*Information and Communications Technologies for Ubiquitous-Healthcare*," **2011 IEEE 10th Int'l Symposium on Signals, Circuits and Systems (ISSCS)**, Iasi, Romania, pp. 269-270 (30 June – 1 July 2011).
32. **Keynote Paper**, M.J. Deen, M.M.R. Howlader, P.R. Selvaganapathy and T. Suga, "*Nanobonding Technologies for Emerging Applications*," **JIEP-IEEE International Conference on Electronics Packaging** (**ICEP 2011**), Nara, Japan, 13 pages (13-15 April 2011).
33. **Invited Paper**, M.J. Deen, "*Low-Cost, High-Sensitivity Photodetection Systems for Biomedical Applications*," **IEEE-URSI 12th International Symposium on Microwave and Optical Technology - ISMOT 2009**, New Delhi, India, 4 pages (16-19 December 2009).
34. **Plenary Paper**, M.J. Deen, "*CMOS Photodetectors and Imaging Systems for Biomedical Applications*,**" IEEE/SPIE 4th Int'l Conf. on Computers & Devices for Communications** (**CODEC**), Calcutta, India, 5 pages (14-16 Dec. 2009).
35. **Plenary Paper**, Jamal Deen and Nazim Agoulmine, "*Convergence of U-Health and U-Environment: An Autonomic Smart Home for the Elderly*," **2009 IEEE Toronto International Conference - Science and Technology for Humanity**, Toronto, Canada, 2 pages (26-27 September 2009).
36. **Invited Paper**, M.J. Deen, M.M. El-Desouki and N. Faramarzpour, "*CMOS Image Sensors and Camera-on-a-Chip for Low-light Level Biomedical Applications*," **2008 IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC 2008),** Hong Kong, 6 pages (8-10 December 2008).
37. **Keynote Paper**, M.J. Deen, M.W. Shinwari and R. Selvaganapathy, *Towards Low-cost, High-sensitivty, Integrated Biosensors*, **26th IEEE International Conference on Microelectronics (MIEL 2008),** Nis, Serbia, Electron Devices Society, IEEE Press, Piscataway, NJ, pp. 307-314 (11-14 May 2008).
38. **Invited Paper**, M. Jamal Deen, Munir Eldesouki, Darek Palubiak and Shiva Kumar, *Silicon Radio-Frequency Integrated Circuits for Wireless and Wired Applications*, **German Microwave Conference – GeMiC 2008,** Hamburg, Germany, pp. 156-162 (10-12 March 2008).
39. **Invited Paper**, M.J. Deen, M.W. Shinwari and D. Landheer, *Noise Characteristics in Integrated Biosensing Devices*, **19th International Conference on Noise and Fluctuations – AIP Conference Proceedings, Vol. 922,** Melville, New York, Eds. M. Tacano, Y Yamamoto and M. Nakao, pp. 399-404 (9-14 September 2007).
40. **Invited Paper**, F. Pascal, J. Raoult, C. Delseny, P. Benoit, M. Marin and M.J. Deen, *Impact of Technological Parameters on the Low Frequency Noise of Advanced Heterojunction Bipolar Transistors*, **19th International Conference on Noise and Fluctuations – AIP Conference Proceedings, Vol. 922,** Melville, New York, Eds. M. Tacano, Y Yamamoto and M. Nakao, pp. 77-82, (9-14 September 2007).
41. **Keynote Paper**, M. Jamal Deen, Munir M. El-Desouki, Hamed M. Jafari and Saman Asgaran, *Low-Power Integrated CMOS RF Transceiver Circuits for Short-Range Applications*,**50th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2007) and 5th IEEE International Northeast Workshop on Circuits and Systems (NEWCAS 2007)**, Montreal, Canada, 6 pages (5-8 August 2007).
42. **Invited Paper**, M. Jamal Deen and M.W. Shinwari, *Modeling the Electrical Characteristics of FET-type Sensors for Biomedical Applications*, **Workshop on Compact Modeling**, Santa Clara, CA, 4 pages (20-24 May 2007).
43. **Keynote Paper**, M.J. Deen, M. Waleed Shinwari, Dolf Landheer and Gregory Lopinski, *High Sensitivity Detection of Biological Species via the Field-Effect*, **Proceedings of the IEEE International Caribbean Conference on Devices, Circuits and Systems,** Playa del Carmen, Quintana Roo, Mexico, pp. 381-385 (26-28 April 2006).
44. **Plenary Paper**, M. Jamal Deen and O. Marinov, *Noise in Advanced Electronic Devices and Circuits*, **18th Int. Conf. on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2005**), Salamanca, Spain, 19-23 September 2005, **AIP Conf. Proceedings,** Vol. 780, Eds. T. Gonzalez, J. Mateos and D. Pardo, Melville, New York, pp. 3-12 (2005).
45. **Invited Paper**, M. Jamal Deen and Rizwan Murji, *Integrated Circuits for Low Power Transceiver Applications in CMOS*, **IEEE 2005 Int. NE Workshop Circ. & Sys. (NEWCAS)**, Quebec City, pp. 256-259 (June 19-22, 2005).
46. **Invited Paper**, M. Jamal Deen, J.C. Ranuárez and C.-H. Chen, *Effect of the Gate Tunneling Current on the High-Frequency Noise of MOSFETs*, **Workshop on Compact Modeling**, Anaheim, CA, pp. 35-39 (8-12 May 2005).
47. **Plenary Paper**, M. Jamal Deen, *Plastic Microelectronics with Organic and Polymeric Thin Film Transistors*, **IEEE**

Spanish Conference on Electron Devices - IEEE Conferencia De Dispositivos Electronicos, Tarragona, Spain, (CDE05-102), 4 pages (3-5 February 2005).

48. **Invited Paper**, M. Jamal Deen, Juan C. Ranuarez and Y. Ramadass, *Distributed and Travelling-Wave Amplifiers in CMOS Technology*, **Proc. of the 16th Asia Pacific Microwave Conf. (APMC' 04**), Ed. R.S. Gupta, New Delhi, India, 4 pages (15-18 December 2004).
49. **Invited Paper**, J.C. Ranuárez, Y.K. Ramadass and M.J. Deen, *CMOS Distributed Amplifiers*, **5th IEEE Int. Caracas Conf. on Devices, Circuits and Systems**, Santo Domingo, Dominican Republic, pp. 29-36 (3 - 5 Nov. 2004).
50. **Invited Paper**, C.H. Chen, S. Asgaran, F. Li and M.J. Deen, *Characterization and Modeling of High-Frequency Noise in MOSFETs for RFIC Design*, **SPIE - Noise in Devices and Circuits**, Vol. 5470, Eds. F. Danneville, M.J. Deen and M.E. Levinhstein, Gran Canaria, Spain, pp. 49-60 (26-28 May 2004).
51. **Invited Paper**, S. Asgaran and M. Jamal Deen, *RF Noise Models of MOSFETs- A Review*, **Workshop on Compact Modeling**, Boston, Massachusetts, pp. 259-264 (8-12 May 2004).
52. **Invited Paper**, F.J. De la Hidalga-W, F.J. Cortés-P and M.J. Deen, *New Insights on the Cryogenic Self-Heating of Silicon MOSFETs: Thermal Resistance of the Ceramic Package*, **Joint Proc. of the 7th Sym. on Low Temp. Elec. and the Int. Sym. on Low-Temperature Cofired Ceramic Based Electronic Devices,** Eds. C. Claeys, W. Wong-Ng and K.M. Nair, The Electrochemical Society Proc. Volume 2003-27, Penington, New Jersey, pp. 30-44 (2004).
53. **Plenary Paper**, M.J. Deen, R. Murji, N. Jafferali, S. Naseh and M.H. Kazemeini, *Low Power Integrated Circuits for Radio Frequency Applications: New Ways to Achieve Improved Performance*, **IEEE/SPIE International Conference on Computers and Devices for Communications (CODEC) 2004**, Calcutta, India, 6 pages (1-3 January 2004).
54. **Invited Paper**, A. Jimenez, F.J. De la Hidalga-W and M.J. Deen, *Modeling of the Dynamic Threshold MOSFET*, **IEEE/SPIE Int. Conf. on Computers and Devices for Communications**, Calcutta, India, 6 pages (1-3 Jan. 2004).
55. **Invited Paper**, N.R. Das and M.J. Deen, *SiGe and SiGeC-based Devices for Si-based Photonics*, **12th Int, Workshop on the Physics of Semiconductor Devices (IWPSD 2003),** IIT Madras, India, 6 pages, (16-20 December, 2003).
56. **Invited Paper**, M.J. Deen, S. Naseh, W.L. Ngan, N. Jafferali *Low Power RFICs for Receiver Applications – Design and Performance Issues*, **IEEE Conf. El. Dev. & Solid-State Circuits**, Hong Kong, pp. 215-20 (14-16 Dec. 2003).
57. **Invited Paper**, M.J. Deen, O. Marinov, S. Naseh, M. Sanden, M. Kazemeini, S.G-Jarrix, and F. Pascal, *Phase Noise in Oscillators: Experiments, Modeling and Circuit Issues*, **Proceedings of the 17th Int. Conf. on Noise in Phys. Sys. & 1/f Fluctuations** (**ICNF 2003**), Prague, Czech Republic, pp. 525-532 (18-22 Aug. 2003).
58. **Invited Paper**, O. Marinov and M.J. Deen, *Noise and Charge Transport in Polymer Thin-Film Structures*, **SPIE - Noise in Devices and Circuits**, Vol. 5113, Eds. M.J. Deen, Z. Celik-Butler and M.E. Levinhstein, pp. 301-312, Santa Fe, New Mexico (1-4 June 2003).
59. **Invited Paper**, F. Pascal, S.G-Jarrix, C. Delseny, A. Penarrier, C. Chay and M.J. Deen, *Comparison of Low Frequency Noise in III-V and Si/SiGe HBTs*, **SPIE - Noise in Devices and Circuits**, Vol. 5113, Eds. M.J. Deen, Z. Celik-Butler and M.E. Levinhstein, pp. 133-146, Santa Fe, New Mexico (1-4 June 2003).
60. **Keynote Paper**, M.J. Deen and F. Pascal, *Low Frequency Noise in Silicon Transistors: Experiments, Modeling, Scaling, Reliability and Circuit Issues*, **SPIE - Noise in Devices and Circuits**, Vol. 5113, Eds. M.J. Deen, Z. Celik-Butler and M.E. Levinhstein, pp. 1-15, Santa Fe, New Mexico (1-4 June 2003).
61. **Plenary Paper**, M.J. Deen, *Electrical Characterization Techniques for Semiconductor-Silicon Dioxide Interfaces - A Review*, **Proceedings of the Sixth Symposium Silicon Nitride and Silicon Dioxide Thin Insulating Films**, EdS.R.E. Sah, M.J. Deen, D. Landheer, K.B. Sundaram, W.D. Brown and D. Misra, **The 203rd Meeting of the Electrochemical Society** Paris, France, pp. 3-21 (27 April - 2 May 2003).
62. **Invited Paper**, Y. El-Batawy and M.J. Deen, *Resonant Cavity Enhanced Photodetectors (RCE-PDs): Structure, Material, Analysis and Optimization*, **SPIE Photonics West, Optoelectronics 2003 - Quantum Sensing: Evolution and Revolution from Past to Future**, Proc. Volume 4999, 16 pages, San Jose, California (25-31 January 2003).
63. **Invited Paper**, N.R. Das and M.J. Deen, *Integrated Silicon Photoreceivers for Optical Communication*, **Photonics 2002,** Mumbai, India, 6 pages (December 2002).
64. **Invited Paper**, P.K. Basu, S. Ghosh and M.J. Deen, *Optoelectronic Integrated Devices and Planar Lightwave Circuits on Silicon and Related Materials*, **Photonics 2002,** Mumbai, India, 6 pages (December 2002).
65. **Invited Paper**, O. Marinov, M.J. Deen, J. Yu, G. Vamvounis, S. Holdcroft and W. Woods, *Instability of the Noise Level in Polymer Field Effect Transistors with Non-Stationary Electrical Characteristics*, **3rd Int. Conf. on Unsolved Problems of Noise & Fluctuations,** 2-7 Sep. 2002, Ed. S.M. Bezrukov, AIP Conf. Proc. Vol. 665, New York, pp. 488-495 (2003).
66. **Invited Paper**, N.R. Das, Y. El-Batawy and M.J. Deen, *Optoelectronic Integrated Circuit Photoreceivers for Fiber Optic Telecommunications*, **Proceedings of the First Int. Symposium on Integrated Optoelectronics**, Eds., M.J. Deen, D. Misra and J. Ruzyllo, Electrochemical Society Press, Penington, New Jersey, pp. 163-194 (May 2002).
67. **Best Invited Paper Award** - **Invited Paper**, M.J. Deen, C-H. Chen, Y. Cheng, *MOSFET Modeling for Low Noise, RF*

Circuit Design, **Proceedings of the IEEE Custom Integrated Circuits Conference (CICC 2002),** Orlando, Florida, pp. 201-208 (12-15 May, 2002).

68. **Invited Paper**, M.J. Deen and Chih-Hung Chen, *RF MOSFET Noise Parameter Extraction and Modeling*, **Proceedings of the 5th International Symposium on Modeling and Simulation of Microsystems - Workshop on Compact Modeling (WCM-MSM2002),** San Juan Puerto, Rico, pp. 694-697 (22-25 April 2002).
69. **Invited Paper**, M.J. Deen, M. Kazemeini and S. Naseh, *Ultra-Low Power VCOs - Performance Characteristics and Modeling*, **Proceedings of the Third IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDCS - 2002),** Aruba, pp. C033-1 to C033-8 (17-19 April 2002).
70. **Invited Paper**, M.J. Deen and S. Rumyantsev, *Low Frequency Noise in CdSe Thin Film Transistors*, **Proceedings of the 16th International Conference on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2001**), Ed. G. Bosman, World Scientific, New Jersey, pp. 257-262 (Gainesville, Florida, October 22-25, 2001).
71. **Invited Paper**, O. Marinov and M.J. Deen, *Low Frequency Noise in Avalanche Breakdown on PN Junction Diodes*, **Proceedings of the 16th International Conference on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2001**), Ed. G. Bosman, World Scientific, New Jersey, pp. 181-186 (Gainesville, Florida, October 22-25, 2001).
72. **Invited Paper**, M.J. Deen and N.R. Das, *High Performance Photodetectors for Fiber-Optic Communications*, **SPIE Proceedings,** Bellingham, Washington, 11 pages (2001).
73. **Invited Paper**, M.J. Deen and N.R. Das, *Advanced Detectors for Fiber Communication Systems*, **Photonics 2000,** Calcutta, India, pp. 95-102 (20-22 December 2000).
74. **Invited Paper**, M.J. Deen, C.H. Chen, Y. Cheng and M. Matloubian, *RF Modeling of MOSFETs*, **Design, Modeling and Simulation in Microelectronics**, Proc. SPIE, Vol. 4228, Eds., B. Courtois, S. Demidenko and L.Y. Lau, pp. 138-152 (28-30 November 2000).
75. **Invited Paper**, M.J. Deen and C.H. Chen, *Scaling Issues in High Frequency Noise Modeling of MOSFETs*, **AIP Conference Proceedings 511 - Second International Conference on Unsolved Problems of Noise and Fluctuations (UPON 99)**, Editors, D.A. Abbott and L.B. Kish, Melville, NY, pp. 381-394 (2000).
76. **Invited Paper**, Y. Cheng, C.H. Chen, C. Enz, M. Matloubian and M.J. Deen, *MOSFET Modeling for RF Circuit Design*, **Proc. 2nd IEEE Int. Caracas Conf. on Devices, Cir. & Systems,** Cancun, Mexico, pp. D23-1 to D23-8 (March 2000).
77. **Invited Paper**, M.J. Deen, *High Frequency Noise Modeling of MOSFETs - Current Status and Outstanding Issues*, **2nd Int. Conf. on Unsolved Problems of Noise and Fluctuations**, Adelaide, Australia, pp. 72-85 (11-15 July 1999).
78. **Invited Paper**, M.J. Deen and S. Rumyantsev, *Low Frequency Noise in Polysilicon Emitter Bipolar Junction Transistors*, **Proceedings of the 15th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Ed. C. Surya, Bentham Press, London, pp. 47-53 (22-27 August 1999).
79. **Invited Paper**, M.J. Deen, R.H.S. Hardy and Y.G. Xiao, *Photodetectors for Fiber Optic Communication Systems*, **SPIE Conference Proceedings**, Vol. 3666, Eds. A. Sharma, B.D. Gupta and A.K. Ghatak, SPIE Press, Bellingham, Washington, pp. 386-395 (1999).
80. **Invited Paper**, M.J. Deen, *Low Frequency Noise in npn and pnp Polysilicon Emitter Bipolar Junction Transistors*, **Proceedings of the Quantum 1/f Noise & Other Low Frequency Fluctuations in Electronic Devices – 7th Symp., AIP Conf. Proceedings 466,** Eds. P. Handel and A. Chung, AIP Press, Woodbury, New York, pp. 105-122 (1999).
81. **Invited Paper**, M.J. Deen and R.H.S. Hardy, *Photodetectors for Fiber Optic Communication Systems*, **Proc. of Photonics -98, International Conference on Fiber Optics and Photonics**, Eds. A. Sharma and A. Ghatak, Viva Books, New Delhi, pp. 241-246 (14-18 December 1998).
82. **Invited Paper**, M.J. Deen, *Low Temperature MOS Microelectronics - Opportunities and Challenges*, **35th Annual Technical Meeting of the Society of Engineering Science - Symposium on Giga Scale Integration Technology**, Pullman, Washington, 13 pages (27-30 September 1998).
83. **Invited Paper**, S. An, M.J. Deen, A. Bandyopadhyay, W.R. Clark, A.S. Vetter, J. Yu, J.-P. Noel and M. Svilans, *Characterization of InP/InGaAs Avalanche Photodiodes for Optical Fiber Communications*, **Proc. Light Emitting Devices for Optoelectronic Applications and The 28th State-of-the-Art Program on Compound Semiconductors (PV 98-2)**, Eds., H.Q. Hou, R.E. Sah, S.J. Pearton, F. Ren, and K. Wada, Electrochemical Society Series, Penington, New Jersey, Proceedings Volume, pp. 249-264, (1998).
84. **Invited Paper**, M.J. Deen, *Gated Lateral Bipolar Transistors: Characteristics, Modeling and Applications*, **Proc. 2nd IEEE Int. Caracas Conf. on Devices, Circuits and Systems,** Margarita Island, Venezuela, pp. 22-32 (2-4 Mar. 1998).
85. **Invited Paper**, E.A. Gutierrez-D., A. Torres-J and M.J. Deen, *Silicon Radiation Detectors for Low Temp. Opto-Electronics*, **Proc. of the 4th Sym. on Low Temp. Elec. & High Temp. Superconductivity**, **Proc. Vol. 97-2**, Eds. C. Claeys, S. Raider, M.J. Deen, W. Brown & R. Kirschman, The Electrochem. Soc. Press, Penington, New Jersey, pp. 320-335 (1997).
86. **Invited Paper**, W.S. Kwan, A. Raychaudhuri, M.J. Deen and M.I.H. King, *Hot-Carrier Defect Length Propagation in*

LDD NMOSFETs, **Proceedings of the Fourth Symposium Silicon Nitride and Silicon Dioxide Thin Insulating Films**, Eds., M.J. Deen, W.D. Brown, S.I. Raider and K.B. Sundaram, Electrochemical Society Series, Penington, New Jersey, Proceedings Volume PV-97-10, pp. 242-258 (1997).

87. **Invited Paper**, M.J. Deen, *Analytical Modeling, Scaling and Bonding Pad Effects on the High Frequency Noise in Bipolar Junction Transistors*, **Proceedings of the 8th Asia Pacific Microwave Conference (APMC' 96), Ed. R.S. Gupta**, New Delhi, India, pp. 551-556 (17-20 December 1996).
88. **Invited Paper**, M.J. Deen *A New Gated Lateral pnp Bipolar Transistor Using 0.8μm BiCMOS Technology - Characteristics and Applications*, **Proc. 7th Int. Conf. Microelectronics (ICM '95)**, Kuala Lumpur, Malaysia, pp. 132-135 (19-21 Dec 1995).
89. **Invited Paper**, R. Murowinski, M.J. Deen and T. Hardy, *Charge Transfer Efficiency in Low Temperature CCDs*, **Proceedings of the Symposium on Low Temperature Electronics and High Temperature Superconductivity**, **Proceedings Volume 95-9**, Eds. C. Claeys, S.I. Raider, R. Kirschman and W.D. Brown, The Electrochemical Society Press, New Jersey, pp. 299-314 (1995).
90. **Invited Paper**, M.J. Deen and Z.X. Yan, *Low Temperature Characteristics of Gated LPNP Transistors*, **Proc. of the Symp. on Low Temperature Electronics and High Temp. Superconductivity**, **Proc. Vol. 95-9**, Eds. C. Claeys, S.I. Raider, R. Kirschman and W.D. Brown, The Electrochemical Society Press, New Jersey, pp. 369-382 (1995).
91. **Invited Paper**, R. Murowinski and M.J. Deen, *CCDs for the Lyman FUSE Mission*, **Applications of Photonics Tech.,** Eds., G.A. Lampropoulos, J. Chrostowski and R.M. Measures, Plenum Press, New York, pp. 191-196 (1995).
92. **Invited Paper**, M.J. Deen, A. Raychaudhuri, *Charge Pumping, Low Freq. Noise and Floating Gate Characterization Techniques of SiO_2 Gate Insulators in MOSFETs*, **Proc. of the 3rd Sym. on Silicon Nitride and SiO_2 Thin Insulating Films, Proc. Vol. 94-16**, Eds. V.J. Kapoor, W.D. Brown, The Electrochem. Soc. Press, N, pp. 375-384 (1994).
93. **Invited Paper**, M.J. Deen, *D.C. and Low Frequency Noise Characteristics of Resonant Tunneling Diodes*, **Proc. of the Sym. on Low Temperature Electronics and High Temperature Superconductivity Proc. Vol. 93-22**, Editors, S. Raider, C. Claeys, D. Foty, and T. Kawai, Electrochemical Society Press, Penington, New Jersey, pp. 191-208 (1993).
94. **Invited Paper**, M.J. Deen, *Low Temperature Microelectronics: Opportunities and Challenges*, **Proceedings of the Symposium on Low Temperature Electronic Device Operation (Proceedings Volume 91-14)**, Editors, D. Foty, N. Saks, S. Raider and G. Oleszek, Electrochemical Society Press, Penington, New Jersey, pp. 25-38 (1991).

Conference Papers

- **Total Contributed Refereed Conference Publications – 150**

95. Z. Liu, K. Zhang, Y. Liu, S. Yan, H. S. Kwok, J. Deen, and X. Sun, "*Fully Multi-Functional GaN-based Micro-LEDs for 2500 PPI Micro-displays, Temperature Sensing, Light Energy Harvesting, and Light Detection*," **IEDM Technical Digest**, Paper 38.1, 4 pages (Wednesday 5 December 2018).
96. A.Y. Elsharabasy, M.H. Bakr and M.J. Deen, "*Adjoint-Based Design of a Crossed-Ellipse Absent THz Filter*," **2018 18th International Symposium on Antenna Technology and Applied Electromagnetics (ANTEM)**, Waterloo, Ontario, Canada, pp. 1-3, (19-22 August 2018).
97. X. Chen, C.H. Chen and M.J. Deen, "*Short noise suppression factor for nano-scale MOSFETs working in the saturation region*," **IEEE Proceedings of the International Conference on Noise and Fluctuations** (**ICNF 2017**), Vilnius, Lithuania, 4 pages, (20-23 June 2017).
98. A.Y. Elsharabasy, E.A. Soliman, M.H. Bakr and M.J. Deen, "*Nano crescent antenna with variable axial ratio for energy harvesting applications*," **Photonics North**, Quebec City, Quebec, Canada, pp. 1-2 (24-26 May 2016).
99. E.Y. Jeong, Y.H. Jeong, C.H. Chen and M.J. Deen, "*DC and Thermal Noise Modeling of 20 nm Junctionless DG MOSFETs*," **22nd Int. Conference on Noise and Fluctuations,** Montpellier, France, 4 pages (24-28 June 2013).
100. H. Alhemsi, Zhiyun Li and M.J. Deen, *Time-Resolved Near-Infrared Spectroscopic Imaging Systems*, **Second Saudi International Electronics, Communications and Photonics Conference** (**SIECPC**), Riyadh, Saudi Arabia, 6 pages, (27-30 April 2013).
101. H. Kassiri Bidhendi and M. Deen, *Low Power Highly Linear Inductorless UWB CMOS Mixer with Active Wideband Input Balun*, **IEEE Int'l Wireless Symposium** (**IWS** – Session MO1D), Beijing, China, 4 pages, (14-18 April 2013).
102. O. Marinov and M.J. Deen, *Flicker Noise due to Variable Range Hopping in Organic Thin-Film Transistors*, **21st International Conference on Noise and Fluctuations** (**ICNF 2011**), Toronto, Canada, 4 pages (12-16 June 2011).
103. M.J. Deen, S. Majumder, O. Marinov, and M.M. El-Desouki, *Random Telegraph Signal Noise in CMOS Active Pixel Sensor*, **21st International Conference on Noise and Fluctuations** (**ICNF 2011**), Toronto, Canada, 4 pages (12-16 June 2011).
104. O. Marinov and M.J. Deen, *Frozen Noise Origin of Temporal Low-Frequency Noise in Electronic Devices*, **21st International Conference on Noise and Fluctuations** (**ICNF 2011**), Toronto, Canada, 4 pages (12-16 June 2011).

105. H. Wang, H-S Choi, N. Agoulmine, M.J. Deen and J.W-K Hong, *Information-based Energy Efficient Sensor Selection in Wireless Body Area Networks*, **IEEE International Conference on Communications - Symposium on Selected Areas in Communications e-Health Track (ICC2011 - SAC EH),** 6 pages, Kyoto, Japan, 6 pages (5-9 June 2011).
106. K. M. Awawdeh, J.A. Jiménez Tejada, J.A. López Villanueva, J. Carceller, M.J. Deen, N. B. Chaure, T. Basova and Asim Ray, *Compact modeling of the contact effects in organic thin film transistors*, **2011 IEEE Spanish Conference on Electron Devices**, Mallorca, Spain, 2 pages (9-11 February 2011).
107. Hui Wang, Hyek-soo Choi, Nazim Agoulmine, M. Jamal Deen, James Hong, *Information-Based Sensor Tasking Wireless Body Sensor Networks in Healthcare Systems*, **2010 IEEE International Conference on Network and Service Management** (**CNSM**), Niagara Falls, Ontario, Canada, 6 pages (25-29 October 2010).
108. Nazim Agoulmine, Hui Wang, Jamal Deen, James W. Hong, Hyeok-Soo Choi, Jin Kim, *POSTECH's U-Health Smart Home For Elderly Monitoring and Support*, Second **International IEEE WoWMoM Workshop on Interdisciplinary Research on E-Health Services and Systems**, Montreal, Canada, 8 pages (14June 2010).
109. M. Dadkhah; S. Shirani and M.J. Deen; *Compressive Sensing with Modified Total Variation Minimization Algorithm*, **35th International Conference on Acoustics, Speech, and Signal Processing (ICASSP),** pp. 1310-1313, Dallas, Texas (14-19 March 2010).
110. Munir EI-Desouki, M. Jamal Deen, Shahram Shirani, Shahin Sirouspour, Frances Tse, David Armstrong, and Qiyin Fang, Integrated *CMOS Sensors for Fluorescence Spectroscopy and Imaging*, **IEEE/OSA Asia Communications and Photonics Conference and Exhibition**, Shanghai, China, 2 pages, (2 – 6 November 2009)
111. M.J. Deen and O. Marinov, *Low-Frequency Noise in Electronic Devices – Past, Present and Future*, **20th International Conference on Noise and Fluctuations – AIP Conference Proceedings, Vol. 1129,** Melville, New York, Eds. M. Macucci and G. Basso, pp.197-200 (14-19 June 2009).
112. O. Marinov and M.J. Deen, *Impurity Dispersion and Low-Frequency Noise in Nanoscale MOS Transistors*, **20th International Conference on Noise and Fluctuations – AIP Conference Proceedings, Vol. 1129,** Melville, New York, Eds. M. Macucci and G. Basso, pp.273-276 (14-19 June 2009).
113. V. Subramanian, M. Jamal Deen, and G. Boeck, *Systematic Design and Development Procedures for a Successful CMOS LNA Implementation*, **Asia-Pacific Microwave Conference (APMC2008),** Hong Kong, (December 2008)
114. V. Subramanian, M. Krcmar, M.J. Deen, G. Boeck, *A 6 GHz Bipolar Low Noise Amplifier with Simplified Matching Circuitries*, **Proceedings of the First European Wireless Technology (EuWiT) Conference**, pp. 17-20 (Oct. 2008).
115. M. Krcmar, V. Subramanian, M.J. Deen, and G. Boeck, *High Gain Low Noise Folded CMOS Mixer*, **Proceedings of the First European Wireless Technology (EuWiT) Conference,** Amsterdam, Netherlands, pp. 13-16, (Oct. 2008).
116. Naser Faramarzpour, M. Jamal Deen and Shahram Shirani, *High Sensitivity, High Speed Imaging Components for Biomedical Applications*, **21st Canadian Conference on Electrical and Computer Engineering,** Niagara Falls, Ontario, 4 pages (4-7 May 2008).
117. M.H. Bakr, K. Wang, and M.J. Deen, "*Accuracy improvement of magnetic tracking systems using ANNs and space mapping modeling*," **The 24th Int. Review of Progress in Applied Computational Electromagnetics (ACES 2008)**, pp. 603–608, Niagara Falls (March 2008).
118. M.J. Deen, O. Marinov and Y. Kiyota, *Low-Frequency Noise in RF nMOS Transistors from a 70 nm CMOS Technology*, **19th International Conference on Noise and Fluctuations – AIP Conference Proceedings, Vol. 922,** Melville, New York, Eds. M. Tacano, Y Yamamoto and M. Nakao, pp.129-132 (9-14 September 2007).
119. **Outstanding Student Paper Award - IEEE Electron Devices Society's 2006-07 Region 9 Competition,** Fernando deSouza Campos, Ognian Marinov, Naser Faramarzpour, Fayçal Saffih, M.J. Deen, J. W. Swart, *A Multi-Sampling CMOS Imager with Synchronous Readout Circuit*, **20th Symposium on Integrated Circuits and Systems Designs** (**SBCCI 2007**), Rio de Janeiro, Brazil, pp. 53-58 (3-6 September 2007).
120. Y. Kiyota, C - H. Chen, T. Kubodera, A. Nakamura, K. Fukushima, K. Takeshita, and M.J. Deen, *A New Approach of High Frequency Noise Modeling for 70-nm NMOS by Accurate Noise Source Extraction*, **IEEE Radio Frequency Integrated Circuits Symposium** (**RFIC-2007**), Honolulu, Hawaii, pp. 635-638 (3-8 June 2007).
121. J.A. Jimenez Tejada, M.J. Deen, P.L. Bullejos, J.A.L. Villanueva, F.M. Gomez-Campos, S. Rodriguez-Bolivar, *Characterization of Impurities in GaInNAs pn Junctions from Capacitance Transient Spectroscopy*, **2007 IEEE Spanish Conference on Electron Devices (IEEE Conferencia De Dispositivos Electronicos)**, Madrid, Spain, pp. 139-142 (31 January – 2 February 2007).
122. W.H. Jiang, D. Landheer, G. Lopinski, A. Rankin, N.G. Tarr, and M.J. Deen, *Post-processing of Commercial CMOS Chips for the Fabrication of DNA Bio-FET Sensor Arrays*, **Proceedings of the Materials Research Society Symposium - Fall Meeting**, Boston, Mass., Vol. xxx, 6 pages (27 November – 1 December 2006).
123. M.R. Howlader, T. Suga, M.J. Kim, N. Itoh, J. Deen and P. Mascher, *A Novel Method for Bonding of Ionic Wafers*, **Proceedings of the 56th IEEE 2006 Electronic Components and Technology Conference**, pp. 552-558 (2006).
124. Samar M. Abdelsayed, Natalia K. Nikolova and M. Jamal Deen, *Radiation Characteristics of Loop Antennas for*

Biomedical Implants, **Proceedings of the XXVII General Assembly of the International Union of Radio Science (URSI) General Assembly**, New Delhi, India, 4 pages (23 - 29 October 2005).

125. H.M. Jafari, M.J. Deen, S. Hranilovic and N. K. Nikolova, *Slot Antenna for Ultra-wideband Applications*, **IEEE International Symposium of the Antennas and Propagation Society**, pp. 1107-1110 (9-14 July 2006)
126. S. Asgaran, M.J. Deen and C-H. Chen, *An Analytical Method to Determine MOSFET's High Frequency Noise Parameters from 50 Ohm Noise Figure Measurements*, **IEEE Radio Frequency Integrated Circuits Symposium** (**RFIC-2006**), San Francisco, California, pp. 341-345 (11-13 June, 2006).
127. W. Liu, H.M. Jafari, S. Hranilovic and M.J. Deen, *Time Domain Analysis of UWB Breast Cancer Detection*, **IEEE 23rd Biennial Symposium on Communications**, Kingston, Ontario, pp. 336-339 (29May – 1 June 2006).
128. S.M. Abdelsayed, M.J. Deen and N.K. Nikolova, *A Fully Integrated Low-Power CMOS Power Amplifier for Biomedical Applications*, **European Conf. on Wireless Technology**, Paris France, pp. 1715-1718 (3-4 October 2005).
129. Munir M. El-Desouki, M. Jamal Deen and Yaser M. Haddara, *A Low-Power CMOS Class-E Power Amplifier for Biotelemetry Applications*, **35th European Microwave Conference**, Paris, France, pp. 441-444 (6-8 October 2005).
130. S. Soliveres, A. Hoffmann, F. Pascal, C. Delseny, A. Salasse, M.S. Kabir, S. Bengtsson, O. Nur, M. Wilander and M.J. Deen, *Low-Frequency Noise in Contacted Single-Wall Carbon Nanotube*, **Proc. of the 18th Int. Conf. on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2005**), Salamanca, Spain, pp. 462-265 (19-23 September 2005).
131. Rizwan Murji and M. Jamal Deen, *Noise Contributors in a Low Power VCO with Automatic Amplitude Control*, **IEEE Radio-Frequency Integrated Circuits Symposium**, Long Beach, CA, USA, pp. 407-410 (June 12-14, 2005).
132. Rizwan Murji and M. Jamal Deen, *Design Issues of a Low Power Wideband Frequency Doubler Implementation in 0.18 μm CMOS*," **2005 IEEE Int. Sym. on Circuits and Systems**, Kobe, Japan, pp. 4353-4356 (May 23-26, 2005).
133. S. Asgaran, M.J. Deen, and C-H. Chen, *Analytical Modeling of MOSFET Noise Parameters for Analog and RF Applications***, IEEE Custom Integrated Circuits Conference (CICC '04)**, pp. 379-382 (3-6 October 2004).
134. S. Asgaran and M.J. Deen, *A Novel Gain Boosting Technique for Design of Low Power Narrow-Band RFCMOS LNAs*, **The 3rd Int. IEEE Workshop on Circuits and Systems**, Montreal, Canada, pp. 293-296 (19-22 June 2004).
135. R. Murji and M.J. Deen, *A Low-Power, 10 GHz Back-Gated Tuned Voltage Controlled Oscillator with Automatic Amplitude and Temperature Compensation*, **2004 IEEE Int. Symposium on Circuits and Systems (ISCAS 2004)**, Vancouver, BC, Canada, pp. IV 421- IV 424 (23-26 May 2004).
136. **Best Student Paper Award,** Yasaman Ardeshirpour, M. Jamal Deen and Shahram Shirani, *2-D CMOS-Based Image Sensor System for Fluorescent Detection*, **Proc. of the Canadian Conf. on Elec. & Comp. Eng.**, Niagara Falls, ON, pp. 1441-1444 (2-5 May 2004).
137. Nabeel Jafferali and M. Jamal Deen, *Low-Voltage and Low-Power 1.9GHz Body-Input Down-Conversion Mixer*, **Proc. of the Canadian Conf. on Elec. & Comp. Eng.**, Niagara Falls, ON, pp. 1413-1416 (2-5 May 2004).
138. Ahmed Fakhr, M. Jamal Deen and H. deBruin, *Low-Voltage, Low-Power and Low Phase Noise 2.4GHz VCO for Wireless Telemetry*, **Proceedings of the Canadian Conference on Electrical & Computer Engineering**, Niagara Falls, Ontario, Canada, pp. 1321-1324 (2-5 May 2004).
139. Naser Faramarzpour, Shahram Shirani and M. Jamal Deen, *Lossy Compression of DNA Microarray Images*, **Proc. of the Canadian Conf. on Elec. & Comp. Eng.**, Niagara Falls, ON, pp. 735-738 (2-5 May 2004).
140. M. Jamal Deen, O. Marinov, D. Onsongo, S. Dey and S. Banerjee, *Low-Frequency Noise in SiGeC-Based pMOSFETs*, **SPIE - Noise in Devices and Circuits**, Vol. 5470, Eds. F. Danneville, M.J. Deen and M.E. Levinhstein, pp. 215-225, Gran Canaria, Spain (26-28 May 2004).
141. Sasan Naseh and M. Jamal Deen, *Effects of Hot-Carrier Stress on the Performance of CMOS Low Noise Amplifier*, **IEEE Int. Reliability Physics Symp.**, Phoenix, Arizona, pp. 417-421 (April, 2004).
142. C. Chay, S.-G. Jarrix, C. Delseny, F. Pascal, P. Benoit, M.J. Deen, P. Llinares, *The Influence of Electrical Stresses on SiGe Heterojunction Bipolar Transistors***, Proceedings of the 17th International Conference on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2003**), Prague, Czech Republic, pp. 389-392 (18-22 August 2003).
143. M. Marin, M.J. Deen, and P. Llinares and J.-C. Vildeuil, *Low Frequency Noise Study in* 0.13 μ*m Body Biased MOSFET's***, Proceedings of the 17th International Conference on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2003**), Prague, Czech Republic, pp. 309-312 (18-22 August 2003).
144. A. Hoffmann, F. Pascal, C. Delseny, J. Deen, M. Valenza and S. Soliveres, *Low Frequency Noise in Carbon Nanotube Structures*, **Proceedings of the 17th International Conference on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2003**), Prague, Czech Republic, pp. 149-152 (18-22 August 2003).
145. R. Murji and M.J. Deen, *A 1.8V Monolithic CMOS Nested-Loop Frequency Synthesizer for GSM Receivers at 1.8GHz*, **IEEE Radio Freq. Int. Circuits Sym. (RFIC 2003),** Philadelphia, Pennsylvania, pp. 291-294 (June 8 - 10, 2003).
146. **Best Student Paper Award,** M. Marin, J. Deen, M. de Murcia, P. Llinares and J.-C. Vildeuil, *Effects of Body Biasing on the Low Frequency Noise Behavior of NMOSFETS From a 130-nm CMOS Technology*, **SPIE - Noise in Devices and Circuits**, Vol. 5113, Eds. M.J. Deen, Z. Celik-Butler and M.E. Levinhstein, pp. 56-65, Santa Fe, New Mexico (1-4

June 2003).

147. O. Marinov and M.J. Dee, *Physical Model for Low Frequency Noise in Avalanche Breakdown of PN Junction*, **SPIE - Noise in Devices and Circuits**, Vol. 5113, Eds. M.J. Deen, Z. Celik-Butler and M.E. Levinhstein, pp. 484-493, Santa Fe, New Mexico (1-4 June 2003).
148. M.J. Deen, M. H. Kazemeini and S. Naseh, *Performance Characteristics of an Ultra-Low Power VCO*, **2003 IEEE Int. Symposium on Circuits and Systems (ISCAS 2003)**, Bangkok, Thailand, pp. I697-I700 (25-28 May 2003).
149. M.H. Kazemeini, M.J. Deen and S. Naseh, *Phase Noise in a Back-Gate Biased Low-Voltage VCO*, **2003 IEEE Int. Symposium on Circuits and Systems (ISCAS 2003)**, Bangkok, Thailand, pp. I701-I704 (25-28 May 2003).
150. Z. Wang, M.J. Deen and A. Rahal, *Accurate Modelling of Thin-Film Resistor up to 40 GHz*, **32nd European Solid-State Device Research Conf. (ESSDERC 2002)**, Firenze, Italy, pp. 307-310 (24-26 Sept. 2002).
151. G.D. Duerden, G.W. Roberts and M. Jamal Deen, *A 10 MHz Elliptic Log Domain Filter In a Standard CMOS Process*, **2002 IEEE Int. Symposium on Circuits and Systems**, Scottsdale Arizona, pp. 5-8 (26- 29 May 2002).
152. S. Naseh, M.J. Deen and O. Marinov, *Effects of Hot-Carrier Stress on the RF Performance of 0.18 μm Technology NMOSFETs and Circuits*, **IEEE Int. Reliability Physics Symp.**, Dallas, Texas, pp. 119-123 (7-11 April, 2002).
153. M. Sanden, F. Jonsson, M. Ostling, O. Marinov and M.J. Deen, *Up-Conversion of 1/f Noise to Phase Noise in Voltage Controlled Oscillators*, **Proc. of the 16th Int. Conf. on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2001**), Ed. G. Bosman, World Scientific, New Jersey, pp. 499-502 (Gainesville, Florida, October 22-25, 2001).
154. O. Marinov, M.J. Deen, J. Yu, S. Holdcroft and W. Woods, *Low Frequency Noise in Polymer Transistors with Non-Stationary Mobility*, **Proceedings of the 16th Int. Conf. on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2001**), Ed. G. Bosman, World Scientific, New Jersey, pp. 277-280 (Gainesville, Florida, October 22-25, 2001).
155. M. Sanden, M. Ostling, O. Marinov, M.J. Deen, *Modeling the Level and Variation in the Low Freq. Noise in Polysilicon Emitter Bipolar Transistors*, **Proc. 16th Int. Conf. on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2001**), Ed. G. Bosman, World Scientific, New Jersey, pp. 205-208 (Gainesville, FL, Oct. 22-25, 2001).
156. M.J. Deen and O. Marinov, *Effect of Forward and Reverse Substrate Biasing on Low Frequency Noise in Silicon PMOS FETs*, **Proceedings of the 16th International Conference on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2001**), Ed. G. Bosman, World Scientific, New Jersey, pp. 141-144 (Gainesville, Florida, October 22-25, 2001).
157. C.H. Chen, M.J. Deen, Y. Cheng and M. Matloubian, *High Frequency Noise of MOSFETs*, **Proceedings of the 16th International Conference on Noise in Physical Systems and 1/f Fluctuations** (**ICNF 2001**), Ed. G. Bosman, World Scientific, New Jersey, pp. 181-184 (Gainesville, Florida, October 22-25, 2001).
158. G.D. Duerden, G.W. Roberts and M. Jamal Deen, *The Development of Bipolar Log Domain Filters in a Standard CMOS Process*, **2001 IEEE International Symposium on Circuits and Systems (ISCAS 2001)**, Sydney, Australia, Vol. 1, pp. 145-148 (May 6 - 9, 2001).
159. C.H. Chen, M.J. Deen, M. Matloubian and Y. Cheng, *Intrinsic Noise Currents in Deep Submicron MOSFETs*, **International Microwave Symposium (IEEE MTT-S)**, Phoenix, Arizona, 4 pages (20-25 May 2001).
160. C.H. Chen, M.J. Deen, M. Matloubian and Y. Cheng, *Extraction of the Induced Gate Noise, Channel Thermal Noise and Their Correlation in Sub-Micron MOSFETs From RF Noise Measurements*, **IEEE International Conference on Microelectronic Test Structures (ICMTS '2001)**, Kobe, Japan, pp. 131-135 (19-22 March 2001).
161. C.H. Chen and M.J. Deen, *A General Procedure for High Frequency Noise Parameter De-Embedding of MOSFETs Taking the capacitive Effects of Metal Interconnections into Account*, **IEEE International Conference on Microelectronic Test Structures (ICMTS '2001)**, Kobe, Japan, pp. 109-114 (19-22 March 2001).
162. S. Naseh, M.J. Deen, O. Marinov, *Effects of Electrical Stresses on the Radio Freq. Performance of 0.18 μm Tech. MOSFETs*, **IEEE Int. Conf. on Microelec. Test Structures (ICMTS)**, Kobe, Japan, pp. 119-123 (Mar. 2001).
163. N.R. Das and M.J. Deen, *A Time Domain Model for an Avalanche Photodiode at Low Bias*, **SPIE Proceedings,** Bellingham, Washington, 8 pages (2001).
164. M.J. Deen, S.L. Rumyantsev, I. Glick, A. Smozh, M. Westcott and D. Waechter, *Low Frequency Noise in CdSe Thin Film Transistors*, **Proc. of the Thin Film Transistor Technologies TFTT-V**, Eds., Y. Kuo, D.G. Ast, M. Hack, J. Jang, E. Lueder, M. Matsumura, S. Brotherton, F. Okumura, T. Minemura, K.B. Sundaram, Electrochem. Soc. Proc. Vol., Penington, NJ, 9 pages, (2001).
165. Y. G. Xiao and M. Jamal Deen, A *Theoretical Approach to the Frequency Response of Resonant Cavity Avalanche Photodiodes*, **Photonics West 2001**, **Photodetectors: Materials and Devices VI**, Proc. SPIE Vol. 4288, Eds. G.J. Brown and M. Razeghi; San Jose, CA, pp. 21-30 (20-26 January 2001).
166. Y. G. Xiao and M. Jamal Deen, *Time Domain Modeling of InP/InGaAs Avalanche Photodiodes*, **Photonics West 2001**, **Photodetectors: Materials and Devices VI**, Proc. SPIE Vol. 4288, Eds. G.J. Brown and M. Razeghi; San Jose, CA, pp. 85-93 (20-26 January 2001).
167. N.R. Das, P.K. Basu and M.J. Deen, *Design of HEMT and HBT Preamplifiers for Maximum Gain-Bandwidth of MSM Based Integrated Photoreceivers*, **Photonics 2000 – Int. Conf. on Fiber Optics and Photonics,** Proc. SPIE Vol. 4417,

Eds. S.K. Lahiri; R. Gangopadhyay; A. Datta; S. Ray; B.K. Mathur; S. Das, Calcutta, pp. 358-365 (20-22 Dec. 2000).

168. N.R. Das and M.J. Deen, *A Time Domain Model for an Avalanche Photodiode at Low Bias*, **Photonics 2000,** Calcutta, India, pp. 111-114 (20-22 December 2000).
169. C.H. Chen, M.J. Deen, M. Matloubian and Y. Cheng, *Channel Noise Current in Deep Sub-Micron MOSFETs*, **30th European Solid-State Device Research Conf. (ESSDERC 2000)**, Cork, Ireland, pp. 508-511 (11 - 13 Sept. 2000).
170. M.J. Deen, S.L. Rumyantsev, D. Landheer and D.-X. Xu, *Low Frequency Noise in CdSe Thin-Film Transistors*, **30th European Solid-State Device Research Conf. (ESSDERC 2000)**, Cork, Ireland, pp. 592-595 (11 - 13 Sept. 2000).
171. M. Margarit and M.J. Deen, *A Low Power High Spectral Purity Frequency Translational Loop for Wireless Applications*, **IEEE Custom Int. Cir. Conf. (CICC 2000)**, Lake Buena Vista, FL, pp. 593- 596 (21-24 May 2000).
172. F. Javier De la Hidalga-W., M.J. Deen, *The Dynamic Threshold Voltage MOSFET*, **Proc. of the 2nd IEEE Int. Caracas Conf. on Devices, Circuits and Systems (ICCDCS - 2000),** Cancun, Mexico, pp. D63-1 to D63-7 (15-17 Mar. 2000).
173. M.J. Deen and C.H. Chen M. Matloubian and Y. Cheng, *Extraction of the Channel Thermal Noise*, **IEEE Int. Conf. on Microelectronic Test Structures (ICMTS '2000)**, Monterey, California, pp. 42-47 (March 2000).
174. F. J. De la Hidalga-W., M.J. Deen, E.A. Gutierrez-D., and F. Balestra, *Effects of Forward Biasing the Substrate on n-MOSFETS at Temperatures Between 5K and 300K*, **Proc. of 1999 International Semiconductor Device Research Symposium (ISDRS '99)**, Charlottesville, Virginia, pp. 445-448 (1-3 December 1999).
175. M.J. Deen, C.H. Chen, M. Matloubian and Y. Cheng, *Channel Thermal Noise Extraction and Model Verification of MOSFETs*, **Proc. of 1999 International Semiconductor Device Research Symposium (ISDRS '99)**, Charlottesville, Virginia, pp. 85-88 (1-3 December 1999).
176. X.Y. Chen and M.J. Deen, *Low Frequency Noise of High Speed, High Performance 1.3 μm Strained MQW Gain-Coupled DFB Lasers*, **Proc. of 1999 International Semiconductor Device Research Symposium (ISDRS '99)**, Charlottesville, Virginia, pp. 169-172 (1-3 December 1999).
177. M.J. Deen, M.E. Levinshtein, S. Rumyantsev and J. Orchard-Webb, *Generation-Recombination Noise in MOSFETs*, **Proceedings of the 15th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Ed. C. Surya, Bentham Press, London, pp. 54-57 (22-27 August 1999).
178. M.J. Deen, M.E. Levinshtein, S. Rumyantsev, M. Schroter and Z.X. Yan, *Origin of Low Frequency Noise in Polysilicon Emitter Bipolar Transistors*, **Proceedings of the 15th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Ed. C. Surya, Bentham Press, London, pp. 80-83 (22-27 August 1999).
179. M.A. Margarit, J.L. Tham, M.J. Deen and R.G. Meyer, *Noise Analysis of a VCO with Automatic Amplitude Control*, **IEEE Custom Integrated Circuits Conference (CICC '99)**, pp. 381-384 (1999).
180. M.J. Deen and C.H. Chen, *The Impact of Noise Parameter De-embedding on the HF Noise Modeling of MOSFETs*, **IEEE Int. Conf. on Microelec. Test Structures (ICMTS '99)**, Goteborg, Sweden, pp. 34-39 (15-18 March 1999).
181. X.Y. Chen, M.J. Deen, A.D. van Rheenen, Z.X. Yan and M. Schroter, *Low Frequency Noise in npn and pnp Double Polysilicon BJTs, Effects of Temperature and Emitter Dimensions*, **International Electron Devices and Materials Symposium (IEDMS '99)**, Tainan, Taiwan, 4 pages (20-23 December 1998).
182. X. Jin, J-J. Ou, C.H. Chen, W. Liu, M.J. Deen, P.R. Gray and C. Hu, *An Effective Gate Resistance Model for CMOS RF and Noise Modeling*, **Int. Electron Device Meeting (IEDM),** San Francisco, pp. 981-984 (December 1998).
183. Y. Xiao, M.J. Deen and A. Bandyopadhyay, *Time Domain Modeling of Temperature Dependent Characteristics of InP/InGaAs Avalanche Photodiodes Based on a Simplified Approach*, **Proc. Light Emitting Devices for Optoelectronic Applications and The Twenty-Eight State-of-the-Art Program on Compound Semiconductors (PV 98-2)**, Eds., H.Q. Hou, R.E. Sah, S.J. Pearton, F. Ren, and K. Wada, Electrochemical Society Series, Penington, New Jersey, Proceedings Volume, pp. 293-304, (1998).
184. S. An, W.R. Clark, M.J. Deen, A.S. Vetter and M. Svilans, *Ionization Coefficient Measurements in InP by Using Multiplication Noise Characteristics in InP/InGaAs Separate Absorption, Grading, Charge and Multiplication (SAGCM) Avalanche Photodiodes (APDs)*, **Photonics West '98, Proc. SPIE, Vol. 3287, Photodetectors: Materials and Devices III**, Eds. G.J. Brown and M. Razeghi, pp. 48-59 (Jan. 1998).
185. T. Hardy, R. Murowinski and M.J. Deen, *The Effect of Proton Radiation on the Charge Transfer Efficiency in CCDs*, **Proceedings of the ESO Workshop - Optical Detectors for Astronomy**, Eds., J.W. Beltic and P. Amico, Kluwer Academic Press Series, pp. 223-230 (1998).
186. A. Bandypadhyay, M.J. Deen, L.E. Tarof, A. Vetter and W. Clark, *A Unified Approach for the Modeling of SAGCM InGaAs/InP Avalanche Photodiodes*, **Proc. of 1997 International Semiconductor Device Research Symposium (ISDRS '97)**, Charlottesville, Virginia, pp. 363-366 (11-13 December 1997).
187. W.S. Kwan, C.H. Chen and M.J. Deen, *Hot-Carrier Effects on the High Frequency Performance of 0.8 μm LDD NMOSFETs*, **Proc. of 1997 International Semiconductor Device Research Symposium (ISDRS '97)**, Charlottesville, Virginia, pp. 195-198 (11-13 December 1997).
188. E.A. Gutierrez-D., J. De La Hidalga, M.J. Deen and S.V. Koshevaya, *An Alternative Method to Monitor and Control*

the IC Temperature in the 4.2-77K Range, **Proceedings of the 27th European Solid-State Device Research Conference, Bologna, Italy (ESSDERC '97)**, pp. 436-439 (September 1997).

189. C.H. Chen, M.J. Deen, *Direct Calculation of the MOSFET High Frequency Noise Parameters*, **Proceedings of the 14th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Leuven, Belgium, Eds. C. Claeys and E. Simoen, World Scientific Publishing, Singapore, pp. 436-439 (14-18 July, 1997).
190. P. Kolev, M.J. Deen, H. C. Liu, J. M. Li, M. Buchanan and Z. R. Wasilevski, *Asymmetry in the Dark Current Low Frequency Noise Behavior of Quantum Well Infrared Photodetectors (QWIPs)*, **Proceedings of the 14th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Leuven, Belgium, Eds. C. Claeys and E. Simoen, World Scientific Publishing, Singapore, pp. 521-524 (14-18 July, 1997).
191. C.W. Chu, M.J. Deen and R.H. Hill, *Novel Amorphous $MoW_{20}O_{20}$ and MoW_8O_{11} Sensors Made Photochemically at Room Temperature for sub-ppm NO_2 Detection*, **International Conference on Solid-State Sensors and Actuators** (**Transducers '97**), Chicago, Illinois, pp. 589-590 (16-19 June 1997).
192. A. Bandyopadhyay, S. An, M.J. Deen and L.E. Tarof, *Modeling of Breakdown Voltage of InP/In GaAs Avalanche Photodiodes at Low Temperatures*, **Proceedings of the Fourth Symposium on Low Temperature Electronics and High Temperature Superconductivity**, **Proceedings Volume 97-2**, Eds. C. Claeys, S.I. Raider, M.J. Deen, W.D. Brown & R. K. Kirschman, The Electrochemical Society Press, Penington, New Jersey, pp. 378-386 (1997).
193. P. Kolev and M.J. Deen, *Constant Resistance DLTS in Submicron MOSFETs*, **Proc. of the 4th Sym. on Low Temp. Electronics and High Temperature Superconductivity**, **Proceedings Volume 97-2**, Eds. C. Claeys, S.I. Raider, M.J. Deen, W.D. Brown and R. K. Kirschman, The Electrochemical Society Press, New Jersey, pp. 147-158 (1997).
194. P. Kolev, M.J. Deen, and N. Alberding, *Digital Averaging and Recording of DLTS Signals*, **Proceedings of the Symposium on Diagnostic Techniques for Semiconductor Materials and Devices, Proc. Volume 97-12**, Eds. P. Rai-Choudhury, J. Benton and D. Schroder, The Electrochemical Society Press, New Jersey, pp. 377-388 (1997).
195. P. Kolev, T. Hardy, M.J. Deen and R. Murowinski, *The Use of Constant Resistance DLTS to Study Proton Radiation Damages in CCD Output MOSFETs*, **Proceedings of the Symposium on Diagnostic Techniques for Semiconductor Materials and Devices, Proceedings Volume 97-12**, Eds. P. Rai-Choudhury, J. Benton and D. Schroder, The Electrochemical Society Press, New Jersey, pp. 389-399 (1997).
196. M.J. Deen, *Issues in Modeling the High Frequency Noise Parameters of Polysilicon Emitter Bipolar Junction Transistors*, **Proceedings of the First International Conference on Unsolved Problems of Noise (UPON '96)**, Szeged, Hungary, Eds. C.R. Doering, L. Kiss and M. Schlesinger, World Scientific Press, pp. 199-204 (1997).
197. E.A. Gutierrez, S.V. Koshevaya and M.J. Deen, *A 4.2K CMOS Compatible Wide-Spectrum Detector*, **Proceedings of the 26th European Solid-State Device Research Conference, Bologna, Italy (ESSDERC '96)**, Eds., G. Baccarani and M. Rudan, Editions Frontiers, France, pp. 383-386 (9-11 September 1996).
198. S. An, M.J. Deen and L. Tarof, *Temperature Dependence of the Breakdown and Punchthrough Voltages, and Ionization Coefficients in SAGCM InP/InGaAs Photodiodes*, **Proceedings of the 26th European Solid-State Device Research Conference, Bologna, Italy (ESSDERC '96)**, Eds., G. Baccarani and M. Rudan, Editions Frontiers, France, pp. 7812-784 (9-11 September 1996).
199. A. Raychaudhuri, W.S. Kwan, M.J. Deen and M.I.H. King, *Propagation of Defects in Hot-Carrier Degradation of LDD NMOSFETs - From the Early Mode to the Late Mode*, **Proc. of 1995 International Semiconductor Device Research Symposium (ISDRS '95)**, Charlottesville, Virginia, pp. 781-784 (6-8 December 1995).
200. C.L.F. Ma, M.J. Deen and L. Tarof, *Multiplication in InP/InGaAs Avalanche Photodiodes*, **25th European Solid- State Device Research Conference (ESSDERC '95)**, The Hague, Nederland, pp. 765-768 (25-27 September 1995).
201. M.J. Deen and Z.X. Yan, *Low Temperature Characteristics of Gated Lateral PNP Transistors*, **25th European Solid-State Device Research Conf. (ESSDERC '95)**, The Hague, Nederland, pp. 643-646 (25-27 September 1995).
202. A. Raychaudhuri, M.J. Deen, M.I.H. King, and J. Kolk, *A Simple Method to Extract the Parasitic Resistances from a Single MOSFET Using Measurements of Small-Signal Conductances*, **25th European Solid-State Device Research Conference (ESSDERC '95)**, The Hague, Nederland, pp. 749-752 (25-27 September 1995).
203. M.J. Deen, J. I. Ilowski and P. Yang, *The Effect of Emitter Geometry and Device Processing on the Low Freq. Noise of Polysilicon Emitter NPN Bipolar Transistors*, **Proc. of the 13th Int. Conf. on Noise in Physical Systems and 1/f Fluctuations**, Eds. V. Bareikis & R. Katilius, World Scientific Pub., Singapore, pp. 454-457 (29 May - 3 June 1995).
204. M.J. Deen and J. I. Ilowski, *Bonding Pad Effects on Modeling the High Frequency Noise Characteristics of Polysilicon Emitter NPN Bipolar Transistors*, **Proc. of the 13th Int. Conf. on Noise in Physical Systems and 1/f Fluctuations**, Eds. V. Bareikis and R. Katilius, World Scientific Publishing, Singapore, pp. 458-461 (29 May - 3 June 1995).
205. M.J. Deen, D.S. Malhi, Z.X. Yan and R.A. Hadaway, *A New Mixer Circuit Using a Gate-Controlled LPNP BJT*, **1995 IEEE Int. Symp. on Circuits and Systems**, Seattle, Washington, pp. 1968-1971 (29 April - 3 May 1995).
206. C.L.F. Ma, M.J. Deen, L. Tarof and J. Yu, *Modeling of Breakdown Voltage and its Temperature Dependence in SAGCM InP/InGaAs Avalanche Photodiodes*, **International Electron Device Meeting (IEDM),** San Francisco,

California, pp. 583-586 (December 1994).

207. C.L.F. Ma, M.J. Deen and L. Tarof, *Dark Current Noise Characteristics of Separate Absorption, Grading, Charge, and Multiplication in InP/InGaAs Avalanche Photodiodes,* **24th European Solid-State Device Research Conference (ESSDERC '94)**, Edinburgh, Scotland, pp. 727-730 (11-15 September 1994).
208. C.L.F. Ma, M.J. Deen and L. Tarof, *Fast and Accurate Method of Extracting Two Critical Device Parameters of SAGCM InP/InGaAs Avalanche Photodiodes,* **24th European Solid-State Device Research Conference (ESSDERC '94)**, Edinburgh, Scotland, pp. 459-462 (11-15 September 1994).
209. M.J. Deen, *High Temperature Characteristics of AlAs/GaAs/AlAs Double Barrier Quantum Well Diodes,* **Transactions of the Second International High Temperature Electronics Conference**, Eds. D.B. King and F.V. Thome, Charlotte, North Carolina, pp. p63-p68 (June 5-10, 1994).
210. M. Doan, Z. Buffet and M.J. Deen, *The Effects of A.C. and D.C. Reverse Bias Stress on the D.C. Forward Bias and Low Frequency Noise Characteristics of Polysilicon Emitter Bipolar Junction Transistors,* **Proc. of the Sym. on the Degradation of Electronic Devices Due to Device Operation as Well as Crystalline and Process-Induced Defects, Proc. Vol. 94-1,** Eds. H.J. Quessnier, J.E. Chung, K.E. Bean, T.J. Shaffner and H. Tsuya, The Electrochemical Society Press, Penington, New Jersey, pp. 235-241 (1994).
211. X. Lu, Z. Xie, M.S.A. Abdou, M.J. Deen and S. Holdcroft, *Studies of Polymer-Based Field Effect Transistors,* **Proc. Canadian Conf. on Electrical & Computer Engineering**, Vancouver, pp. 814-816, (14- 17 September 1993).
212. J. Liang and M.J. Deen, *Parameter Extraction and Modeling of Short-Channel LDD MOSFETs for VLSI Applications,* **Proc. Canadian Conf. on Elec. & Comp. Engineering**, Vancouver, pp. 821-824, (14-17 Sept. 1993).
213. C.L.F. Ma, M.J. Deen and L. Tarof, *D.C. and Noise Characteristics of InP-Based Avalanche Photodiodes for Optical Communication Applications,* **Proceedings of the Canadian Conference on Electrical & Computer Engineering**, Vancouver, pp. 1270-1273, (14-17 September 1993).
214. M.J. Deen, *Low Frequency Noise and Excess Currents Due to Trap-Assisted Tunneling in Double Barrier Resonant Tunneling Diodes,* **23rd European Solid-State Device Research Conference (ESSDERC '93)**, Grenoble, France, pp. 355-358 (13-16 September 1993).
215. M.J. Deen and J.J. Ilowski, *Noise Characterization and Modeling of Poly-Emitter Bipolar Junction Transistors at Microwave Frequencies,* **AIP Conference Proceedings 285 - Noise in Physical Systems and 1/f Fluctuations (ICNF '93)**, Eds. P.H. Handel and A.L. Chung, AIP Press, New York, pp. 216-219 (1993).
216. R. Murowinski, G. Linzhuang and M.J. Deen, *Temperature Dependence of Radiation-Induced Trapping Phenomena in CCDs,* **IEEE Workshop on Charge Coupled Devices,** Waterloo, Ontario, 5 pages (June 1993).
217. R. Murowinski and M.J. Deen, *Low Temperature Characteristics of Large Array Charge Coupled Devices,* in **Proceedings of the Symposium on Low Temperature Electronics and High Temperature Superconductivity Proceedings Volume 93-22)**, Editors, S. Raider, C. Claeys, D. Foty, and T. Kawai, Electrochemical Society Press, Penington, New Jersey, pp. 209-220 (1993).
218. R. Murowinski, G. Linzhuang and M.J. Deen, *Effects of Radiation Damage and Temperature on CCD Noise for the Lyman FUSE Mission,* **Proc SPIE Photonics for Space Environments - OE/Aerospace Science and Sensing**, Ed. E.W. Taylor, Vol. 1953, Orlando, Florida, pp. 71-81 (12-16 April, 1993).
219. Y. Zhu and M.J. Deen, *A New Explanation for the Hooge's Empirical 1/f Noise Relation,* **AIP Conference Proceedings 285 - Quantum 1/f Noise & Other Low Frequency Fluctuations in Electronic Devices**, Eds. P.H. Handel and A.L. Chung, AIP Press, New York, pp. 76-90 (1993).
220. A. Ng and M.J. Deen, *Low Frequency Noise Modeling of Bipolar Junction Transistors for VLSI Circuits,* **AIP Conference Proceedings 285 - Quantum 1/f Noise and Other Low Frequency Fluctuations in Electronic Devices**, Eds. P.H. Handel and A.L. Chung, AIP Press, New York, pp. 142-164 (1993).
221. M.J. Deen and Y. Zhu, *1/f Noise in n-Channel MOSFETs at High Temperatures,* **AIP Conference Proceedings 285 - Quantum 1/f Noise and Other Low Frequency Fluctuations in Electronic Devices**, Eds. P.H. Handel and A.L. Chung, AIP Press, New York, pp. 165-188 (1993).
222. M.J. Deen, A. Ng, X.M. Li and O. Berolo, *Analysis of Low Frequency Noise in AlAs/GaAs/AlAs Double Barrier Diodes,* **Proceedings of the International Conference on Noise in Physical Systems and 1/f Fluctuations**, Eds. T. Musha, S. Sato and M. Yamamoto, Kyoto, Japan, pp. 195-198 (24-27 November 1991).
223. M.J. Deen, X.M. Li, Y. Zhu, Z.X. Yan and T.M. Kleinpenning, *1/f Noise Model for Short Channel MOSFETs in Saturation,* **Proceedings of the International Conference on Noise in Physical Systems and 1/f Fluctuations**, Eds. T. Musha, S. Sato and M. Yamamoto, Kyoto, Japan, pp. 281-284 (24-27 November 1991).
224. A. Ng, M.J. Deen, X.M. Li and O. Berolo, *Cryogenic D.C. and Low Frequency Noise Characteristics of AlAs/GaAs/ AlAs Resonant Tunneling Diodes,* in **Proceedings of the Symposium on Low Temperature Electronic Device Operation (Proceedings Volume 91-14)**, Editors, D. Foty, N. Saks, S. Raider and G. Oleszek, Electrochemical Society Press, Penington, New Jersey, pp. 131-140 (1991).

225. M.J. Deen and C. Quon, *Characterization of Hot-Carrier Effects in Short Channel NMOS Devices Using Low Frequency Noise Measurements,* **7th Biennial European Conf. - Insulating Films on Semiconductors (INFOS 91)**, (Liverpool, UK, 2-5 April, 1991) Eds W. Eccleston and M. Uren, IOP Pub. Ltd. U.K., pp. 295-298 (1991).
226. X.M. Li and M.J. Deen, *A New Charge Pumping Method for the Determination of Spatial Interface State Density Distribution in MOSFETs*, **IEEE International Electron Devices Meeting (IEDM) Technical Digest**, San Francisco, CA, pp. 85-87 (9-12 December 1990).
227. M.J. Deen, *Low Temperature Electronics,* **Low Temperature Engineering and Cryogenics Conference, (LTEC 90)**, Southampton, England, pp. 09.1.1-09.1.8 (17-19 July, 1990).
228. R.H.S. Hardy, I.R. Radziejewski, M.J. Deen and S. Stapleton, *An Improved Performance Token Ring Network Interface Adapter*, **Proceedings of the 1989 Canadian Conference on Very Large Scale Integration (CCVLSI 89)**, Vancouver, British Columbia, pp. 99-105 (22-24 October, 1989).
229. M.J. Deen, R.H.S. Hardy, J. Wang and S. Stapleton, *Analyzing the Performance of Short Channel PMOS and NMOS Devices for CMOS VLSI*, **Proceedings of the 1989 Canadian Conference on Very Large Scale Integration (CCVLSI 89)**, Vancouver, British Columbia, pp. 139-146 (22-24 October, 1989).
230. R.H.S. Hardy, M.J. Deen and S.P. Stapleton, *Device Limitations on High Speed Clock Recovery in Token Ring Networks using BPSK Modulation,* **Proceedings of the Canadian Conference on Electrical & Computer Engineering**, Montreal, pp. 227-229 (17-20 September 1989).
231. R.H.S. Hardy, S.P. Stapleton and M.J. Deen, *Phase Jitter due to Dispersion of an Optical Fiber,* **Proceedings of the Canadian Conference on Electrical & Computer Engineering**, Montreal, pp. 381-383 (17-20 September 1989).
232. J. Wang and M.J. Deen, *Analyzing Short Channel Effects in PMOS Devices,* **Proceedings of the Canadian Conference on Electrical & Computer Engineering**, Montreal, pp. 907-910 (17-20 September 1989).
233. Z.X. Yan and M.J. Deen, *A New Method of Measuring the Threshold Voltage for Small Geometry MOSFETs,* **Proc. Canadian Conf. on Electrical & Computer Engineering**, Montreal, pp. 1034-1037 (17- 20 September 1989).
234. Z.P. Zuo, M.J. Deen and J. Wang, *A New Method for Extracting Short-Channel Length or Narrow-Channel Width MOSFET Parameters,* **Proceedings of the Canadian Conference on Electrical & Computer Engineering**, Montreal, pp. 1038-1041 (17-20 September 1989).
235. S.P. Stapleton, M.J. Deen and R.H.S. Hardy, *Power Combining MMIC Oscillators,* **Proceedings of the Canadian Conference on Electrical & Computer Engineering**, Montreal, pp. 1126-1128 (17-20 Sept. 1989).
236. M.J. Deen, J. Wang, Z.X. Yan and Z.P. Zuo, *Substrate Bias Effects in Short Channel Length and Narrow Channel Width PMOS Devices at Cryogenic Temperatures,* **Proceedings of the IEEE Workshop on Low Temperature Electronics**, Burlington, Vermont, pp. 53-57 (7-8 August 1989).
237. S.P. Stapleton, R.H.S. Hardy and M.J. Deen, *The Effects of Optimized Devices on the Performance of a Token Ring Network Interface,* **Proceedings of the 6th International IEEE Workshop on Microelectronics and Photonics in Communications**, Cape Cod, Massachusetts, 8 pages (7-9 June 1989).
238. S.P. Stapleton, R.H.S. Hardy, M.J. Deen, R. Fortier, P. Leung and N. Fong, *The Effect of Optimized Devices on the Performance of a Token Ring Network Interface,* **Proceedings of the IEEE Pacific Rim Conference on Computers, Communications and Signal Processing**, Victoria, BC, Canada, pp. 143-146 (1-2 June 1989).
239. M.J. Deen, R.H.S. Hardy, S.P. Stapleton and R. Fortier, *Interactions Between Device Technologies and Computer Communications Networks and Circuits,* **Proceedings of the IEEE Pacific Rim Conference on Computers, Communications and Signal Processing**, Victoria, BC, Canada, pp. 130-133 (1-2 June 1989).
240. B. Pontifex, B. Jaggi, M.J. Deen and B. Palcic, *Performance of a Photodiode Array Cooled to Low Temperatures in Image Cytometry,* **Proceedings of the Annual Conference IEEE Engineering in Medicine and Biology (IEEE EMBS)**, New Orleans, Louisiana, pp. 377-379 (4-7 November 1988).
241. J. Wang, Z.P. Zuo and M.J. Deen, *Performance Characteristics of Short Channel PMOS Devices: Implications for CMOS VLSI,* **Proc. of the Canadian Conf. Electrical & Comp. Eng.**, Vancouver, BC, pp. 776-780 (3-4 Nov. 1988).
242. B. Jaggi and M.J. Deen, *Low Temperature Operations of Silicon Charge Coupled Devices for Imaging Applications,* **Symposium on Low Temperature Electronics & High Temperature Superconductors**, **Proc. Vol. 88-9**, Eds S.I. Raider, R. Kirschman, H. Hayakawa and H. Ohta, Electrochemical Society Press, New Jersey, pp. 579-589 (1988).
243. M.J. Deen and K.C. To, *Low Temperature Characteristics of CMOS Op-Amps*, **Proceedings of the Symposium on Low Temperature Electronics and High Temperature Superconductors, Proc. Vol. 88-9**, Eds S.I. Raider, R. Kirschman, H. Hayakawa and H. Ohta, Electrochemical Society Press, New Jersey, pp. 545-553 (1988).
244. M.J. Deen and Jing Wang, *Design Considerations for the Operation of CMOS Inverters at Cryogenic Temperatures*, **Symposium on Low Temperature Electronics & High Temperature Superconductors**, Proc. Vol. 88-9, Eds S.I. Raider, R. Kirschman, H. Hayakawa and H. Ohta, Electrochemical Society Press, New Jersey, pp. 108-116 (1988).

Plenary, Keynote or Invited Conference Abstracts

- **Total Plenary, Keynote, Invited Refereed and Contributed Conference Abstracts – 220**
- **Total Plenary, Keynote, Invited Refereed Conference Abstracts – 105**

1. **Opening Keynote Speaker**, M.J. Deen, "*Sensing Technologies for Ubiiquitous Healthcare*," **7th International Conf. on Computers and Devices for Communication (CODEC 2019),** page 1, Kolkata, India (Thur 19 December 2019).
2. **Opening Keynote Speaker**, M.J. Deen, "*Smart Sensors and Smart Homes for Ubiquitous Healthcare – AI is a Key Enabler*," **2019 Guangdong-Hong Kong-Macao Greater Bay Area International Summit – "Focusing on EDA & Modeling Initiative Program",** 1 page, Shenzhen, China (Sunday 15 December 2019).
3. **Opening Keynote Speaker**, M.J. Deen, "*Bioimagers – Having Fun at the Intersection of Engineering and Sciences*," **2019 International Academicians Summit,** 1 page, Chengdu, China (Tuesday 15 October 2019).
4. **Keynote Speaker**, M.J. Deen, "*Smart Sensors for Water Quality Monitoring Applications*," **2019 Smart China Expo – "Smart Agriculture Forum"**, 1 page, Chongqing, China (27 August 2019).
5. **Best Presentation Award** - **Opening Keynote Speaker**, M.J. Deen, "*Smart Sensors and Data Analytics for Ubiquitous Healthcare*," **2019 IEEE HPCC/Smart City/DSS 2019 (21st International Conference High Performance Computing and Communications / 17th International Conference on Smart City / 5th International Conference on Data Science and Systems)**, p. 11, Zhangjiajie, China, (10 August 2019).
6. **Invited Speaker**, M.M.R. Howlader and M.J. Deen, "*Nanomaterials Based Low-cost Sensors*," **19th Canadian Semiconductor Science and Technology Conference (CSSTC 2019)**, 1 page, Saskatoon, Saskatchewan, Canada (28 July – 1 August 2019).
7. **Keynote Speaker**, M.J. Deen, "*Cognitive Decision Making – A Case Study for Fiber Optic Communication Systems*," **2019 Huawei Future Network Frontiers Workshop,** 1 page Montreal, Canada (18-19 July 2019).
8. **Keynote Speaker**, M.J. Deen, "*Smart Sensors for Environmental Applications*," **"2019 Inspiring ICT" International Summer School on Information and Communication Technology**, Xidian University, pp. 20-21, Xian, China (6 July 2019).
9. **Best Presentation Award** - **Opening Keynote Speaker**, M.J. Deen, "*Smart Sensors and Data Analytics for U-Healthcare – AI is a Key Enabler*," **2019 APEC Innovation Dialog Forum,** 1 page, Huzhou, China, (14 May 2019).
10. **Plenary Speaker**, M.J. Deen, "*Smart Sensors, IoT and Data Analytics – Research, Trends and Opportunities*," **The Humboldt Association of Canada "Kolleg: Transitions",** 1 page, Ottawa, Canada, (11 May 2019).
11. **Keynote Speaker**, M.J. Deen, "*Integrating Nano-/Optoelectronics in Bioimagers for Healthcare Applications*," **"2018 Innovative ICT" International Summer School on Information and Communication Technology**, Xidian University, 1 page, Xian, China (25 July 2018).
12. **Keynote Speaker**, M.J. Deen, "*Smart Sensors and Smart Homes for Ubiquitous Healthcare*," **2018 The Second International Duke Kunshan University Innovation Forum "AI: Recent Development Emerging Applications,"** p. 6, Kunshan, China (21-22 May 2018).
13. **Keynote Speaker**, M.J. Deen, "*Smart Sensors – Having Fun at the Intersection of Engineering & Sciences*," **Nanotech Malaysia 2018,** p. 8P-1-2, Kuala Lumpur, Malaysia (7-9 May 2018).
14. **Keynote Speaker**, M.J. Deen, "*Smart Sensors and Smart Homes for Elderly Ubiquitous Healthcare*," **2017 International Conference on Security, Pattern Analysis and Cybermatics,** pp11-13, Shenzen, China (15-17 December 2017).
15. **Opening Keynote Speaker**, M.J. Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities*," **Proceedings of ES 2017. IEEE Fifth International Conference on Enterprise Systems (ES 2017) – Industry 4.0 and Made in China 2025,** 12page, Tsinghua University, Beijing, China (September 2017).
16. **Opening Keynote Speaker**, M.J. Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities. Conference* **Proceedings. International Academicians Forum - Made in China 2025 and Industry 4.0,** 1 page, Yiwu, China (September 2017).
17. **Keynote Speaker**, M.J. Deen, "*Smart Sensors – Research, Trends and Opportunities*," **Chip on the Sands - SB-Micro 2017,** Fortaleza, Brazil, 2 pages (Wednesday 30 August 2017).
18. **Keynote Lecture**, M.J. Deen, "*Nano-Optoelectronic Systems for Health Applications*," **NTU-MediaTek IC Design Workshop,** Nanyang Technological University, Singapore (16 August 2017).
19. **Opening Keynote Speaker**, M.J. Deen, "*Unprecedented Vision*: *From Quantum Dots to Silicon Imagers*," **Annual Workshop – 111 Project Base of Wide Band-gap Semiconductor and Micro-Nano-Electronics,** Xidian University, Xian, China, p 1 (19 July 2017).
20. **Keynote Lecture**, M.J. Deen, "*Smart Sensors for Ubiquitous Healthcare*: *Trends and Stat-of-the-Art*," **International Summer School on Information and Communication Technology (16-25 July 2017),** Xidian University, Xian, China, p 11 (18 July 2017).

21. **Invited Paper,** J.A. Jiminez Tejada, P. Lopez Varo, O. Marinov, C.H. Chen and M.J. Deen, "*Effect of Metal-Organic Interfaces in Analytical Modeling of Organic Solar Cells*," **231st Meeting of the Electrochemical Society**, 2 pages, New Orleans, LA (26 May – 1 June 2017).
22. **Opening Keynote Speaker**, M.J. Deen, "*Nano-Optoelectronic Systems for Health Applications*," **BIT's 3rd Annual World Congress of Smart Materials – 2017, Theme: *Step Towards a Ubiquitous Smart Future***, Bangkok, Thailand, p. 42, (16-18 March 2017).
23. **Opening Keynote Speaker**, M.J. Deen, "*Smart Sensors for Health Applications – Research, Trends and Opportunities*," **Second Generation of Information Technology, Technology Innovation Shenzen-Hong Kong Cooperation, Shenzen-Hong Kong Cooperation High-Level Forum**, Shenzhen Research Institute, Key Laboratory of Shenzhen System Chip Design, Peking University, Shenzen, China, 1 page (Saturday 18 February 2017).
24. **Opening Keynote Speaker,** M.J. Deen, "*Smart Sensors for the Grand Challenges in Health and Environmental Applications*, **38th Annual Scientific Meeting of the National Academy of Science and Technology "*Looking Back and Looking Forward*",** Manila, Philippines, 2 pages, (Wednesday 13 July 2016).
25. **Invited Paper,** M.J. Deen, "*Engineering Education and Economic Development - Fact or Fiction*", Graduate Students Meeting on Electronics Engineering, Universitat Rovira i Virgili (URV), Tarragna, Spain, 2 pages (Friday 1 July 2016).
26. **Invited Paper,** M.J. Deen, "*Flexible Electronics*: *Opportunities and Challenges*", **International Workshop on Flexible Electronics (WFE),** Universitat Rovira i Virgili, Tarragona, Spain, 2 pages (Wednesday 29 June 2016).
27. **Invited Paper,** M.J. Deen, "*Low-cost Bio-imagers for Healthcare Screening and Diagnostics*," **King Khalid University Medical City (KKUMC) International Conference -University Healthcare Systems: Identity and Mission,** King Khalid University, Abha, Saudi Arabia, 2 pages (30-31 March 2016).
28. **Opening Keynote Speaker,** M.J. Deen, "*Smart Sensors for the Grand Challenge in Health Applications*", **Philippine Council for Health Research and Development (PCHRD) Conference: Going Global: Increasing International Partnerships in Research and Innovation for Health,** Manila, Philippines, 2 pages (17 March 2016).
29. **McMaster Plenary,** M.J. Deen, "*Smart Home Technologies Towards Elderly Ubiquitous Healthcare*," **McMaster University and The McMaster Institute of Geroscience Symposium on the Plasticity of Aging – Living Long … Living Well,** Hamilton, Canada, 1 page (29 September – 1 October 2015).
30. **Invited Paper,** M.J. Deen, "*Smart Home Technologies for Smart Cities*," **International Workshop on Big Data for Petroleum Engineering,** China University of Petroleum, Qingdao, China, 1 page (16 August 2015).
31. **Invited Paper,** J.A. Jiminez Tejada, P. Lopez Varo, O. Marinov and M.J. Deen, "*Role of Metal-Organic Intefaces in the Dark Current Characteristics of Organic Solar Cells*," **227th Meeting of the Electrochemical Society**, 2 pages, Chicago, Illinois (24-28 May 2015).
32. **Invited Paper,** M.J. Deen, "*IoT, Smart City and U-Health, U-Environment Smart Home*," Walter Booth School of Engineering Practice "**Policy Matters in a Connected World**" Specialty Workshop, McMaster University, Hamilton, Canada, 1 page (5 May 2015).
33. **Keynote Paper,** M.J. Deen, "*Smart Home Technologies Towards Better Healthcare*," **5th Saudi eHealth Conference,** Riyadh, Saudi Arabia, 1 page (18-20 November 2014).
34. **Keynote Paper,** M.J. Deen, "*Ubiquitous-Healthcare Smart Homes for the Elderly*," **IEEE International Humanitarian Technology Conference (IHTC 2014)**, Montreal, Canada, 1 page (Sunday 1 June 2014).
35. **Invited Paper,** Q. Fang, M.J. Deen and R. Selvaganapathy, "*Applications of Optoelectronics Sensor Technology in Environmental and Personal Health Monitoring*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Tuesday 13 May 2014).
36. **Invited Paper,** D. Palubiak and M.J. Deen, "*Single Photon Avalanche Diode Imaging Systems for Biomedical Applications*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Monday 12 May 2014).
37. **Keynote Paper,** M.J. Deen, "*Biosensors – Having Fun with Engineering and the Sciences*," **IX Workshop on Semiconductors & Micro & Nano Technology** (**SEMINATEC 2014**), Sao Paolo, Brazil, 1 page (Fri 25 April 2014).
38. **Invited Paper,** M.J. Deen, "*Smarter Homes Towards Better Healthcare for the Elderly*," **Canadian Conference on Electrical and Computer Engineering** (**CCECE 2014**), Toronto, Ontario, 1 page (Tuesday 6 May 2014).
39. **Invited Paper,** M.J. Deen, "*Smart Cities – ICT and Transportation*," **APEC Smart City Innovation & Technology Cooperative Forum – Academician Sub-Forum**, Changzhou, China, 1 page (Wednesday 9April 2014).
40. **Keynote Paper,** M.J. Deen, "*Information and Communications Technologies for Ubiquitous-Healthcare*," **APEC (Asia-Pacific Economic Cooperation) Smart City Innovation & Technology Cooperative Forum**, Changzhou, China, 1 page (Tuesday 8April 2014).
41. **Invited Paper,** M.J. Deen, "*Imaging and Sensing Devices for Medical and Environmental Applications*," **Workshop for International Research Core for Advanced Manufacturing Science for Future Systems, International Symposium on Advanced Manufacturing Science for Future Systems**, University of Tokyo, Tokyo, 1 page

(Thursday 20 March 2014).

42. **Invited Paper,** M.J. Deen and M.R. Howlader, "*Future Nano- and Micro-Systems Using Nanobonding Technologies*," **International Conference on Nanomaterials 2013**, London, Ontario, Canada, 1 page (Monday 12 August 2013).
43. **Invited Paper,** J.A.J. Tejada, Pilar López Varo, Karam Awawdeh and M.J. Deen, "*Modeling of Charge Injection in Organic/Polymeric Diodes*," **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada, 1 page (Tuesday14 May 2013).
44. **Invited Paper,** Ognian Marinov, Cong Feng, and M. Jamal Deen, "*Precise Parameter Extraction for Organic Thin-Film Transistors Operating in the Linear Regime*," **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada, 1 page (Tuesday 14 May 2013).
45. **Invited Paper**, M.J. Deen, *"Nanotechnology - Nanobonding a Key Enabling Technology Emerging Applications*," **The 1st Int. Workshop on Advanced Materials and Devices (WAMD '13**), Havana, Cuba, 1 page (13-15 March 2013).
46. **Invited Paper**, M. Deen and Qiyin Fang, *Bioimagers – Life at the Intersection of Engineering and Sciences*, **The 4th International Symposium on IT Convergence Engineering (ISITCE),** Seoul, Korea, 1 page (12-13 July 2012).
47. **Invited Paper**, M. Deen, *Compact Modeling of Organic Thin Film Transistors*, **The 8th International Conference on Organic Electronics,** Tarragona, Spain, 1 page (25-27 June 2012).
48. **Invited Paper**, M.M. Eldesouki, D. Palubiak, and M. Deen, *High-Speed Ultra-Sensitive CMOS SPAD Imagers*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington, 1 page (6-12 May 2012).
49. **Invited Paper**, D. Palubiak, M. Deen, and H. Peng, *Characterization of a 130 nm CMOS SPAD Pixel*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington, 1 page (6-12 May 2012).
50. **Invited Paper**, Q. Fang and M. Deen, *Recent Advances in Integrated Optoelectronics and their Applications in Endomicroscopy and Distributed Environment Sensing*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington, 1 page (6-12 May 2012).
51. **Keynote Paper – Royal Society of Canada Keynote Address**, M.J. Deen, *Integrated Low-cost, High-sensitivity Biosensors for Water Quality Monitoring*, **23rd Canadian Congress of Applied Mechanics 2011 (CanCAM 2011)**, 1 page, Vancouver, BC, Canada (5-9 June 2011).
52. **Invited Paper**, O. Marinov and M.J. Deen, *Transient Behavior of Variable Range Hopping*, **Organic Semiconductor Materials, Devices & Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (3 May 2011).
53. **Invited Paper – Electronics and Photonics Division Award Talk**, M.J. Deen, *Organic/Polymeric Thin Film Transistors - Fabrication, Characterization and Modeling*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
54. **Invited Paper**, J. Jiménez Tejada, K. Awawdeh, P. López Varo, A. Ray, and M.J. Deen, *Contact Effects and Hysteresis in Organic Thin Film Transistors*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
55. **Invited Paper**, R. Datars, J. Tajik, and M.J. Deen, *Modeling of Organic Solar Cells*, **Organic Semiconductor Materials, Devices & Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (3 May 2011).
56. **Plenary Paper**, M.J. Deen, *Low-cost, High-sensitivity Sensing Systems for Environmental and Biomedical Applications*, **IEEE Spanish Conference on Electron Devices (IEEE Conferencia De Dispositivos Electronicos)**, Mallorca, Spain, 1 page (9-11 February 2011).
57. **Invited Paper**, M.J. Deen, *Compact and Numerical Modeling of Organic Thin Film Transistors*, **3rd International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2010),** Tarragona, Spain, 1 page abstract (2 July 2010).
58. **Invited Paper**, J.A. Jiménez Tejada, J.A. López Villanueva, J. E. Carceller, M.J. Deen, N. B. Chaure and A. K. Ray, *Incorporation of Contact Effects in Compact Models of Organic/Polymeric Thin Film Transistors*, **3rd International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2010),** Tarragona, Spain, 1 page abstract (2 July 2010).
59. **Invited Paper**, M. A. Naser, M.J. Deen and D. Thompson, *Photocurrent Modeling of Resonant Tunneling Quantum Dot Infrared Photodetectors*, **Fifth International Symposium on Integrated Optoelectronics, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada,1 page (Wednesday 26 April 2010).
60. **Invited Paper**, R. Wang, J. Deen and Q. Fang, *Wide Field Catadioptric System Design for Endoscopic Auto-Fluorescence Imaging*, **Fifth International Symposium on Integrated Optoelectronics, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada,1 page (Tuesday 26 April 2010).
61. **Invited Paper**, L. M. Resendiz Mendoza, M. Estrada, A. Cerdeira, B. Iniguez and M.J. Deen, *Influence of P3HT Active Layer Thickness on the Electrical Characteristics of PTFTs*, **Second Int. Symposium on Organic Semiconductor Materials and Devices, The 216th Meeting of the Electrochemical Society**, Vienna, Austria,1 page (Tuesday 6

October 2009).

62. **Invited Paper**, J. Jiménez Tejada, P. Lara Bullejos, M.J. Deen and O. Marinov, *Study of the Physical Mechanisms at the Contact Regions of Organic Transistors*, **Second Int. Symposium on Organic Semiconductor Materials and Devices, The 216th Meeting of the Electrochemical Society**, Vienna, Austria,1 page (Monday 5 October 2009).
63. **Invited Paper**, O. Marinov, M.J. Deen and B. Iniguez, *Compact Modeling of Organic Thin Film Transistors* **Second Int. Symposium on Organic Semiconductor Materials and Devices, The 216th Meeting of the Electrochemical Society**, Vienna, Austria,1 page (Monday 5 October 2009).
64. **Invited Paper**, M.J. Deen, *CMOS-based Photodetection Systems for Biological/Medical Application*, **2009 CMOS Emerging Technologies**, Vancouver, Canada, 1 page (23-25 September 2009).
65. **Invited Paper**, N. Faramarzpour, M.J. Deen, Q. Fang and S. Shirani, *Breakdown Mechanism in Silicon Avalanche Photodiodes*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii,1 page (Wednesday 15 October 2008).
66. **Invited Paper**, M. A. Naser, M. Deen and D. Thompson *Modeling and Optimization of Quantum Dot Infrared Photodetectors*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii,1 page (Tuesday 14 October 2008).
67. **Invited Paper**, M. Eldesouki, M. Deen, Q. Fang, F. Tse and L. W. Liu, *CMOS Camera-on-Chip Image Sensor for Biomedical Applications*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii, 1 page (Tuesday 14 October 2008).
68. **Invited Paper,** Q. Fang, M. Kfouri, T. Huang, F. Tse, L. W. Liu and M. Deen, *Towards a Lab-in-a-Pill for Wireless GI Endoscopy*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii, 1 page (Monday 14 October 2008).
69. **Invited Paper**, M.J. Deen, *Compact Modeling of Silicon-based, Low-cost, Highly Integrated Biosensors*, **IEEE EDS Mini-Colloquium on Advanced Electron Devices Technology and Modeling**, The Møller Centre, Cambridge, UK, 1 page (Friday 12 September 2008).
70. **Invited Paper**, M.J. Deen, *Modeling Organic/Polymeric Thin-film Transistors*, **First IEEE EDS International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation**, The Møller Centre, Cambridge, UK, 1 page (Thursday 11 September 2008).
71. **Invited Paper,** M.J. Deen, *Silicon-based High-sensitivity Integrated Biosensors*, **NanoTr IV – Nanoscience and Nanotechnology Conference**, Istanbul, Turkey, page 87 (9-13 June 2008).
72. **Invited Paper**, M.J. Deen, *Contacts Effects on the Charge Transport in Polymeric Thin-film Field-effect Transistors*, **International Symposium on Flexible Electronics (ISFE)** (First Int. Symposium on Organic Semiconductor Materials and Devices), Tarragona, Spain, 1 page (6-9 April 2008).
73. **Invited Paper**, J.A. Jiménez Tejada, P. Lara Bullejos M.J. Deen and W. Datars, *Compact Model for the Injection and Transport of Charge in Organic Diodes*, **The 212th Meeting of the Electrochemical Society** (First Int. Symposium on Organic Semiconductor Materials and Devices), Washington, DC, 1 page (7 - 12 October 2007).
74. **Invited Paper**, M.J. Deen, M. Kazemeini and S. Holdcroft, *The Influence of the Contacts in Charge Transport in Polymer Thin- Film Field-Effect Transistors*, **The 212th Meeting of the Electrochemical Society** (First Int. Symposium on Organic Semiconductor Materials and Devices), Washington, DC, 1 page (7 - 12 October 2007).
75. **Plenary Paper**, M.J. Deen, *Highly Sensitive, Low-cost Integrated Biosensors*, **SBMicro2007 - 22nd Symposium on Microelectronics Technology and Devices,** Rio de Janeiro, Brazil, 1 page (3-6 September 2007).
76. **Tutorial Paper**, M.J. Deen, *Noise in Advanced Electronics Devices and Circuits*, **SBMicro2007 - 22nd Symposium on Microelectronics Technology and Devices,** Rio de Janeiro, Brazil, 1 page (Monday 3 September 2007).
77. **Invited Paper**, M.J. Deen**,** *Noise Issues in CMOS Devices and Circuits*, **2007 IEEE Workshop on Microelectronics and Electron Devices (WMED) - Fifth Regional Meeting,** Boise Center on the Grove, Boise, Idaho (20 April 2007).
78. **Plenary Paper**, M.J. Deen, *Highly Sensitive, Low-cost Integrated Biosensors*, **The IEEE International Conference on Computers and Devices for Communications (CODEC'06),** Kolkata, India., 1 page (18-20 December 2006).
79. **Invited Paper**, Q. Fang, M.J. Deen and J. Lo, *Time- and Spectra-Resolved MOEMS Device for Sensing and Imaging in Clinical Diagnosis*, **The 210th Meeting of the Electrochemical Society** (Third Int. Symposium on Integrated Optoelectronics), Cancun, Mexico, 1 page (29 October – 3 November 2006).
80. **Invited Paper**, M.J. Deen, N. Faramarzpour, F. Campos, S. Shirani, Q. Fang, L. Liu and J. W. Swart, *High-Sensitivity Photodetector Systems for Fluorescence Imaging*, **The 210th Meeting of the Electrochemical Society** (Third Int. Symposium on Integrated Optoelectronics), Cancun, Mexico, 1 page (29 October – 3 November 2006).
81. **Invited Paper**, M.J. Deen, *Integrated Biosensors*, **The IEEE EDS International Electron Device and Materials Colloquium,** Orlando, Florida, 1 page (24-25 February 2006).
82. **Invited Paper**, J.C. Ranuarez and M.J. Deen, *Highly Sensitive Integrated Biosensors*, **The 208th Meeting of the Electrochemical Society** (Dielectrics and the Dielectric-Electrolyte Interface in Biological and Biomedical

Applications) Los Angeles, California, 1 page (17-21 October 2005).

83. **Invited Paper**, N.R. Das and M.J. Deen, *Quantum Dot Infrared Photodetector and its Applications*, **Thirteenth Int. Workshop on the Physics of Semiconductor Devices (IWPSD 2005),** New Delhi, India, 1 page, (13-17 Dec. 2005).
84. **Invited Paper**, M.J. Deen, *Plastic Microelectronics with Organic and Polymeric Thin-Film Transistors*, **The 1st International Workshop of NANO Systems Institute**, Seoul National University, Korea, p. 35 (30-31 May, 2005).
85. **Invited Paper**, M.J. Deen and O. Marinov, *The Importance of the Gate Dielectric in Organic and Polymeric Thin-Film Transistors*, **The 207th Meeting of the Electrochemical Society** (Second International Symposium on Science and Technology of Dielectrics in Emerging Fields), Quebec City, Quebec, Canada, 1 page (15-20 May, 2005).
86. **Invited Paper**, Y. Ardeshirpour and M.J. Deen, *CMOS Image Sensors for Fluorescent Detection from DNA Microarray*, **The 206th Meeting of the Electrochemical Society** (Second International Symposium on Integrated Optoelectronics), Honolulu, Hawaii, 1 page (3-8 October, 2004).
87. **Invited Paper**, Y. El-Batawy and M.J. Deen, *High Speed Photodetectors: Modeling Issues*, **The 206th Meeting of the Electrochemical Society** (2nd Int. Sym. on Integrated Optoelectronics), Honolulu, Hawaii, 1 page (Oct. 2004).
88. **Plenary Paper**, M.J. Deen, *Low Power RFICs for Transceiver Applications*, **IEEE Nanoelectronic and Photonic Systems Workshop**, Tarragona, Spain (21-22 June 2004).
89. **Invited Paper**, N. Faramarzpour, S. Shirani, M.J. Deen, *DNA Microarrays and Applications in Testing for Bio-hazardous Materials in the Environment*, **The 5th Biennial International Conference on Chemical Measurement and Monitoring of the Environment**, Toronto, Canada (May 2004).
90. **Invited Paper**, F.J. De la Hidalga-W., F.J. Cortes-P and M.J. Deen, *New Insights on the Cryogenic Self-Heating of Silicon MOSFETs: Thermal Resistance of the Ceramic Package*, **The 204th Meeting of the Electrochemical Society** (Sixth Symposium on Low Temperature Electronics), Orlando, Florida, p. 1404 (12-16 October 2003).
91. **Plenary Paper**, M.J. Deen, *Non-Conventional Operation of FETs and FET Circuits, and Non-conventional FETs - How Much can we Gain and What are the Applications*, **IEEE Conferencia Internacional de Dispositivos, Circuitos y Sistemas Veracruz 2003 (CIDCSVER)**, Veracruz, Mexico (25-27 June 2003).
92. **Keynote Paper**, M.J. Deen, *Electrical Characterization of Si-SiO_2 and Semiconducting Polymer- SiO_2 Interfaces*, **The 203rd Meeting of the Electrochemical Society**, Paris, France, p. 452 (27 April-2 May 2003).
93. **Invited Paper – T.D. Callinan Award Talk**, M.J. Deen, *Electrical Characterization Techniques for Semiconductors and Semiconductor- Dielectric Interfaces - A Review*, **The 201st Meeting of the Electrochemical Society** (Progress, Opportunities in Dielectric Science and Technology Over the Last 25 Years: A Retrospective), Philadelphia, PA, p. 370 (12- 17 May 2002).
94. **Invited Paper**, N. Das, Y. El-Batawy, and M.J. Deen, *Optoelectronic Integrated Circuit Photoreceivers for Fiber-Optic Telecommunication*, **The 201st Meeting of the Electrochemical Society** (First International Symposium on Integrated Optoelectronics), Philadelphia, Pennsylvania, p. 659 (12-17 May 2002).
95. **Invited Paper**, F.J. De la Hidalga-W. and M.J. Deen, *Transient Phenomena During Self-Heating of Silicon Devices Operating at Low Temperatures*, **The 200th Meeting of the Electrochemical Society** (Sixth Symposium on Low Temperature Electronics), San Francisco, California, p. 1404 (2-7 September 2001).
96. **Invited Paper**, F.J. De la Hidalga-W., M.J. Deen and E.A. Gutierrez-D., *Analytical and Experimental Study of the Cryogenic Self-Heating of Silicon Integrated Devices*, **The 196th Meeting of the Electrochemical Society** (Fifth Symposium on Low Temperature Electronics), Honolulu, Hawaii (17-22 October 1999).
97. **Invited Paper**, S. An, M.J. Deen, A. Bandyopadhyay, W.R. Clark, A.S. Vetter, J. Yu, J.-P. Noel and M. Svilans, *Characterization of InP/InGaAs Avalanche Photodiodes for 2.5 GHz Optical Fiber Communications*, **The 193rd Electrochemical Society Meeting** (Twenty-Eight Symposium on State-of-the-Art Program on Compound Semiconductors), San Diego, California, pp. 405-1 to 405-3 (3-8 May 1998).
98. **Invited Paper**, A. Raychaudhuri, W.S. Kwan, M.J. Deen and M.I.H. King, *Hot-Carrier Defect Length Propagation in LDD NMOSFET*, **The 191st Electrochemical Society Meeting** (Fourth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films), Montreal, Canada, pp. 340-341 (4-9 May 1997).
99. **Invited Paper**, E.A. Gutierrez-D., M.J. Deen and A. Torres-J., *Silicon Radiation Detectors for Low Temperature Electronics* **The 191st Electrochemical Society Meeting** (Fourth International Symposium on Low Temperature Electronics and High Temperature Superconductivity), Montreal, Canada, pp. 722-723 (4-9 May 1997).
100. **Invited Paper**, M.J. Deen *Modeling of Avalanche Photodiodes*, **Progress in Electromagnetics Research Symposium (PIERS 1997)**, Kowloon, Hong Kong, Proc. PIERS '97, p. 117 (6-9 January 1997).
101. **Invited Paper**, M.J. Deen and Z.X. Yan, *Low Temperature Characteristics of Gated LPNP Transistors*, **The 187th Electrochemical Society Meeting** (Third Symposium on Low Temperature Electronics and High Temperature Superconductivity), Reno, Nevada, 1 page abstract and 2 journal pages of extended summary (21-26 May 1995).
102. **Invited Paper**, M. Murowinski and M.J. Deen, *Charge Transfer Efficiency in Low Temperature CCDs*, **The 187th Electrochemical Society Meeting** (Third Symposium on Low Temperature Electronics and High Temperature

Superconductivity), Reno, Nevada, 1 page abstract and 1 journal page of extended summary (21-26 May 1995).

103. **Invited Paper**, M.J. Deen and A. Raychaudhuri, *Charge Pumping, Low Frequency Noise and Floating Gate Characterization Techniques of SiO_2 gate Insulators in MOSFETs*, **The Electrochemical Society Spring Meeting**, San Francisco, California, Vol. 94-1, pp. 245-6 (22-27 May 1994).
104. **Invited Paper**, M.J. Deen, *D.C. and Low Frequency Noise Characteristics of Resonant Tunneling Diodes*, **The Electrochemical Society Spring Meeting**, Honolulu, Hawaii, 1 page abstract and two journal pages of extended summary, (16-21 May 1993).
105. **Invited Paper**, M.J. Deen, *Low Temperature Microelectronics: Opportunities and Challenges*, **Electrochemical Society**, Vol. 91-1, pp. 384-385, (May 1991).

Contributed Conference Abstracts

- **Total Contributed Conference Abstracts – 115**

106. Z. Cheng, H. Peng, M.J. Deen, "*Performance Integrated Circuits for Biomedical Imaging Applications*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Wed 13 May 2014).
107. X. Zheng, M.J. Deen, and H. Peng, "*Performance Characteristics of CZT Detectors for PET Imaging Applications*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Wednesday 13 May 2014).
108. H. Alhemsi and M.J. Deen, "*MOS Time-Domain Imager for Functional Brain Imaging Using Gated Near-Infrared Spectroscopy*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Tuesday 13 May 2014).
109. T. Guo, M.J. Deen, R., C. Xu, and Q. Fang, "*In-Line Monitoring of Bacteria in Drinking Water By Infrared Spectroscopy and Micro-Flow Cytometry*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Tuesday 13 May 2014).
110. Cong Feng, M. Jamal Deen and P.R. Selvaganapathy, "*Polymeric Thin-Film Transistors and Microfluidics for Sensing Applications*," **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada, 1 page (Tuesday 14 May 2013).
111. **Best Poster Award – Nanosensors,** Unsang Lee, Taiuk Rim, Sungho Kim, Kihyun Kim, Nanki Hong, Jeong-Soo Lee and M. Jamal Deen, "*Nanowire Biosensors for Uric Acid and Helicobacter-pylori Detection*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
112. Taiuk Rim, Sungho Kim, Kihyun Kim, Unsang Lee, Eunhye Baek, Nanki Hong, M. Jamal Deen, Meyya Meyyappan, Yoon-Ha Jeong, Jeong-Soo Lee, "Low *Power Consumption and High Sensitivity of Silicon-Nanowire Bio-Field-Effect Transistors*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012)**, Seoul, S. Korea, 1 page (12-13 July 2012).
113. **Best Poster Award – Autonomics,** Jimin Kwon, Donghyeok Ho, Jongjin Park, Jin Xiao and M. Jamal Deen, "*Noise Signature Based Energy Management*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
114. Jonghyun Lee, Jihye Hwang, Yunsik Park and M. Jamal Deen, "*Smart Sleep at Home*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012)**, Seoul, S. Korea, 1 page (12-13 July 2012).
115. Jaehook Lee, Chenglong Yao, Murat Artan and M. Jamal Deen, "*Smart Knee*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
116. Hyo-Ryun Lee, Seung-Eun Cho, Linh Tran, Jin Bo and M. Jamal Deen, "*Walking Pattern Analysis and Prediction of Falling Risk*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
117. B.J. Park, B.M. Kim and M.J. Deen, "*CMOS Power Amplifier for Wireless Sensor Systems*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
118. M. R. Dadkhah, M. Deen, S. Shirani, *CMOS Sensors for Compressive Sensing*, **Sixth Int'l Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington, 1 page (6-12 May 2012).
119. E. Nemati, M. Deen, and H. Peng, *Accurate High Resolution Time Digital Converter Array for Single-Photon Image Sensors*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington, 1 page (6-12 May 2012).
120. **Best Poster Award – Autonomics,** Hamid Faryabi, Do Quoc Le, Yong Feng, Duc Minh Le, M. Jamal Deen and Hong June Park, *Developing Smart Garments for Monitoring Vital Signs*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
121. Tran Hoai Thu, Bo Jin, Eunhye Baek, Le Thi Thanh Huyen, Sunghwan Sakong, Hui Wang and M. Jamal Deen, *Age-based Walking Patter Analyzer*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).

122. Yunmin Go, Unsang Lee, Taehyun Kim, Seokyoung Lee and M. Jamal Deen, *Sleeping Environment in Smart Home Using Sensors, Actuators, Computer and Smart Phone*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
123. J-H Kim, M.J. Deen and H-J Park, *ECG Sensors with Motion Artifact Removal Feature*, **Third International Symposium on IT Cnvergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
124. **Best Poster Award – Nanosensors,** Taiuk Rim, Sungho Kim, Kihyun Kim, Eunhye Baek, Un-Sang Lee, Ho-Joon Lee, Chang-Ki Baek, Meyya Meyyappan, M. Jamal Deen, Yoon-Ha Jeong and Jeong-Soo Lee, *PH Responses and cancer Marker Sensing of Si-Nanowire Bio-FET*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
125. Yeongrak Choi, Sangwook Bak, Sungbae Cho, Changsuk Yoon, John Strassner, M. Jamal Deen and James Won-Ki Hong, *Knee Rehabilitation Using Range of Motion Exercise Feedback*, **Second International Symposium on IT Convergence Engineering (ISITCE 2010),** Pohang, S. Korea, 1 page (19-20 August 2010).
126. **Best Poster Award – Autonomics,** Hui Wang, Hyeok-soo Choi, Nazim Agoulmine, M. Jamal Deen and James Won-Ki Hong, *POSTECH's U-Health Monitoring and Support Smart Home for the Elderly*, **Second International Symposium on IT Convergence Engineering (ISITCE 2010),** Pohang, S. Korea, 1 page (19-20 August 2010).
127. KH Kim, T Rim, SH Kim, SH Kim, SH Sakong, DH Cho, SB Jeong, MJ Deen, YH Jeong, M Meyyappan, and JS Lee, *Fabrication and Electrical Characteristics of Si-Nanowire BioFETs*, **Second International Symposium on IT Convergence Engineering (ISITCE 2010),** Pohang, S. Korea, 1 page (19-20 August 2010).
128. Salman Safari-Mohsenabad, P.R. Selvaganapathy, and M.J. Deen, *Microfluidic Reference Electrode for Lab-on-Chip Sensing Application*, **Ontario-on-a-Chip[5] Symposium**, Toronto, Canada, 1 page (20-21 May 2010).
129. W. Shinwari, M.J. Deen and P.R. Selvaganapathy, *Geometric and Conformational Considerations in Biotransistors*, **Sensors, Actuators, and Microsystems General Session, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada,1 page (Wednesday 26 April 2010).
130. S. Majumder, M.M. El-Desouki, O. Marinov and M.J. Deen, *Random Telegraph Signal Noise in CMOS Imagers and Its Impact on Image Quality*, **Fifth International Symposium on Integrated Optoelectronics, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada,1 page (Wednesday 26 April 2010).
131. M.M. El-Desouki, D. Palubiak, M. Deen and Q. Fang, *A Novel CMOS Image Sensor Using Time-Domain Single-Photon Counting*, **Fifth International Symposium on Integrated Optoelectronics, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada,1 page (Tuesday 26 April 2010).
132. D. Palubiak and M.J. Deen, *High-Speed Ultra-Sensitive Biomedical CMOS Imagers*, **Fifth International Symposium on Integrated Optoelectronics, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada,1 page (Tuesday 26 April 2010).
133. S. Safari-Mohsenabad, P.R. Selvaganapathy, A. Derardja and M.J. Deen, *Nanosheet Formation by Electrodeposition and Its Application to Miniaturized Reference Electrodes*, **Electrochemical Engineering for the 21st Century, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada,1 page (Monday 25 April 2010).
134. J.A. Jiménez Tejada, L. Puga Pedregosa, Karam Awawdeh and M.J. Deen, *Towards' a Compact Model for the Injection of Charge into Organic/Polymeric Semiconductors*, **International Symposium on Flexible Electronics 2010 (ISFE'10),** 1 page abstract, Palma de Mallorca, Spain (11-14 April 2010).
135. H.A. Hamid and M.J. Deen, *Modeling Transport of III-V Nitride-based Quantum Wires*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).
136. M.M. El-Desouki, M.J. Deen and Q. Fang *A CMOS Single-Photon Avalanche-Photodetector Camera-on-a-Chip for Biomedical Applications*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).
137. H. Kassiri B., M.J. Deen and M. Margarit, *An Ultra Wideband CMOS LNA for 3.1 to 10.6GHz UWB Medical Application*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).
138. O. Marinov and M.J. Deen, *Physically-based Compact Modeling of Organic Thin-Film Transistors*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).
139. Mohamed A. Naser, M.J. Deen and D. A. Thompson, *Theoretical Modeling of Quantum Dot Infrared Photodetectors*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).
140. S. SafariMohsenabad, P.R. Selvaganapathy and M.J. Deen, *Microfabricated True Reference Electrode for Sensing Applications*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).

141. Gefei Zhou, M.M. El-Desouki, and M.J. Deen, *A 1.5V, 2.4-GHz CMOS LNA and Mixer Receiver Front-End*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).
142. Wei Zhou and M.J. Deen, *Portable Monitoring Device for Patient Home Care*, **14th Canadian Semiconductor Technology Conference** and **Nano and Giga Challenges in Electronics, Photonics and Renewable Energy**, 1 page, Hamilton, Ontario, Canada (10-14 August 2009).
143. R. Picos, B. Iñiguez, E. Garcia-Moreno, M. Deen and M. Estrada, *A Mobility Model for Non Isotropic OTFT*, **Thin Film Transistors 9, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii, 1 page (Tuesday 14 October 2008).
144. W. Liu, H.M. Jafari, S. Hranilovic, M.J. Deen, *Time Domain Analysis of UWB Breast Cancer Detection*, **23rd Biennial Symposium on Communications**, Kingston, Ontario, 1 page (29 May -1 June 2006).
145. O. Marinov and M.J. Deen, *Performance of Organic Thin Film Transistors*, **Twelfth Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 236 (16-19 August 2005).
146. O. Marinov and M.J. Deen, *Charge Localization in Polymeric MOS Capacitors*, **Twelfth Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 235 (16-19 August 2005).
147. N. Faramarzpour, M.J. Deen and S. Shirani, *Detailed Signal and Noise Modeling and Analysis of CMOS Active Pixel Sensors*, **Twelfth Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 224 (16-19 August 2005).
148. S.M. Abdelsayed, M.J. Deen and N.K. Nikolova, *A Linear-Class Power Amplifier for Low-Power Applications*, **Twelfth Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 199 (16-19 August 2005).
149. F.M. Mohammedy, O. Hulko, B.J. Robinson, D.A. Thompson, M.J. Deen and J.G. Simmons, *Growth and Characterization of GaAsSb Metamorphic Samples on an InP-Substrate* **Twelfth Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 185 (16-19 August 2005).
150. Y. Ardeshirpour, M.J. Deen and S. Shirani, *Evaluation of CMOS based Photodetectors for Low Light Level Applications*, **Twelfth Canadian Semiconductor Technology Conf.**, Ottawa, Canada, p. 162 (16-19 August 2005).
151. S. Naseh, M.J. Deen and M.H. Kazemeini, *Very Low-Voltage Operation Capability of CMOS Ring Oscillators and Logic Gates*, **Twelfth Canadian Semiconductor Technology Conf.**, Ottawa, Canada, p. 151 (16-19 August 2005).
152. J.C. Ranuarez, M.J. Deen and C.H. Chen, *Temperature Effects in CMOS Microwave Distributed Amplifiers*, **Twelfth Canadian Semiconductor Technology Conference**, Ottawa, Canada, p 137 (16-19 August 2005).
153. MM. El-Desouki, M.J. Deen and Y.M. Haddara, *A Class-E Low-Power Amplifier for Short Range Applications*, **Twelfth Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 136 (16-19 August 2005).
154. W. Liu, H.M. Jaffari, S. Hranilovic and M.J. Deen, *Ultra-wideband Radar Imaging System for Biomedical Applications*, **Twelfth Canadian Semiconductor Technology Conf.**, Ottawa, Canada, p. 52 (16-19 August 2005).
155. **Best Paper Award – Micronet Annual Workshop,** R. Murji, M.J. Deen**,** *A Wideband Frequency Doubler Suitable for Low-Power Transceiver Applications*, **Micronet R&D Annual Workshop,** Ottawa, ON, pp. 11-12 (10-11 May 2005).
156. Kalyan Bhattacharyya and M. Jamal Deen, *1.2V CMOS Traveling Wave Amplifiers for Applications at 10GHz and Beyond Using Coplanar Waveguides as On-chip Inductance***, Eleventh Canadian Semiconductor Technology Conference**, Ottawa, Canada, p 205 (18-22 August 2003).
157. Yasser M. El-Batawy, M. Jamal Deen, *Modeling and Optimization of Mushroom Waveguide Photodetector* (*Mushroom-WGPD*), **Eleventh Canadian Semiconductor Tech. Conf.**, Ottawa, Canada, p. 186 (18-22 Aug. 2003).
158. Ognian Marinov, M. Jamal Deen, Jianfei Yu, George Vamvounis, Steven Holdcroft and William Woods, *Variable Current Transport in Polymer Thin Film Transistors***, Eleventh Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 44 (18-22 August 2003).
159. N. R. Das, M.J. Deen, *Effect of Interface-Trapping on the Frequency Response of a Photodetector*, **Tenth Canadian Semiconductor Technology Conference**, Ottawa, Canada (13-17 August 2001).
160. Y.G. Xiao, M.J. Deen, *Frequency Response of Resonant-Cavity Avalanche Photodiodes*, **Tenth Canadian Semiconductor Technology Conference**, Ottawa, Canada (13-17 August 2001).
161. N. R. Das, M.J. Deen, On the Optimum *Design of the Front-End PIN-HBT OEIC Photoreceiver*, **Tenth Canadian Semiconductor Technology Conference**, Ottawa, Canada (13-17 August 2001).
162. M.J. Deen, O. Marinov, *Substrate Biasing and Low Frequency Noise in PMOS FETs from a 0.18μm CMOS Technology*, **Tenth Canadian Semiconductor Technology Conference**, Ottawa, Canada (13-17 August 2001).
163. C.H. Chen and M.J. Deen, *Extraction of the Induced Gate Noise, Channel Noise and Their Correlation in Submicron MOSFETs from RF Noise Measurements*, **Micronet R&D Annual Workshop**, Aylmer, Quebec, pp. 101-102 (19-20 April 2001).
164. C.H. Chen and M.J. Deen, *A General Procedure for High Frequency Noise Parameter De-embedding of MOSFETs by Taking the Capacitive Effects of Metal Interconnections into Account*, **Micronet R&D Annual Workshop**, Aylmer,

Quebec, pp. 103-104 (19-20 April 2001).

165. M.J. Deen, S.L. Rumyantsev, I. Glick, A. Smozh, M. Westcott and D. Waechter, *Nature of Low Frequency Noise in CdSe Thin Film Transistors*, **The 198th Meeting of the Electrochemical Society** (Thin Film Transistor Technologies TFTT-V) Phoenix, Arizona, p. 788 (22-27 October, 2000).
166. C.H. Chen and M.J. Deen, *Channel Thermal Noise Extraction and Model Verification of MOSFETs*, **Micronet 10th Anniversary Workshop**, Ottawa, pp. 87-88 (27-28 April 2000).
167. M. Margarit, J. Tham, R. Meyer and M.J. Deen, *A Low Noise, Low Power VCO with AAC for Wireless Applications*, **Micronet 10th Anniversary Workshop**, Ottawa, pp. 89-90 (27-28 April 2000).
168. F.J. De la Hidalga-W., M.J. Deen, E.A. Gutierrez-D., and F. Balestra, *Low Temperature D.C. Characteristics of Deep Submicron n-MOSFETs with a Forward-Biased Substrate*, **The 196th Meeting of the Electrochemical Society** (Fifth Symposium on Low Temperature Electronics), Honolulu, Hawaii (17-22 October 1999).
169. C.W. Chu, M.J. Deen, R.H. Hill, *Fabrication of Sub-ppm NO_x Sensors*, **Ninth Canadian Semiconductor Technology Conference** (CSTC '99), p. 73, Ottawa, Canada (10-13 August, 1999).
170. W.S. Kwan, M.J. Deen and C.H. Chen, *Hot Carrier Effects on RF Noise Characteristics of LDD NMOSFET*, **Ninth Canadian Semiconductor Technology Conference** (CSTC '99), p. 79, Ottawa, Canada (10-13 August, 1999).
171. V. Labhe, M.J. Deen and G. Duerden, *Gate-Controlled Lateral PNP (GC-LPNP) Devices Designed in 0.35 μm CMOS Technology - Characteristics and Circuit Applications*, **Ninth Canadian Semiconductor Technology Conference** (CSTC '99), p. 87, Ottawa, Canada (10-13 August, 1999).
172. S. An, P. Singh, F. Shepherd, M.J. Deen, E. Griswold and W.R. Clark, *Low Resistance Contacts to P-Type InP*, **Ninth Canadian Semiconductor Technology Conf.** (CSTC '99), p. 120, Ottawa, Canada (10-13 August, 1999).
173. S. An, M.J. Deen, W.R. Clark and F. Shepherd, *Equivalent RC-model of Generic Avalanche Photodetector*, **Ninth Canadian Semiconductor Technology Conference** (CSTC '99), p. 160, Ottawa, Canada (10-13 August, 1999).
174. C-H. Chen and M.J. Deen, *Direct Extraction of the Channel Thermal Noise in MOSFETs from RF Noise Measurements*, **9th Canadian Semiconductor Tech. Conf.** (CSTC '99), p. 163, Ottawa, Canada (10-13 Aug. 1999).
175. S. Naseh and M.J. Deen, *A New Procedure for Extraction of Base and Emitter Series Resistance of Bipolar Transistors*, **Ninth Canadian Semiconductor Tech. Conf.** (CSTC '99), p. 176, Ottawa, Canada (10-13 Aug. 1999).
176. Yegao Xiao and M.J. Deen, *Two-Dimensional Gain Profiles of InP/InGaAs SAGCM Avalanche Photodiodes Modeled by Using a Simplified Stochastic Approach*, **Ninth Canadian Semiconductor Technology Conference** (CSTC '99), p. 193, Ottawa, Canada (10-13 August, 1999).
177. C.W. Chu, M.J. Deen and R. H. Hill, *Novel Sensors for Sub-ppm NO_x Detection*, **The 195th Electrochemical Society Meeting** (Transportation Sensors), Seattle, Washington, p. 1136 (2-6 May 1999).
178. Y. Xiao, M.J. Deen and A. Bandyopadhyay, *Time Domain Modeling of Temperature Dependent Characteristics of InP/InGaAs Avalanche Photodiodes Based on a Simplified Approach*, **The 193rd Electrochemical Society Meeting** (Twenty-Eight Symposium on State-of-the-Art Program on Compound Semiconductors), San Diego, California, pp. 409-1 to 405-2 (3-8 May 1998).
179. P. Kolev, M.J. Deen, H.C. Liu, M. Li, M. Buchanan, Z.R. Wasilewski, *Asymmetry in the Dark Current Low Frequency Noise Behavior of Quantum Well Infrared Photodetectors (QWIPs)*, **Eight Canadian Semiconductor Technology Conference**, p. 62, Ottawa, Canada (12-15 August, 1997).
180. S. An, A. Bandyopadhyay, M.J. Deen, L.E. Tarof, *Modeling of Breakdown Voltage (V_{BR}) of InP/InGaAs Separate Absorption Grading, Charge and Multiplication (SAGCM) Avalanche Photodiodes (APD) at Low Temperatures*, **Eight Canadian Semiconductor Technology Conference**, p. 63, Ottawa, Canada (12-15 August, 1997).
181. F.J. De La Hidalga-W, M.J. Deen, E.A. Gutierrez-D., *The Effect of the Forward Biasing the Source-Substrate Junction in n-MOS Transistors for Possible Low Power CMOS IC's Applications*, **Eight Canadian Semiconductor Technology Conference**, p. 104, Ottawa, Canada (12-15 August, 1997).
182. C.H. Chen and M.J. Deen, *Direct Calculation of the MOSFET High Frequency Noise Parameters*, **Eight Canadian Semiconductor Technology Conference**, p. 147, Ottawa, Canada (12-15 August, 1997).
183. M.J. Deen, S. Rumyantsev, J. Orchard-Web, *Low Frequency Noise in Heavily Doped Polysilicon Thin Film Resistors*, **Eight Canadian Semiconductor Technology Conference**, p. 148, Ottawa, Canada (12-15 August, 1997).
184. W.S. Kwan and M.J. Deen *Hot-Carrier Effects on the Scattering Parameters of LDD MOSFETs*, **Eight Canadian Semiconductor Technology Conference**, p. 154, Ottawa, Canada (12-15 August, 1997).
185. P. Kolev, M.J. Deen, and N. Alberding, *Digital Averaging and Recording of DLTS Signals*, **The 191st Electrochemical Society Meeting** (Symposium on Diagnostic Techniques for Semiconductor Materials and Devices), Montreal, Canada, pp. 613-614 (4-9 May 1997).
186. P. Kolev, T. Hardy, M.J. Deen and R. Murowinski, *The Use of Constant Resistance DLTS to Study Proton Radiation Damages in CCD Output MOSFETs*, **The 191st Electrochemical Society Meeting** (Symposium on Diagnostic Techniques for Semiconductor Materials and Devices), Montreal, Canada, pp. 615-616 (4-9 May 1997).

187. P. Kolev and M.J. Deen, *Constant Resistance DLTS in Submicron MOS FETs*, **The 191st Electrochemical Society Meeting** (Fourth International Symposium on Low Temperature Electronics and High Temperature Superconductivity), Montreal, Canada pp. 694-695 (4-9 May 1997).
188. A. Bandyopadhyay, S. An, M.J. Deen and L.E. Tarof, *Modeling of Breakdown Voltage of InP/In GaAs Avalanche Photodiodes at Low Temperatures,* **The 191st Electrochemical Society Meeting** (Fourth Int. Symp. on Low Temperature Electronics and High Temperature Superconductivity), Montreal, Canada, pp. 729-730 (4-9 May 1997).
189. M.J. Deen and Z.X. Yan, *Unique D.C. Characteristics of New Gated Lateral PNP Transistors Using 0.8 μm BiCMOS Technology*, **Seventh Canadian Semiconductor Tech. Conference**, Ottawa, Canada, p. 165 (14-18 Aug. 1995).
190. M.J. Deen, *High Frequency Noise Modeling of Polysilicon Emitter Bipolar Junction Transistors*, **Seventh Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 164 (14-18 August, 1995).
191. V. Van, M.J. Deen, J. Kendall, D.S. Malhi, S. Voinigescu and M. Schroter, *Direct D.C. Extraction of Base and Emitter Resistances in Polysilicon Emitter NPN Transistors,* **Seventh Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 95 (14-18 August, 1995).
192. A. Raychaudhuri, W.S. Kwan and M.J. Deen, *Location and Quantification of the Interface Defects in Stressed MOSFETs Using a Combination of Floating Gate and Transconductance Techniques, Charge Pumping and Low Frequency Noise Methods*, **7th Canadian Semiconductor Tech. Conf.**, Ottawa, Canada, p. 94 (14-18 Aug. 1995).
193. M.J. Deen and J. Ilowski, *The Effects of Bonding Pads on the High Frequency Noise Parameters of Polysilicon Emitter Bipolar Junction Transistors,* **Seventh Canadian Semiconductor Technology Conference**, Ottawa, Canada, p. 170 (14-18 August, 1995).
194. P. Kolev, M.J. Deen & H.C. Liu, *Thermally Activated Current-Voltage Asymmetry in Quantum Well Inter-Subband Photodetectors,* **Seventh Canadian Semiconductor Tech. Conference**, Ottawa, Canada, p. 68 (14-18 Aug. 1995).
195. M. Doan, Z. Buffet & M.J. Deen, *The Effects of A.C. and D.C. Reverse Bias Stress on the D.C. Forward Bias and Low Frequency Noise Characteristics of Polysilicon Emitter Bipolar Junction Transistors,* **Electrochemical Soc. Fall Meeting**, New Orleans, Louisiana, 1 page abstract, two journal pages of extended summary, (10-15 Oct. 1993).
196. R. Murowinski and M.J. Deen, *Low Temperature Characteristics of Large Array Charge Coupled Devices,* **Electrochemical Society Spring Meeting**, Honolulu, Hawaii, 1 page abstract and two journal pages of extended summary, (16-21 May 1993).
197. R. Murowinski, G. Linzhuang and M.J. Deen, *The Effects of Space Radiation Damage on CCD Spatial Noise for the Lyman FUSE Mission,* **SPIE Second International Conference on Scientific Optical Imaging**, Georgetown, Grand Cayman Island, Bahamas, (2-5 December 1992).
198. C.C. Ma, M.J. Deen and R.H.S. Hardy, *Excess Currents in Double Barrier Resonant Tunneling Diodes,* **6th Canadian Semiconductor Technology Conference**, Ottawa, Canada (11-14 August, 1992).
199. A. Ng, M.J. Deen and J. Ilowski, *Determination of the Trap Energy Levels and the Emitter Area Dependence of Noise in Bipolar Transistors from Generation-Recombination Noise Spectra,* **6th Canadian Semiconductor Technology Conference**, Ottawa, Canada (11-14 August, 1992).
200. A. Raychaudhuri, Z.X. Yan and M.J. Deen, *Hysteresis in RTD-Based Multi-Peak Driver Device for Multi-Valued SRAM Cells: Analysis and Simulation Results,* **6th Canadian Semiconductor Technology Conference**, Ottawa, Canada (11-14 August, 1992).
201. Z. Xie, M.S. Abdou, A. Lu, M.J. Deen and S. Holdcroft, *Electrical Characteristics of Poly(3-Hexylthiophene) Thin Film MISFETs,* **6th Canadian Semiconductor Technology Conference**, Ottawa, Canada (11-14 August, 1992).
202. M.J. Deen and Y. Zhu, *1/f Noise in n-Channel MOSFETs at High Temperatures,* **Proceedings of the 5th Van Der Ziel Symposium on Quantum 1/f Noise and Other Low Frequency Fluctuations in Electronic Devices**, St. Louis, Missouri, USA (22-23 May, 1992).
203. Y. Zhu and M.J. Deen, *A New Explanation for the Hooge's Empirical 1/f Noise Relation,* **Proceedings of the 5th Van Der Ziel Symposium on Quantum 1/f Noise and Other Low Frequency Fluctuations in Electronic Devices**, St. Louis, Missouri, USA (22-23 May, 1992).
204. A. Ng, M.J. Deen and J.I. Ilowski, *Variation of Low Frequency Noise with Emitter Area in Small Bipolar Junction Transistors,* **Proceedings of the 5th Van Der Ziel Symposium on Quantum 1/f Noise and Other Low Frequency Fluctuations in Electronic Devices**, St. Louis, Missouri, USA (22-23 May, 1992).
205. M.J. Deen, *Low Frequency Noise as a Characterization Tool in InP and GaAs-Based Double Barrier Resonant Tunneling Diodes,* **1st Workshop on Expert Evaluation and Control of Compound Semiconductor Materials and Technologies**, Lyon, France (19-22 May, 1992).
206. A. Ng, M.J. Deen, X.M. Li and O. Berolo, *Cryogenic D.C. and Low Frequency Noise Characteristics of AlAs/GaAs/ AlAs Resonant Tunneling Diodes,* **Electrochemical Society**, Vol. 91-1, pp. 406-407 (May 1991).
207. X.M. Li, M.J. Deen, S. Stapleton, R.H.S. Hardy and O. Berolo, *Low Temperature 1/f Noise Studies of AlAs-GaAs- AlAs Quantum Well Diodes,* **First Int. Conf. on Low Temp. Electronics**, Berkeley, California (23-26 April 1990).

208. H.X. Lian, M.J. Deen, R.H.S. Hardy and S. Stapleton, *Comparison of the Output Power of RTD Oscillators at 300K and 77K,* **First Int. Conference on Low Temperature Electronics**, Berkeley, California (23-26 April 1990).
209. Z.X. Yan and M.J. Deen, *Substrate Bias Effects in DIBL in Short Channel PMOS Devices at 77K,* **First International Conference on Low Temperature Electronics**, Berkeley, California (23-26 April 1990).
210. M.J. Deen and J. Wang, *Substrate Currents in Short Channel PMOS Devices at Cryogenic Temperatures,* **First International Conference on Low Temperature Electronics**, Berkeley, California (23-26 April 1990).
211. B. Jaggi, S.S.S. Poon, B.D. Pontifex, M.J. Deen and B. Palcic, *Development of a Solid State Microscope for Analytical Cytology,* **Conf. of the Society for Analytical Cytology**, Breckenridge, Colorado, (4-9 September 1988).
212. B. Jaggi, S.S.S. Poon, B. Pontifex, M.J. Deen and B. Palcic, *Design and Development of a Solid State Microscope for Image Cytometry,* **Fourth International Conference of Cell Biology**, Montreal, Quebec (14-19 August 1988).
213. M.J. Deen and K.C. To, *Low Temperature Dependence of the Operational Characteristics of CMOS Op-Amps,* **Electrochemical Society**, Vol. 87-2, pp. 544-545 (October 1987) Extended Abstract.
214. M.J. Deen and Jing Wang, *Design Considerations for the Operation of CMOS Inverters at Cryogenic Temperatures,* **Electrochemical Society**, Vol. 87-2, pp. 470-471, Extended Abstract, (October 1987).
215. B. Jaggi and M.J. Deen, *Low Temperature Characteristics of Imaging Photodiode Arrays,* **172nd Meeting of the Electrochemical Society (Low Temp. Electronics Division)**, Abstract 1815 RNP, Honolulu, Hawaii (Oct. 1987).
216. M.J. Deen, J.D. Wade, D. Landheer and M. Buchanan, *The Effect of the Deposition Rate on the Properties of DC Magnetron Sputtered NbN Thin Films,* **Bulletin of the American Physical Soc.**, Vol. 32(3), p. 646 (March 1987).
217. M.J. Deen and E.D. Thompson, *The Design and Simulated Performance of a CARS Spectrometer for Dynamic Temperature Measurements,* **Conf. on Lasers and Electro-Optics (CLEO)**, San Francisco, California (June 1986).
218. M.J. Deen and E.D. Thompson, *The Design and Simulation of a CARS Spectrometer for Dynamic Temperature Measurements Using N_2,* **Bulletin of the American Physical Society**, Vol. 31(3), p. 507 (March 1986).
219. G.L. Larkins, M.J. Deen, E.D. Thompson, C.W. Burkhart, J. Lando, *Langmuir-Blodgett Deposited Poly- Diacetylene Barriers for Josephson Junctions,* **Bulletin of the American Physical Society**, Vol. 28(3), p. 258 (March 1983).
220. M.J. Deen, E.L. Ortiz and E.D. Thompson, *NbN Josephson Junctions with R.F. Sputter Deposited Tunneling Barriers,* **Bulletin of the American Physical Society**, Vol. 31(3), p. 205 (March 1982).

Commissioned Technical Reports

- **Total Commissioned Technical Reports – 64**

1 M.J. Deen, "*Implementation of Physical Models and Algorithms for Organic Photovoltaic Device Simulator*," **Final Report to Siborg (Dr. M. Obrecht)**, 86 pages (25 November 2014).
2 M.J. Deen, "*Implementation of Physical Models and Algorithms for Organic Photovoltaic Device Simulator*," **Second Report to Siborg (Dr. M. Obrecht)**, 50 pages (30 September 2014).
3 M.J. Deen, "*Implementation of Physical Models and Algorithms for Organic Photovoltaic Device Simulator*," **First Report to Siborg (Dr. M. Obrecht)**, 18 pages (9 June 2014).
4 M.J. Deen, "*Long-term ECG monitoring system*," **Final Report to Celestica (Dr. T. Berdinskikh)**, 4 pages (31 October 2013).
5 O. Marinov, A. Abbas-Fard, M.J. Deen and T. Mondal, "*Tests and specifications of capacitive electrodes for ECG* (*C-ELE*)," **Report to Celestica (Dr. T. Berdinskikh)**, 40 pages (7 May 2013).
6 M.J. Deen and Q. Fang, "*Bioimaging for Enhanced Healthcare*", Final Report to **Canada-California Strategic Innovation Partnership (CCSIP)**, 41 pages (1 March 2011)
7 M. Jamal Deen and Mohamad Sawan, "*Nanotechnology – Bio-nanotechnology Expertise in Selected Indian Cities – Delhi, Kanpur, Kharagpur, Kolkata and Pune*," **Report to the Government of Canada (Dr. Aftab Ahmad, Ms. Roohi Ahmed and Ms. Denise Pigeault)**, 29 pages (29 March 2007).
8 M. Jamal Deen, C.H. Chen and O. Marinov, *Preliminary Low Frequency Noise Characterization of nMOS Transistors from Sony's 70 nm Nodes*, **Technical Report to Sony Corp., (Dr. Yukihiro Kiyota)**, 17 pages (22 February 2007).
9 M. Jamal Deen, C.H. Chen and S. Asgaran, *Characterization and Modeling of High-Frequency Noise of MOSFETs and Design of Low-power and Low-noise Amplifiers for Wireless Applications*, **Technical Report to RFMD Inc., (Dr. Ali Rezvani)**, 13 pages (26 November 2006).
10 Guennadi A. Kouzaev and M. Jamal Deen, *Design Data for the Measurement of Eccentric Vias*, **Technical Report to RFMD (Dr. Ali Rahal)**, 13 pages (5 November 2003).
11 Guennadi Kouzaev and M.J. Deen, *Grounding Vias for High-Frequency/High-Speed Applications – A Design Guide*, **Technical Report to Remec-Nanowave (Dr. Ali Rahal)**, 18 pages (25 March 2003).
12 Z. Wang, M.J. Deen and A. Rahal, *Modeling of Integrated Inductors and Resistors for Microwave Applications*, **Technical Report to Remec-Nanowave**, 49 pages (September 2002).

13 Guennadi Kouzaev, M.J. Deen and N. Georgieva, *Physical Modeling of Vias for High Frequency Applications*, **Technical Report to Remec-Nanowave (Dr. Ali Rahal)**, 38 pages (19 December 2001).

14 Zhenwen Wang and Professor M. Jamal Deen, *Modeling of Passive Devices on Alumina Substrates: Inductors and Vias*, **Technical Report to Remec-Nanowave (Dr. Ali Rahal)**, 56 pages (19 December 2001)

15 Guennadi Kouzaev, M.J. Deen and N. Georgieva, *Physical Modeling of Vias for High Frequency Applications*, **Presentation Report to Remec-Nanowave (Dr. Ali Rahal)**, 22 pages (19 December 2001).

16 Zhenwen Wang and Professor M. Jamal Deen, *Modeling of Passive Devices on Alumina Substrates: Inductors and Vias*, **Presentation Report to Remec-Nanowave (Dr. Ali Rahal)**, 17 pages (19 December 2001)

17 Rami Al-Idrissi and Jamal Deen, *Parameter Extraction of Thin Film Resistor and Metal-Insulator-Metal Capacitor Models*, **Technical Report to Remec-Nanowave (Dr. Ali Rahal)**, 41 pages (October 2000).

18 Rami Al-Idrissi and Jamal Deen, *Parameter Extraction of Thin Film Resistor and Metal-Insulator-Metal Capacitor Models*, **Presentation Report to Remec-Nanowave (Dr. Ali Rahal)**, 12 pages (October 2000).

19 Rami Al-Idrissi and Jamal Deen, *An Optimization Approach to Parameter Extraction of Thin-Film Resistor Model*, **Technical Report to Remec-Nanowave (Dr. Ali Rahal)**, 20 pages (October 2000).

20 Rami Al-Idrissi and Jamal Deen, *An Optimization Approach to Parameter Extraction of Thin-Film Resistor Model*, **Presentation Report to Remec-Nanowave (Dr. Ali Rahal)**, 11 pages (October 2000).

21 Zhenwen Wang and Jamal Deen, *Modeling of Spiral Inductors on Alumina Substrates*, **Technical Report to Remec-Nanowave (Dr. Ali Rahal)**, 9 pages (October 2000).

22 Zhenwen Wang and Jamal Deen, *Modeling of Spiral Inductors on Alumina Substrates*, **Presentation Report to Remec-Nanowave (Dr. Ali Rahal)**, 11 pages (October 2000).

23 Zhenwen Wang and Jamal Deen, *Modeling of Passive Microwave Devices - Vias and Inductors*, **Technical Report to Remec-Nanowave (Dr. Ali Rahal)**, 16 pages (October 2000).

24 Zhenwen Wang and Jamal Deen, *Modeling of Passive Microwave Devices - Vias and Inductors*, **Presentation Report to Remec-Nanowave (Dr. Ali Rahal)**, 17 pages (October 2000).

25 C.H. Chen, M.J. Deen, M. Matloubian and Y. Cheng, *Extraction of the Induced Gate Noise, Channel Thermal Noise and Their Correlation in Sub-Micron MOSFETs from RF Noise Measurements*, **Technical Report to Mitel Corporation (Dr. John Miller)**, Kanata, Ontario, 2 pages (31 August 2000).

26 C.H. Chen and M.J. Deen, *A General Procedure for High-Frequency Noise Parameter De-Embedding of MOSFETs by Taking the Capacitive Effects of Metal Interconnections into Account*, **Technical Report to Mitel Corporation (Dr. John Miller)**, Kanata, Ontario, 2 pages (31 August 2000).

27 O. Marinov and M.J. Deen, *Investigation of the Feasibility of Using Low Frequency Noise Measurements as a Reliability Screen for Power Semiconductor Diodes*, **Final Technical Report to D&V Electronics (Dr. V. Loukanov)**, Toronto, Ontario, 112 pages (12 April 2000).

28 C.H. Chen and M.J. Deen, *A General Noise and S-Parameters De-Embedding Procedure for On-Wafer High-Frequency Noise Measurements of MOSFETs*, **Technical Report to Mitel Corporation (Dr. John Miller)**, Kanata, Ontario, 20 pages (31 January 2000).

29 M. Urteaga and M.J. Deen, *Modeling of Passive Microwave Components*, **Technical Report to Nanowave Technology (Dr. Justin Miller),** Etobicoke, Ontario, 140 pages (May 1999).

30 G. Duerden and M.J. Deen, *The Development of Hearing Aid Circuit Applications Using Gate-Controlled Lateral PNP Transistors*, **Tech. Report to Mitel Corp. (Dr. John Miller)**, Kanata, Ontario, 69 pages (18 February1999).

31 W.S. Kwan and M.J. Deen, *Hot-Carrier Effects on the High Frequency Characteristics of a 0.5 μm NMOSFET*, **Technical Report to Mitel Corporation (Dr. John Miller)**, Kanata, Ontario, 29 pages (18 February1999).

32 C.H. Chen and M.J. Deen, *High Frequency Noise Modeling of MOSFETs*, **Technical Report to Mitel Corporation (Dr. J. Orchard-Webb)**, Kanata, 114 pages (9 December 1997).

33 C.H. Chen and M.J. Deen, *High Frequency Noise Modeling of MOSFETs*, **Technical Report to Rockwell Semiconductor Systems, Newport Beach, California (Dr. M. Schroter)**, 114 pages (December 1997).

34 A. Bandyopadhyay, M.J. Deen, L. Tarof and W. Clark, *A Simplified Approach to Time Domain Modeling of Avalanche Photodiodes*, **Nortel Technology Internal Report**, 33 pages (Oct. 1997).

35 M.J. Deen, *Polysilicon Resistor Noise Measurements*, **Technical Report to Mitel Corporation (Dr. J. Orchard-Webb)**, Kanata, 23 pages (29 April 1997).

36 M.J. Deen, *Some Conclusions on Preliminary Experiments on Noise in Lasers*, **Technical Report to Device Reliability Group, Nortel Technology (Jeffrey Yu)**, Ottawa, 23 pages (29 April 1997).

37 M.J. Deen, *Some Conclusions on Preliminary Experiments on Noise in MOSFETs*, **Technical Report to Mitel Corporation (Dr. J. Orchard-Webb)**, Kanata, 13 pages (29 April 1997).

38 S. An, A. Bandyopadhyay, M.J. Deen, L.E. Tarof, W. Clark and A.S. Vetter, *Low Temperature Studies of the*

Breakdown Voltage in Separate Absorption Grading Charge and Multiplication InP/InGaAs Avalanche Photodiodes, **Nortel Technology Internal Report**, 24 pages (1997).

39 S. An, A. Bandyopadhyay, M.J. Deen and L.E. Tarof, *Very Low Temperature Studies of the Breakdown Voltage in Separate Absorption Grading Charge and Multiplication InP/InGaAs Avalanche Photodiodes,* **Nortel Technology Internal Report**, 7 pages (1997).

40 S. An, M.J. Deen, W. Clark and A.S. Vetter, *Low Frequency Noise Diagnostics in Separate Absorption, Grading, Charge and Multiplication Avalanche Photodiodes,* **Nortel Technology Internal Report,** 16 pages (1997).

41 S. An, M.J. Deen, W. Clark and A.S. Vetter, *Low Frequency Noise in Planar Separate Absorption Grading Charge and Multiplication Avalanche Photodiodes,* **Nortel Technology Internal Report**, 20 pages (1997).

42 S. An, M.J. Deen, and A.S. Vetter, *Low Frequency Noise in Planar and Mesa Separate Absorption Grading Charge and Multiplication Avalanche Photodiodes,* **Nortel Technology Internal Report,** 16 pages (1997).

43 M.J. Deen, *Some Conclusions on Preliminary Experiments on Noise in Lasers*, **Technical Report to Device Reliability Group, Nortel Technology** (Jeffrey Yu), Ottawa, 23 pages (29 April 1997).

44 M.J. Deen, *Some Conclusions on Preliminary Experiments on Noise in MOSFETs*, **Technical Report to Mitel Corporation** (Dr. J. Orchard-Webb), Kanata, 13 pages (29 April 1997).

45 A. Bandyopadhyay, M.J. Deen, L.E. Tarof and W. Clark, *Design of InP/InGaAsP/InGaAs SAGCM APDs for 10Gb/ s Data Rates,* **Tech. Report to Adv. Tech. Dept., Bell Northern Research,** Ottawa, 24 pages (5 November 1996).

46 M.J. Deen, *Hot-Carrier Effects in nMOSFETs*, **Final Tech. Report - Hot-Carrier MOS Transistors - External Research Department (Mike King), Northern Telecom Limited**, Ottawa, 259 pages (15 October 1996).

47 M.J. Deen and J.I. Ilowski, *Electrical Modeling of Pad Effects and HSPICE Modeling of BJTs and Circuit Noise,* **Technical Report to Device Engineering Group, Northern Telecom Ltd.**, Ottawa, 44 pages (24 August 1994).

48 A. Raychaudhuri, W.S. Kwan, M.J. Deen, I. Calder and M. King, *TSUPREM4 (6.0) Virtual Factory,* **Technical Report to Device Engineering Group, Northern Telecom Limited**, Ottawa, 55 pages (July 1994).

49 V. Van, D.S. Malhi, J. Kendall, J. Ilowski and M.J. Deen, *BJT SPICE Parameter Extraction Model for IC-CAP,* **Technical Report to Device Engineering Group, Northern Telecom Limited**, Ottawa, 128 pages (June 1994).

50 A. Raychaudhuri, J. Kolk, M.J. Deen and M. King, *Matrix Simulation, Measurement, and Modeling of Impact Ionization Effects in NMOS Transistors, and Decoupling of Source and Drain Resistances,* **Technical Report to Device Engineering Group, Northern Telecom Limited**, Ottawa, 95 pages (September 1993).

51 M.J. Deen, A.A. Naem and L. Chee, *Temperature Effects on Heavily Doped Polycrystalline Films,* **Technical Report to Silicon Technology Division, Northern Telecom Limited**, Ottawa, 30 pages (July 1993).

52 A.A. Naem, M.J. Deen and L. Chee, *Temperature Effects on the Resistivity of Heavily Doped Polycrystalline Titanium Silicide,* **Tech. Report to Silicon Tech. Div., Northern Telecom Limited**, Ottawa, 28 pages (July 1993).

53 M.J. Deen and J.J. Ilowski, *Low Frequency Noise in MOSFETs*, **Technical Report to Device Engineering Group, Northern Telecom Limited**, Ottawa, 7 pages (May 1993).

54 M.J. Deen and J.J. Ilowski, *Noise Characterization and Modeling of Poly-Emitter BJTs at Microwave Frequencies,* **Tech. Report to Device Eng. Group, Northern Telecom Ltd.**, Ottawa, 4 pages (April 1993).

55 M.J. Deen, J.J. Ilowski and P. Yang, *Low Frequency Noise in Polysilicon-Emitter Bipolar Junction Transistors,* **Technical Report to Device Engineering Group, Northern Telecom Limited**, Ottawa, 47 pages (February 1993).

56 M.J. Deen and J.J. Ilowski, *Microwave Noise Characterization of Poly-Emitter Bipolar Junction Transistors,* **Technical Report to Device Engineering Group, Northern Telecom Ltd.**, Ottawa, 8 pages (22 December 1992).

57 M.J. Deen, *Low Temperature MOS Microelectronics*, **Technical Report to Device Engineering Group, Northern Telecom Electronics Limited**, Ottawa, 122 pages (26 August 1990).

58 M.J. Deen, *Characterization and Analysis of PMOS Devices for Cryo-CMOS Microelectronics,* **Technical Report to Device Engineering Group, Northern Telecom Electronics Limited**, Ottawa, 112 pages (11 August 1989).

59 M.J. Deen, D. Landheer, J.D. Wade, G.I. Sproule and M.D. Denhoff, *NbN Thin Films Reactively Sputtered with a High Field DC Magnetron,* **Technical Report to Herzberg Institute of Astrophysics, National Research Council**, Ottawa, 23 pages (March 1988).

60 M.J. Deen, *Electrical, Chemical and Structural Characterization of NbN Thin Films Reactively Sputtered with a High Field DC Magnetron,* **Technical Report to Herzberg Institute of Astrophysics, National Research Council**, Ottawa, 24 pages (April 1987).

61 M.J. Deen, *The Effect of the Deposition Rate on the Properties of DC Magnetron Sputtered NbN Thin Films,* **Tech. Report to Herzberg Institute of Astrophysics, National Research Council**, Ottawa, 19 pages (October 1986).

62 M.J. Deen, *Optical Down-Conversion Experiments Using $LiNbO_3$ and HgCdTe Photodiodes*, **Technical Report to CSEE Dept., Lehigh University for a NASA Lewis Research Center Research Grant**, 35 pages (April 1986).

63 M.J. Deen, *The Design and Simulated Performance of a CARS Spectrometer Using Solid State Detectors,* **Final**

Technical Report to NASA Lewis Research Center, Cleveland, Ohio, 175 pages (July 1985).

64 M.J. Deen and E.D. Thompson, *The Feasibility of Using Solid State Detectors for CARS Combustion Diagnostics*, **Technical Report to NASA Lewis Research Center**, Cleveland, Ohio, 120 pages (December 1984).

EXTERNAL COLLABORATIONS (SEVERAL PROJECTS IN SOME CASES)

Current Collaborations

- Dominion Astrophysical Observatory, National Research Council, Victoria, Canada – Tim Hardy and Rick Murowinski, **Large array charge coupled devices and CMOS imaging systems** (1989 -).
- Hamilton Health Sciences – David Armstrong and Frances Tse, **Ultra-violet (UV) fluorescence imaging for medical applications** (2006 -).
- Hamilton Health Sciences – Tapas Mondal, **Cardiologic health monitoring systems for long term applications** (2011-).
- Nanowave Technology, Etobicoke, Ontario, Canada - Justin Miller and Ali Rahal, **Modeling of active and passive microwave components** (1998-).
- CINVESTAV, Mexico City, Mexico – Magali Estrada and Antonio Cerdeira, **Emerging semiconductor devices and modeling** (1996 -)
- INAOE, Puebla, Mexico – Javier De La Hidalga-W., Roberto Murphy and Edmundo Gutierrez, **Semiconductor device physics and applications** (1996 -).
- Calcutta University – Nikhil R. Das and Prasanta K. Basu, **Modeling of photonic components** (1999-).
- Peking University – SHRIME, Shanghai, China, **Electronic Systems for Biomedical Applications** (2012 -).
- Pohang University of Science and Technology POSTECH), Pohang, South Korea – Bumman Kim, Jeong-Soo Lee and James Hong, **Information and communications technologies (ICT) for U-health and U-environment** (2009 -).
- Public Health Agency of Canada – Mohamed Karmali, **Micro- and nano-systems for health and environmental applications** (2006 -).
- Universidade Estadual de Campinas, Campinas (UNICAMP, SP – Brasil – Jacobus Swart, **Optical sensors and their applications** (2006 -).
- Universidad de Granada, Granada Spain – Juan Antonio Jiminez Tejada, **Physics and Modeling of Emerging Semiconductor Devices** (2007 -).
- Universite de Montpellier II (CEM2), France – Fabien Pascal, **Noise studies in nanoelectronic components** (2002-).
- University Health Network, Toronto – Louis Liu, **UV fluorescence imaging for medical applications** (2005-).
- Universitat Rovira I Virgili, Tarragona, Spain – Benjamin Iniguez and Lluis Marsal, **Compact modeling of inorganic and organic semiconductor devices** and **Nanotechnology** (2002 -).
- University of Toronto, Toronto – J. Stewart Aitchison, B**iosensors and system integration** (2005-).
- University of Waterloo, Waterloo – Vassili Karanassios, **UV fluorescence imaging system** (2005-).
- Xerox, Mississauga, Canada –Yiliang Wu, **Plastic microelectronics for sensing applications** (2011 -).
- Zhejiang University, Zhejiang, China – Shurong Dong and Tao Wang, **Nanoscale devices and applications** (2011 -)

Previous Collaborations

- Bell Northern Research, Ottawa, Canada - Larry Tarof, Tony Vetter and Bill Clark, **Modeling and characterization of advanced avalanche photodiodes for opto-electronic communications applications** (1991-1999).
- Communications Research Center, Ottawa, Canada - O. Berolo, **GaAs-based resonant tunneling diodes (RTDs) - physics, digital, analog and optical applications** (1989-92).
- Conexant/Rockwell Semiconductor Systems, Newport Beach, California – Y. Cheng, M. Matloubian, M. Schroter, Z.X. Yan, **High frequency noise, parameter extraction and modeling of MOSFETs** (1997-2002).
- Eindhoven University of Technology, Eindhoven, Nederland - T.G.M. Kleinpenning, **Analytical modeling of noise in MOSFETs** (1991-92).
- Gennum Corporation, Burlington, Ontario, Canada - Jim Kendall, **Studies in bipolar junction transistors** (1995-2005).
- Gennum Corporation, Burlington, Ontario, Canada – Denis Salvador, **Radio-frequency integrated circuits (RFICs) for transceiver applications** (2002-2008).
- IBM Corporation, Burlington – R. Anna and J. Peckarik, **High frequency noise, parameter extraction and modeling of MOSFETs** (2006-2010).
- Institute for Microstructural Sciences, National Research Council, Ottawa – Dolf Landheer, **Microelectronic sensors for biological applications** (2004-2011).
- Institute for Microstructural Sciences, National Research Council, Ottawa - H.C. Liu, **RTDs and infrared detectors for electronic and infrared applications** (1993-1999).

- Ioffe Institute, Russia – Serguei Rumyantsev and Michael Levinhstein, **Noise in Semiconductor Devices** (1996-2001).
- Mitel, Ottawa, Ontario, Canada - J. Orchard-Webb, J. Miller, **Analog MOSFETs** (1995-2001).
- National Semiconductor Corporation, Santa Clara, California - R. Bashir, R. Taylor, **Low frequency noise in bipolar transistor** (1997 - 2000).
- Nortel Networks, Ottawa, Canada - S. McGarry, **Plastic transistors** (1998-2002).
- Northern Telecom Electronics, Ottawa - M. Doan, R. Hadaway, J. Ilowski, A. Naem, A. Ng, **Low and high frequency noise, high field effects and parameter extraction in MOSFETs, BJTs and BiCMOS circuits** (1987-1995).
- Perkin Elmer, Montreal Quebec - R. Henderson, **Modeling of advanced photodetectors for fiber communications** (1998- 2002).
- RFMD, California - Ali Rezvani, **High frequency noise, parameter extraction and modeling of MOSFETs** (2004-2007).
- RIM, Waterloo, Ontario– Mark Carragher, Dave Jaworsky, **RFICs for transceiver applications** (2002-2003).
- Skyworks/Conexant, Ottawa, Ontario, Canada – M. Cloutier, **RFICs for transceiver applications** (2002-2003).
- Skyworks, Newport Beach, California – Y. Cheng, **High frequency noise, parameter extraction and modeling of MOSFETs** (2003-2005).
- Sony Corporation, Japan – Yukihiro Kiyota, **High frequency noise, parameter extraction and modeling of MOSFETs** (2004-2007).
- Texas Instruments, Dallas, U.S.A. - A.C. Seabaugh, **Noise studies and multi-valued memory applications of InP-based RTDs** (1990-92).
- University of Tromso, Tromso, Norway - Xuyuan Chen, **Noise studies in advanced bipolar transistors** (1999-2004).
- Xerox, Mississauga, Canada – Beng Ong and Yiliang Wu, **Plastic microelectronics** (2003-2006).
- Zarlink, Kanata, Ottawa, Ontario, Canada – Brendon Manning, **RFICs for transceiver applications** (2002-2003).

SHORT COURSES, TUTORIALS, PANELS AND WORKSHOPS

Total Short Courses and Workshops– 21

1. *Panel Chair*, "*Smart X*" at **2019 International Academicians Summit and APEC Innovation Technology Dialog 2019**, Chengdu, China (Tuesday 15 October 2019).
2. *Panelist*, "*Smart X*" at **2019 International Academicians Summit and APEC Innovation Technology Dialog 2019**, Chengdu, China (Tuesday 15 October 2019).
3. *Panelist*, "*Summit on High Performance Computing and Communications for Smart Cities*" in **2019 IEEE HPCC/Smart City/DSS 2019 (21st International Conference High Performance Computing and Communications / 17th International Conference on Smart City / 5th International Conference on Data Science and Systems)**, p. 21, Zhangjiajie, China, (10 August 2019).
4. *Panelist*, "*Achieving Trustworthy Cyber Systems: Challenges and Strategies*" in **2017 IEEE ISPA (International Symposium on Parallel and Distributed Processing with Applications) / IEEE IUCC (International Conference on Ubiquitous Computing) / SpaCCS (10th International Conference on Security, privacy and Anonymity in Computation, Communication and Storage) Joint Plenary Panel Session**, p. 28, Guangzhou, China, (14 Dec 2017).
5. *Panelist*, "*Made in China* 2025 *and Industry* 4.0", Yiwu, China, (19 September 2017), **Many entrepreneurs, company scientists/engineers and academics attended the International Academicians Forum**.
6. *Invited Tutorial*, "*Unprecedented Vision: From Quantum Dots to Silicon Imagers*," Fortaleza, Brazil (Tuesday 29 August 2017). **Many students, academics, entrepreneurs, and company scientists/engineers attended the Tutorial (100 minutes)**.
7. *Invited Tutorials*, "'*Cyber-Physical-Social Systems - From Components to Ubiquitous Intelligence*," School of Software Technology, Dalian University of Technology, Dalian, China (Tuesday 11 – Thursday 13 July 2017)., **Many students, and faculty members attended the Tutorials (10 hours)**. http://ssdut.dlut.edu.cn/info/1111/10149.htm
8. *Panelist*, "*Biomedical Technologies – Challenges and Opportunities*", **Philippine Council for Health Research and Development (PCHRD) Conference: Going Global: Increasing International Partnerships in Research and Innovation for Health,** Manila, Philippines, 2 pages (17 March 2016). **Many students, doctors, entrepreneurs, and company scientists/engineers attended the workshop**.
9. *Panel Chair and Panelist*, "*Challenges and Opportunities in Ubi-HealthTech: Computing, Communications, Data Analytics, Health Information, Medical, Security, Sensors and Software*", **2nd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2015), Beijing, China (Friday 29 May 2015). **Many graduate students attended the panel session**.

10. *Sensor Technology and Water Quality Monitoring*- 2-hour presentation, **2014 Gerhard Jirka Summer School (GJSS) on Environmental and Fluid Mechanics: *Modeling and Its Role in Sustainable Development,* Hong Kong University of Science and Technology (HKUST)**, (Saturday 13 December 2014).
11. *Pervasive Health Care Technologies* - 3-hour presentation, Workshop at **Second Saudi International Electronics, Communications and Photonics Conference** (**SIECPC**), Riyadh, Saudi Arabia (Saturday 27 April 2013).
12. *Noise Issues and Modeling in Silicon-based Devices*- 1-hour presentation, **Second International Training Course in Compact Modeling – European Research Network**, Tarragona, Spain (28-29 June 2012).
13. *Noise Issues in CMOS Devices and Circuits*- 1-hour presentation, **First International Training Course in Compact Modeling**, Tarragona, Spain (30 June – 1 July 2010).
14. *RF Noise Modeling in MOSFETs Including Gate Current Effects*- 1-hour presentation, **IEEE International Microwave Symposium Workshop – Noise Measurements and Modeling for CMOS**, San Francisco, CA (11 June 2006).
15. *Noise Theory, High-frequency Noise Characterization, HF Noise Modeling of MOSFETs, Design Strategies of LNA, Noise Research Activities at McMaster* – C.H. Chen and M.J. Deen, **Short Course at Sony Semiconductor Corporation**, 7 lectures (Thursday 28 July 2005).
16. *RF Noise in MOSFETs – Experiments*; *RF Noise Modeling of MOSFETs*; and *Effect of the Gate Tunneling Current on the RF Noise of MOSFETs* - M.J. Deen, **Short Course at Seoul National University**, 3 lectures (30 May, 2005).
17. *High-Frequency Noise Modeling of MOSFETs for RF IC Applications – M.J. Deen and C.H. Chen* - 1-hour presentation, **Fabless Semiconductor Association (FSA) Modeling Workshop**, San Jose, CA (15 September 2004).
18. *CMOS Device Noise Extraction and Performance – M.J. Deen and C.H. Chen* - 1-hour presentation, International **Microwave Symposium (IMS)/Radio Frequency Integrated Circuits (RFIC) Sponsored Workshop**, Texas (June 2004)
19. *RF Noise Modeling of MOSFETs* - 1-hour presentation, **Fabless Semiconductor Association (FSA) Modeling Workshop**, Santa Clara, CA (Thursday 12 October 2000).
20. *High Frequency Noise Measurements and Modeling of MOSFETs* - 1-hour presentation, **Tutorial Short Course at the IEEE International Conference on Microelectronic Test Structures (ICMTS 99)** (Monday March 15 1999).
21. *Semiconductor Devices - Parameter Extraction Techniques, Microwave Noise Modeling and Circuit Applications*, **Research Short Course at Delft Institute of Microelectronics and Submicron Technology (DIMES), Technical University of Delft**, 8 lectures (June 23, 25, 30 and July 7, 1997).

INVITED SEMINARS

- **Total Invited Seminars – 271**

1. *Bioimagers – Having Fun at the Intersection of Engineering and Sciences*, ***Distinguished Lecture,*** School of Engineering Sciences, Huazhong University of Science and Technology, Wuhan, China, (Saturday 12 October 2019).
2. *Smart Sensors for Ubiquitous Healthcare – AI is a Key Enabler*, ***Distinguished Lecture,*** School of Computer Science and Technology, Chongqing University of Posts and Telecommunications, Chongqing, China, (Tues 27 August 2019).
3. *Smart Sensors & Smart Homes for U-Healthcare – AI is a Key Enabler*, ***IEEE Electron Device Society Distinguished Lecture,*** "Frontiers in New Emerging Technology (FINETECH)", IEEE EDS Mid Hudson Chapter & AI Hardware Center at IBM Research, SUNY Polytechnic University, Albany, New York, USA (Thursday 22 August 2019).
4. *Smart Sensors for Environmental Applications*, ***Distinguished Lecture in 111 Project,*** School of Microelectronics, Xidian University, Xian, China (Tuesday 9 July 2019).
5. *Smart Sensors for Water Quality Monitoring*, ***Distinguished Lecture,*** School of Information Science and Electronics, Zhejiang University, Hangzhou, China, (Thursday 27 June 2019).
6. *Smart Sensors & Smart Homes for U-Healthcare – AI is a Key Enabler* - **Part II**, ***Overseas Academic Masters Scholar Award Distinguished Lecture,*** School of Software Technology, Dalian University of Technology, Dalian, China (Tuesday 11 June 2019).
7. *Smart Sensors & Smart Homes for U-Healthcare* - **Part I**, ***Overseas Academic Masters Scholar Award Distinguished Lecture,*** School of Software Technology, Dalian University of Technology, Dalian, China (Tuesday 11 June 2019).
8. *Smart Sensors, IoT & Data Analytics - Research, Trends and Opportunities*, ***Distinguished Lecture,*** School of Computer Science, Wuhan University, Wuhan, China (Monday 21 January 2019)
9. *Smart Sensors Smart Sensors & Smart Homes for U-Healthcare*, ***Distinguished Lecture,*** School of Civil Engineering and Mechanics, Huazhong University of Science and Technology, Wuhan, China (Friday 18 January 2019)

10. *Smart Sensors, IoT & Data Analytics - Research, Trends and Opportunities,* ***Distinguished Lecture,*** School of Mechanical Science and Engineering, Huazhong University of Science and Technology, Wuhan, China (Thursday 17 January 2019).
11. *Compact Modeling of Organic Transistors,* ***IEEE Electron Device Society Distinguished Lecture,*** "IEEE EDS Mini-Colloquium on Semiconductor Device Modeling" and "DOMINO" H2020 RISE Project", IEEE Spanish Chapter, Tarragona, Spain (Tues 25 September 2018).
12. *Smart Sensors for the Grand Challenges in Environmental and Health Applications,* ***Distinguished Lecture,*** Shanghai Research Institute of Microelectronics (SHRIME), Peking University, Shanghai, China (Tuesday 28 August 2018).
13. *Low-cost, Compact, Integrated Bioimagers for Healthcare Applications,* ***Distinguished Lecture in 111 Project,*** School of Microelectronics, Xidian University, Xian, China (Monday 23 July 2018).
14. *Smart Sensors and IoT - Research, Trends and Opportunities,* School of Automation, Beihang University, Beijing, China (Thursday 28 June 2018).
15. *Research – A Journey of Wonders, Surprises and Joys,* ***Distinguished Lecture,*** School of Engineering Sciences, Huazhong University of Science and Technology, Wuhan, China (Tuesday 29 May 2018).
16. *Writing a Research Paper,* School of Automation, Beihang University, Beijing, China (Sunday 20 May 2018).
17. *Want Higher Research Impact – Be a Better Communicator,* ***Distinguished Lecture,*** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzen, China (Friday 11 May 2018).
18. *Having Fun While Developing a High-impact Research Career,* ***Distinguished Lecture,*** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzen, China (Wednesday 4 April 2018).
19. *Being a Great Hurdler – Key Ingredients of Your Tenure Dossier,* ***Distinguished Lecture,*** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzen, China (Thur. 8 March 2018).
20. *Research – A Pleasurable Journey,* ***Distinguished Lecture,*** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzen, China (Friday 12 January 2018).
21. *Smart Sensors and IoT – Status and Future,* ***Distinguished Lecture,*** Ningbo Weiji Electrical Power Technology Co. Ltd., Ningbo, China (Tuesday 26 December 2017).
22. *Smart Sensors, Smart Homes and Smart Cities,* ***Distinguished Lecture,*** Hainan University, Haikou, China (Wednesday 20 December 2017).
23. *Smart Sensors and IoT - Research, Trends and Opportunities,* **RAE Distinguished Visiting Fellowship Award Lecture,** Department of Computer Science, College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, UK (Thursday 19 October 2017).
24. *Smart Sensor Systems for Ubiquitous Healthcare,* **PIFI Distinguished Scientist Award Lecture**, Chinese Academy of Sciences – Institute of Microelectronics, Beijing, China (Wednesday 13 September 2017).
25. *Smart Sensor Systems for Ubiquitous Healthcare*, **PIFI Distinguished Scientist Award Lecture**, Chinese Academy of Sciences – Institute of Electronics, Beijing, China (Tuesday 12 September 2017).
26. *Smart Sensors – Research, Trends and Opportunities*, **IEEE Electron Device Society Distinguished Lecture**, Departamento de Engenharia de Teleinformática, Universidade Federal do Ceará (UFC), Fortaleza, Brazil (Monday 4 September 2017).
27. *Biosensors - Playing at the Crossroads of Engineering and the Sciences,* **Distinguished Lecture,** Sichuan University, Chengdu, China (Saturday 15 April 2017).
28. *Smart Sensors for the Grand Challenge in Healthcare*, **UESTC President Distinguished Lecture,** University of Electronic Science and Technology of China (UESTC), Chengdu, China (Friday 14 April 2017).
29. *Smart Sensors for the Grand Challenge in Healthcare*, **Distinguished Lecture,** Jiangxi University of Science and Technology, Ganzhou, China (Tuesday 11 April 2017).
30. *Smart Sensor Systems for Ubiquitous Healthcare*, **Distinguished Lecture,** Qixia District Government Talent Service Center, Nanjing, China (Monday 13 March 2017).
31. *Smart Sensors for Ubiquitous Healthcare*, **Distinguished Lecture,** Nanjing Medical University, Nanjing, China (Friday 10 March 2017).
32. *Smart Sensors for Environmental Applications,* **Distinguished Lecture,** College of Engineering, Nanjing Agricultural University, Nanjing, China (Friday 10 March 2017).
33. *Smart Sensors for Ubiquitous Healthcare*, **Distinguished Lecture,** Jiangsu Life Science & Technology Innovation Park, Nanjing, China (Thursday 9 March 2017).
34. *Smart Sensors – Research, Trends and Opportunities*, **Distinguished Lecture,** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzen, China (Monday 20 February 2017).
35. *Smart Sensors for Health Applications*, **IEEE Electron Device Society Distinguished Lecture,** Departamento de Electrónica y Tecnología de Computadores, Universidad de Granada, Granada, Spain, (Tuesday 11 January 2017).

36. *Smart Sensors and Smart Home: State-of-the-Art and Future Perspectives*, Computer Science Department, University of Science and Technology Beijing (USTB), Beijing, China (Friday 30 December 2016).
37. *Smart Sensors, Smart Homes and Smart Cities*, eHualu-BUPT Research and Technology Development Institute, Yiwu, China (Tuesday 27 December 2016).
38. *Smart Sensors, Smart Homes and Smart Cities*, School of Computer Science and Engineering, Beihang University, Beijing, China (Tuesday 27 December 2016).
39. **Opening Plenary Talk,** *Smart Sensors for Environmental and Health Applications*, **IEEE Electron Device Society Distinguished Lecture,** Global Foundries and IEEE Electron Devices Society "*New Frontiers in Electron Devices*" Global Café, Malta, New York, USA (Thursday 11 August 2016).
40. **World Expert Speaker,** *Smart Sensors for the Grand Challenges in Health and Environmental Applications*, University of the Philippines, Manila, Philippines (Friday 15 July 2016).
41. *Engineering Education and Economic Development - Fact or Fiction*, **IEEE Electron Device Society Distinguished Lecture, Graduate Students Meeting on Electronics Engineering,** Universitat Rovira i Virgili (URV), Tarragona, Spain (Friday 1 July 2016).
42. *Flexible Electronics*: *Opportunities and Challenges*, **IEEE Electron Device Society Distinguished Lecture,** Universitat Rovira i Virgili, Tarragona, Spain (Wednesday 29 June 2016).
43. *Smart Sensors for the Grand Challenges in Health and Environmental Applications*, School of Engineering Science, Huazhong University of Science and Technlogy – HUST, Wuhan, China (Tuesday 24 May 2016).
44. **Global Lecture Series,** *Smart Sensors for the Grand Challenges in Health and Environmental Applications*, Zhejiang University, Hangzhou, China (Friday 13 May 2016).
45. *Smart Sensors and Smart Homes*, Computer Science Department, University of Science and Technology Beijing (USTB), Beijing, China (Wednesday 23 March 2016).
46. *Smart Sensors, Smart Homes and Smart Cities*, Computer Science Department, Shanghai Polytechnic University, Shanghai, China (Sunday 20 March 2016).
47. *Smart Sensors and Smart Homes*, Beijing University of Posts and Telecommunications (BUPT) Research Institute, Yiwu, China (Monday 21 March 2016).
48. *Smart Sensors for the Grand Challenges in Environmental and Health Applications*, IEEE **Electron Device Society Distinguished Lecture,** Departament d'Enginyeria Electronica, Electria i Automatica, Universitat Rovira i Virgili, Tarragona, Spain (Tuesday 1 March 2016).
49. *Smart Sensors, Smart Homes and Smart Cities*, School of Computer Science and Engineering, Beihang University, Beijing, China (Thursday 31 December 2015).
50. *Smart Sensors, Smart Homes and Smart Cities*, Yiwu Institute - National Engineering Lab for Mobile Network Technologies, Beijing University of Posts and Telecommunications, Yiwu, China (Thursday 23 December 2015).
51. *Smart Sensors, Smart Homes and Smart Cities*, National Engineering Lab for Mobile Network Technologies, Beijing University of Posts and Telecommunications, Beijing, China (Tuesday 22 December 2015).
52. *Low-cost Sensors for Drinking Water Quality Monitoring*, IEEE **Electron Device Society Distinguished Lecture,** EE Department, IIT Bombay, India (Monday 14 December 2015).
53. *Biosensors – Life at the Intersection of Engineering and the Sciences*, **IEEE Distinguished Lecture**, Séptimo Seminario de Electrónica y Diseño Avanzado, INAOE, Puebla, Mexico (23-25 September 2015).
54. *Flexible Electronics – Opportunities and Challenges*, **IEEE EDS Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 21 September 2015).
55. *Smart Home Technologies Towards Better Healthcare*, National Academy of Science and Technology, Philippines (Friday 21 August 2015).
56. *Smart Home Technologies Towards Elderly Ubiquitous Healthcare*, EEE Department, Sheffield University, Sheffield, UK (Monday 13 July 2015).
57. *Information and Communications Technologies Towards Better Healthcare in a Smart Home*, College of Computer Science, Zhejiang Normal University, Jinhua, China (Tuesday 23 June 2015).
58. *Flexible Electronics – Opportunities and Challenges*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Tuesday 23 June 2015).
59. *Integration Research and Facilities at McMaster University*, Wuhan National Lab for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China (Tuesday 16 June 2015).
60. *Smart Home Technologies Towards Better Healthcare*, Faculty of Microelectronics, XiDian University, Xi'an, China (Monday 1 June 2015).
61. *Flexible Electronics – Opportunities and Challenges*, Faculty of Microelectronics, XiDian University, Xi'an, China (Monday 1 June 2015).

62. *The Role of Computing and Engineering in U-Healthcare, Part* I – *Background and Sensors*, School of Computer Engineering and Science, Shanghai University, Shanghai, China (Friday 22 May 2015).
63. *The Role of Computing and Engineering in U-Healthcare, Part* 2 – *Systems and Computation*, School of Computer Engineering and Science, Shanghai University, Shanghai, China (Friday 22 May 2015).
64. *Smart Home Technologies Towards Better Healthcare*, **Mechanical Engineering Distinguished Lecture Series – Inaugural Lecture,** York University, York, Canada (Tuesday 17 March 2015).
65. *Flexible Electronics – Opportunities and Challenges*, **IEEE EDS Distinguished Lecture**, IEEE EDS Mini-Colloquium at 10th Spanish Conference on Electron Devices, Aranjuez, Spain (Wednesday 11 February 2015).
66. *Flexible Electronics – Opportunities and Challenges*, **IEEE EDS Distinguished Lecture**, Seoul EDS Chapter, Seoul National University, Seoul, South Korea (Tuesday 6 January 2015).
67. *Smart Home Technologies Towards Better Healthcare*, Electrical Engineering Department, Yonsei University, Seoul, South Korea (Tuesday 6 January 2015).
68. *Smart Home Technologies Towards Better Healthcare*, **IEEE Distinguished Lecture**, Engineering Faculty, De La Salle University, Manila, Philippines (Tuesday 16 December 2014).
69. *Unprecedented Vision: From Quantum Dot to Silicon Imagers*, **IAS Distinguished Lecture**, Institute for Advanced Study, Hong Kong University of Science and Technology, Hong Kong (Friday 5 December 2014).
70. *Biosensors – Enjoying Research at the Crossroads of Engineering and the Sciences*, **IEEE Distinguished Lecture**, ECE Department, Dalhousie University, Halifax, Nova Scotia (Tuesday 25 November 2014).
71. *Unprecedented Vision and Sensing with Engineered, Lo-Cost, Integrated Systems with Examples on Medical Applications*, College of Computer & Information Sciences, King Saud University, Riyadh, Saudi Arabia (Monday 17 November 2014).
72. *Nanobonding - A Key Technology for Emerging Applications in Health and Environment*, The Microelectronics Center, (TMEC), National Electronics and Computer Technology Center (NECTEC), Chacheongsao (Bangkok), Thailand (Tuesday 21 October 2014).
73. *Research Projects in Biomedical Engineering at McMaster University*, **IEEE Distinguished Lecture**, EE Department, Chulalongkorn University, Bangkok, Thailand (Monday 20 October 2014).
74. *Smart Home Technologies Towards Better Healthcare*, **IEEE Distinguished Lecture**, ECE Department, Dalhousie University, Halifax, Nova Scotia (Friday 26 September 2014).
75. *Smart Home Technologies Towards Better Healthcare*, St. Francis Xavier University, Antigonish, Nova Scotia (Monday 22 September 2014).
76. *Biosensors – Having Fun at the Intersection of Engineering and the Sciences*, College of Computer Science, Zhejiang Normal University, Jinhua, China (Saturday 16 August 2014).
77. *Microfabricated Sensors for Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture**, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Monday 11August 2014).
78. *Bioimagers – Life at the Intersection of Engineering and Sciences*, Institute of Optoelectronics, Shenzhen University, Shenzen, China (Friday 8 August 2014).
79. *Smart Home Technologies Towards Better Healthcare*, Shenzhen Key Lab of Embeded System Design, College of Computer and Software, Shenzhen University, Shenzen, China (Thursday 7 August 2014).
80. *Biosensors – Working at the Intersection of Engineering and the Sciences*, **IEEE SSSC, CAS/COM Joint Chapters Distinguished Lecture**, University of Macau State Key Laboratory of Analog and Mixed-Signal VLSI (Tuesday 5 August 2014).
81. *Biosensors – Working at the Intersection of Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, Tokyo Institute of Technology, Tokyo, Japan (Wednesday 16 July 2014).
82. *Nanobonding - A Key Enabling Technology Emerging Applications*, Nanoscience Technology Center, University of Central Florida, Orlando, Florida (Thursday 15May 2014).
83. *Biosensors – Having Fun with Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, University of Sao Paolo, Brazil (Friday 11 April 2014).
84. *Biosensors– Playing at the Crossroads of Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, Jiangnan University, Wuxi, China (Friday 11 April 2014).
85. *A Personal Journey "From South to North"*, **IEEE McNaughton Lecture**, IEEE Canada Board of Directors Meeting (Delta Toronto Airport West), Mississauga, Ontario, Canada (Saturday 19 October 2013).
86. *Biosensors – Having Fun with Engineering and the Sciences*, **CEMSE (Computer, Electrical and Mathematical Sciences and Engineering) Dean's Distinguished Lecture Series (Inaugural Lecturer)**, King Abdullah University of Science and Technology (Tuesday 8 October 2013).

87. *Biosensors– Having Fun with Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, IEEE EDS Montreal Chapter, Concordia University, Montreal (Friday 20 September 2013).
88. *Biosensors– Having Fun with Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture and Keynote Presentation at Journee de L'Innovation ReSMiQ**, IEEE CAS Montreal Chapter and Ecole Polytechnique de Montreal, Montreal (Thursday 19 September 2013).
89. *Flexible Electronics – Opportunities and Challenges*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Friday 5 July 2013).
90. *Flexible Electronics – Opportunities and Challenges*, Electronic Materials and Devices Division, Brunel University, London, UK (Thursday 20 June 2013).
91. *Biosensors for Water Engineering– Working in the Crossroads of Engineering and the Sciences*, **Inaugural IAHR Distinguished Lecture**, Jointly organized by Department of Civil and Environmental Engineering, Department of Electronic & Computer Engineering, The International Association of Hydraulic Engineering & Research (IAHR) (Hong Kong Chapter), Hong Kong University of Science and Technology (Friday 31 May 2013).
92. *Biosensors – Playing at the Crossroads of Engineering and the Sciences*, **Winegard Lecture**, University of Guelph (Friday 10 May 2013)
93. *Information and Communications Technologies for Ubiquitous Healthcare*, ECP, King Abdul Aziz City for Science and technology (KACST), Riyadh, Saudi Arabia (Monday 14 January 2013).
94. *Photodetectors - From Quantum Dot to Silicon Imagers*, Prince Sultan Advanced Technology Research Institute (PSATRI), King Saud University, Riyadh, Saudi Arabia (Sunday 13 January 2013).
95. *Information and Communications Technologies for Ubiquitous Healthcare*, **IEEE Electron Device Society Distinguished Lecture**, IEEE Kolkata Photonics Chapter, Institute of Radio Physics and Electronics, University of Calcutta, Kolkata, India (Thursday 20 December 2012).
96. *Integrated Biosensors for Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture**, IEEE Waterloo Chapter, Waterloo (Friday 30 November 2012).
97. *Integrated Biosensors for Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture**, IEEE Communications Society - Toronto Chapter, Ryerson University, Toronto (Friday 21 September 2012).
98. *Bioimagers – Life at the Intersection of Engineering and Sciences*, **IEEE Electron Device Society Distinguished Lecture**, King Abdalla University of Science and Technology- KAUST, Thuwal, Saudi Arabia (Saturday 1 Sep 2012).
99. *Noise Issues and Modeling in Silicon-based Devices*, **IEEE Electron Device Society Distinguished Lecture**, at Second International Training Course in Compact Modeling, Tarragona, Spain (Thursday 28 June 2012).
100. *Information and Communications Technologies for Ubiquitous-Healthcare*, UFR de Mathématiques et Informatique, Université Paris Descartes, Paris, France (Thursday 21 June 2012).
101. *Information and Communications Technologies for Ubiquitous-Healthcare*, College of Mathematics, Physics and Information Engineering, Zhejiang Normal University, Jinhua, China (Saturday 16 June 2012).
102. *Integrated Biosensors for Water Quality Monitoring*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Friday 15 June 2012).
103. *Information and Communications Technology for Ubiquitous-Healthcare*, Electronic Engineering, Universidad de Granada, Granada, Spain (Thursday 24 May 2012).
104. *Information and Communications Technology for Ubiquitous-Healthcare*, School of Computer Science, Simon Fraser University – Surrey Campus (Friday 11 May 2012).
105. *Low-Cost Integrated Low-cost Biosensors for U-Environment and U-Health Applications*, **Distinguished Lecture Series**, ITCE Division, POSTECH, Pohang, S. Korea (Tuesday 3 April 2012).
106. *Integrated Low-cost, High-sensitivity Biosensors for Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture**, IEEE/EDS Mini-Colloquium Organized by Region9 (Latin America) Chapters, Playa del Carmen, Mexico (Tuesday 13 March 2012).
107. *Engineered Biosensors for Environment and Health Applications*, Brockhouse Institute of Materials Research (**BIMR**), McMaster University (Monday 27 February 2012).
108. **Public Lecture" Smart** *Homes*" *and Better Healthcare*, The Hamilton Association for the Advancement of Literature, Science & Art (**HAALSA**), Hamilton (Saturday 4 February 2012).
109. *Biosensors, RFICs and ICT for U-Healthcare*, ITCE Division Workshop, POSTECH, Pohang, S. Korea (Tuesday 31 January 2012).
110. *Information and Communication Technologies in U-Healthcare Research*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Monday 11 July 2011).
111. *Integrated Low-cost, High Sensitivity Biosensors for Water Quality Monitoring*, School of Microelectronics, Xidian University, Xi'an, China (Friday 27 May 2011).

112. *Information and Communication Technologies in U-Healthcare Research*, School of Microelectronics, Xidian University, Xi'an, China (Friday 27 May 2011).
113. *Integrated Low-cost, High Sensitivity Biosensors for Water Quality Monitoring*, Department of Energy Sciences, Sungkyunkwan University, Suwon, S. Korea (Wednesday 25 May 2011).
114. *The Role of Computer Scientists in U-Healthcare Research*, Computer Science Department, POSTECH, Pohang, South Korea (Friday 15 April 2011).
115. *Convergence of Biotechnology, Nanotechnology and Information Technology for U-Health*, Institute of Microelectronics, Chinese Academy of Sciences (IME-CAS), Beijing, China (Tuesday 21 December 2010).
116. *Integrated Low-cost, High-sensitivity Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, IBM T.J. Watson Research Center, Yorktown Heights, New York (Thursday 2 December 2010).
117. *High-Sensitivity, Low-cost Biosensors*, Engineering Science and Mechanics Department, Pennsylvania State University, University Park, PA, USA (Wednesday 20 October 2010).
118. *Low-cost, High-Sensitivity "Water" Sensing Systems*, IBM T.J. Watson Research Center, Yorktown Heights, New York (Monday 27 September 2010).
119. *Convergence of U-Health and U-Environment: A Smart "Medical" Home*, Shanghai Research Institute of Microelectronics (SHRIME), Peking University, Shanghai Branch, China (Tuesday 10 August 2010).
120. *Convergence of U-Health and U-Environment: A Smart "Medical" Home*, Shanghai Jiao Tong University – Minhang Campus, Shanghai, China (Monday 9 August 2010).
121. *Low-cost, High Performance Bioimaging Systems*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Thursday 5 August 2010).
122. *Convergence of U-Health and U-Environment: A Smart "Medical" Home*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Wednesday 4 August 2010).
123. *Low-cost, High Performance Biomedical Photodetection Systems*, **IEEE Electron Device Society Distinguished Lecture**, Mexico City, Mexico (Thursday 22 April 2010).
124. *Convergence of U‐Health and U‐Environment*: *An Autonomic Smart Home*, **IEEE Electron Device Society Distinguished Lecture**, INAOE, Puebla, Mexico (Wednesday 21 April 2010).
125. *Low-cost, High-sensitivity Electrical and Optical Biosensing*, **IEEE Electron Device Society Distinguished Lecture**, INAOE, Puebla, Mexico (Tuesday 20 April 2010).
126. *Electrical and Optical Biosensing Systems for Disease Detection*, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China (Friday 16 April 2010).
127. *Compact Modeling of Organic Thin Film Transistors*, Electrical Engineering Department, Indian Institute of Technology, Delhi, India (Friday 18 December 2009).
128. *Electrical and Optical Biosensing Systems*, Applied Physics Department, Universidad de Granada, Granada, Spain (Friday 2 October 2009).
129. *Convergence of U-Health and U-Environment: An Autonomic Smart Home for the Elderly*, ITCE Division, POSTECH, Pohang, South Korea (Tuesday 25 August 2009) with Prof. Nazim Agoulmine.
130. *Engineered Sensors for Novel Applications*, Institute of Microelectronics, Peking University, Beijing, China (Monday 10 August 2009).
131. *High-sensitivity, Low-cost Biosensors*, Institute of Electronics, Chinese Academy of Sciences, Beijing, China. (Monday 10 August 2009).
132. *Engineered Sensors for Novel Applications*, Shanghai Research Institute of Microelectronics (SHRIME), Peking University, Shanghai Branch, China (Friday 7 August 2009)
133. *Engineered Sensors for Novel Applications*, Institute of Microelectronics and Optoelectronics, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Thursday 6 August 2009).
134. *Engineered Sensors for Biological Applications*, **IEEE Electron Device Society Distinguished Lecture**, Departament d'Enginyeria Electronica, Electria i Automatica, Universitat Rovira i Virgili, Tarragona, Spain (Mon. 29 June 2009).
135. *High-sensitivity, Low-cost Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, Electrical and Computer Engineering Department, POSTECH, Pohang, South Korea (Thursday 21 May 2009).
136. *Low-Voltage, Low-Power RF Integrated Circuits*, Electrical and Computer Engineering Department, POSTECH, Pohang, South Korea (Friday 8 May 2009).
137. *High-sensitivity, Low-cost Biosensors*, Electrical and Computer Engineering Department, University of British Columbia, Vancouver, BC (Friday 16 January 2009).
138. *High-sensitivity, Low-cost Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, Electronic and Information Engineering Department, Hong Kong Polytechnic University, Hong Kong (Wednesday 10 Dec. 2008).
139. *High-sensitivity, Low-cost Integrated Biosensors*, Electronic and Computer Engineering Department, Hong Kong

University of Science and Technology, Hong Kong (Tuesday 9 December 2008).

140. *Low-Voltage, Low-Power Integrated RF Transceiver Circuits*, Electrical and Computer Engineering Department, University of Waterloo, Waterloo, ON Canada (Friday 5 December 2008).
141. *Engineered Sensors and Vision for Biological Applications*, Biology Department, McMaster University, Hamilton ON, Canada (Thursday 4 December 2008).
142. *Compact Modeling of Silicon-based, Low-cost, Highly Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, The Møller Centre, Cambridge, UK (Friday 12 September 2008).
143. *Electronic and Optoelectronic Systems for Emerging Applications in Health and Environmental Sciences*, The Department of Materials, Queen Mary, University of London, London, UK (Friday 11 July 2008).
144. *Electronic and Optoelectronic Systems for Emerging Applications in Health and Environmental Sciences*, Institute for Telecommunications, Technische Universitaet Darmstadt, Darmstadt, Germany (Friday 4 July 2008).
145. *High Sensitivity Silicon-Based Photodetection Systems for Biomedical Applications*, **IEEE Electron Device Society Distinguished Lecture**, Electrical, Electronic, and Automatic Engineering Department, University of Rovira i Virgili, Tarragona, Spain (Wednesday 18 June 2008).
146. *High Sensitivity Silicon-Based Photodetection Systems for Biomedical Applications*, **IEEE Electron Device Society Distinguished Lecture**, EDS Mini-Colloquium, National Technical University of Athens (NTUA), Athens, Greece (Monday 2 June 2008).
147. *Electronic and Optoelectronic Systems for Emerging Applications*, Fachgebiet Hochfrequenztechnik - Photonics, Technische Universität Berlin, Berlin, Germany (Friday 16 May 2008).
148. *Low-voltage, Low-power Integrated RF Transceiver Circuits*, Ferdinand-Braun-Institut für Hoechstfrequenztechnik (FBH), Berlin, Germany (Friday 9 May 2008).
149. *Low-voltage, Low-power Integrated RF Transceiver Circuits*, Fakultät für Informatik, Elektrotechnik und Informationstechnik, Universität Stuttgart, Stuttgart, Germany (Tuesday 22 April 2008).
150. *Contacts Effects Polymeric Thin-film FETs*, **IEEE Electron Device Society Distinguished Lecture**, Electrical, Electronic & Automatic Engineering Department, University of Rovira i Virgili, Tarragona, Spain (Tue 15 April 2008).
151. *Contacts Effects on the Charge Transport in Polymeric Thin-film Field-effect Transistors*, **IEEE Electron Device Society Distinguished Lecture**, Hotel Imperial Terraco, Tarragona, Spain (Tuesday 8 April 2008).
152. *Highly Sensitive, Low-cost Integrated Biosensors*, ECE Department, University of Calgary, Calgary, Alberta (Monday 27 August 2007).
153. *Micro- and Nano-systems for Biomedical Applications*, The Department of Materials, Queen Mary, University of London, London (Friday 3 August 2007).
154. *High-Sensitivity Photodetection Systems for Biological/Medical Applications*, **IEEE Electron Device Society Distinguished Lecture**, Electrical, Electronic, and Automatic Engineering Department, University of Rovira i Virgili, Tarragona, Spain (Monday 30 July 2007).
155. *Low-Power Integrated RF Transceiver Circuits for Short-Range Applications*, Microwave Engineering, Technische Universitaet Berlin, Berlin, Germany (Thursday 12 July2007).
156. *Highly Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, IEEE EDS Shanghai Chapter, Shanghai, China (Friday 8 June 2007).
157. *Micro- and Nano-Systems Research and Integrated Biosensors*, Helix Micro Inc., Xiaoshan, Hangzhou, China (Thursday 7 June 2007).
158. *Micro- and Nano-Systems Research and Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, Zhejiang University IEEE EDS Chapter, Hangzhou, China (Wednesday 6 June 2007).
159. *Micro- and Nano-Systems Research and Integrated Biosensors*, Physics Department, Nankai University, Tianjin, China (Monday 4 June 2007).
160. *High Sensitivity Photodetector Systems for Biomedical Applications*, **IEEE Lasers and Electro-Optics Society (LEOS) Distinguished Lecture**, IRPE, University of Calcutta, Kolkata, India (Tuesday 27 March 2007).
161. *RF Noise Modeling in MOSFETs Including Gate Current Effects*, RF CMOS Compact Modeling Group, IBM Essex Junction, Vermont, USA (Friday 16 February 2007).
162. *Low-Frequency Noise in Silicon Devices*, RF CMOS Compact Modeling Group, IBM Essex Junction, Vermont, USA (Friday 16 February 2007).
163. *Plastic Microelectronics with Organic or Polymeric Thin Film Transistors*, **IEEE Electron Device Society Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 4 September 2006).
164. *Highly Integrated Biosensors*, **The IEEE Electron Devices Society Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 4 September 2006).
165. *Plastic Microelectronics*, **IEEE Electron Device Society Distinguished Lecture**, Universitat Rovira i Virgili,

Tarragona, Spain (Thursday 27 July 2006).

166. *ICs for Low-Power Microsystems*, **The IEEE Electron Devices Society Distinguished Lecture**, University of the Balearic Islands, Mallorca, Spain (Monday 29 May 2006).
167. *Plastic Microelectronics*, The Max Planck Institute, Stuttgart, Germany (Wednesday 24 May 2006).
168. *Some Issues in MOSFET Noise Modeling and Characterization*, IEEE ICMTS 2006 Conference, RF Noise Panel Member and Presenter, Austin Texas (Tuesday 7 March 2006).
169. *Integrated Biosensors*, **The IEEE Electron Devices Society Distinguished Lecture**, University of Central Florida, Orlando, Florida (Saturday 25 February 2006).
170. *Noise and Performance Characteristics of Advanced Silicon Devices and Circuits*, **IEEE Electron Device Society Distinguished Lecture**, Orange County EDS/MTT Joint Chapter, Irvine, California (Thursday 20 October, 2005).
171. *Reliability Effects of RF CMOS ICs*, Seoul National University, Korea (Wednesday 1 June, 2005).
172. *Low-voltage, Low-power CMOS Integrated Circuits for Radio Frequency Applications*, Seoul National University, Korea (Friday 27 May, 2005).
173. *Noise Issues in Deep Sub-micron Devices*, National Semiconductor Corp., Santa Clara, California (5 May 2005).
174. *Micro- and Nano-systems Components Research, A Brief Overview*, Agilent Technologies, Palo Alto, California (Monday 18 April 2005).
175. *High-Frequency Noise Modeling of MOSFETs for RF IC Applications*, RF Microdevices, Greensboro, North Carolina (Thursday 17 February 2005).
176. *Low-Frequency Noise in SiGeC-Based pMOSFETs*, RF Microdevices, Greensboro, North Carolina (17 Feb. 2005).
177. *HF Noise Modeling of MOSFETs for RF IC Applications*, RF Microdevices, San Jose, CA (10 Dec. 2004).
178. *Low-Power RFICs for Transceiver Applications*, **IEEE Electron Device Society Distinguished Lecture**, Eindhoven University of Technology, Eindhoven, Nederland (Friday 16 July 2004).
179. *Low-Power RFICs for Transceiver Applications*, **IEEE Electron Device Society Distinguished Lecture**, Universitat Rovira i Virgili, Tarragona, Spain (Monday 21 June 2004).
180. *Low-Power RFICs for Transceiver Applications*, **IEEE Circuits and Systems Society and Electron Device Society Distinguished Lecture**, Kitchener-Waterloo IEEE Section Seminar (Tuesday 18 May 2004).
181. *Non-conventional FETS or Polymer FETs*, Istanbul Technical University, Turkey (Tuesday 22 July 2003).
182. *Low Frequency Noise in BJTs and FETs*, Istanbul Technical University, Turkey (Monday 21 July 2003).
183. *Electrical Characterization Techniques for Nanoscale Semiconductors and Semiconductor Dielectric Interfaces*, Istanbul Technical University, Turkey (Friday 18 July 2003).
184. *Some Electrical Characterization Techniques for Semiconductor-Silicon Dioxide Interface - A Review*, INAOE**,** Puebla, Mexico (Tuesday 24 July 2003).
185. *Low Power RFICs for Transceiver Applications*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Thursday 24 April 2003).
186. *Electrical Characteristics Polymer Field-Effect Transistors*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Wednesday 23 April 2003).
187. *Microelectronics and Opto-Electronics: A Review of Our Research Program*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Wednesday 23 April 2003).
188. *Une Réflection de Quelques Sujets Intéressants Pour La Recherche du Futur***,** CEM2, Université de Montpellier, France (Friday 20 December 2002).
189. *Radio Frequency Integrated Circuits –Mixers, Oscillators and Phase-Locked Loops*, Zarlink Corporation, Kanata Ontario (Thursday 5 December 2002)
190. *Radio Frequency Integrated – Mixers, Oscillators and Phase-Locked Loops*, Skyworks/Conexant Inc., Ottawa, Ontario (Thursday 5 December 2002).
191. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, RIM, Waterloo, Ontario (Wednesday 4 December 2002).
192. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, Gennum Corporation, Burlington, Ontario (Tuesday 3 December 2002).
193. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, Zarlink Corporation, Kanata Ontario (Thursday 19 September 2002).
194. *Radio Frequency Integrated Circuits for Transceiver Applications*, Skyworks/Conexant Inc., Ottawa, Ontario (Thursday 19 September 2002)
195. *Radio Frequency Integrated Circuits for Transceiver Applications*, Gennum Corporation, Burlington, Ontario (Tuesday 17 September 2002).

196. *Microelectronics and Some Interesting Applications*, CEM2, Université de Montpellier, France (Wed 26 June 2002).
197. *RF MOS Noise Modeling and Design of Low Noise RFICs*, Chalmers Univ., Gothenburg, Sweden, (21 March 2002).
198. *New Ways to Operate Transistors for Better Circuit Performance*, Gennum Corp., Burlington (Mon. 25 March 2002).
199. *Low-Noise, Low-Power Devices and Integrated Circuits*, RIM Corp., Waterloo Ontario (Wed. 13 March, 2002).
200. *Microelectronic Device and Circuits Research*, Gennum Corporation, Burlington Ontario (Wed. 20 June, 2001).
201. *Microelectronic Device and Circuits Research*, RIM Corporation, Waterloo Ontario (Thursday 31 May, 2001)
202. *Ultra Low-Voltage Low-Power Voltage Controlled Oscillators*, Institute of Radio Physics, Calcutta University, Calcutta, India (Wednesday 20 December 2000).
203. *Ultra Low-Voltage Low-Power Voltage Controlled Oscillators*, Department of Electrical Engineering, Chulalongkorn University, Bangkok, Thailand (Tuesday 12 December 2000).
204. *RF Noise Modeling of MOSFETs*, ECE Dept., National Univ. of Singapore, Singapore (Thursday 30 Nov. 2000).
205. *RF Noise Modeling of MOSFETs*, EEE Dept., Nanyang Technological Univ., Singapore (Monday 27 Nov. 2000).
206. *RF Microelectronic Devices and Circuits*, Conexant Inc., Newport Beach, CA (Monday 2 October 2000).
207. *RF Noise Modeling of MOSFETs*, National Semiconductor Corp., Santa Clara, CA (Friday 29 September 2000).
208. *RF Microelectronic Devices and Circuits*, Electrical Engineering Department, Eindhoven University of Technology, Eindhoven, Nederland, (Friday 15 September 2000).
209. *A General Noise and S-Parameters De-Embedding Procedure for On-Wafer High-Frequency Noise Measurements of MOSFETs*, Mitel Corporation (Thursday 31 August 2000).
210. *Effects of DC Stresses on the RF Properties of NMOSFETs*, Mitel Corporation (Thursday 31 August 2000).
211. *Effects of Forward Biasing the Substrate on the Properties of CMOS Ring Oscillators*, Mitel Corporation (Thursday 31 August 2000).
212. *High Frequency Noise Modeling of MOSFETs*, Angstrom Laboratory, Uppsala University, (Friday 19 March 1999).
213. *Some Circuit Applications of Gate-Controlled Lateral PNP Bipolar Junction Transistors*, Mitel Corp. (18 Feb. 1999).
214. *High Frequency Noise Modeling of MOSFETs*, Mitel Corporation (Thursday 18 February 1999).
215. *Gate-Controlled Lateral PNP Bipolar Junction Transistors: Characteristics, Modeling and Circuit Applications*, Electrical and Computer Engineering Dept., McMaster University, Hamilton, Ontario (Thursday 3 September 1998).
216. *Gate-Controlled Lateral BJTs - Characteristics, Modeling and Experiments*, Laboratoire des Physique des Composants a Semiconductors (LPCS), ENSERG, Grenoble, France (Thursday 9 July 1998).
217. *High Frequency Noise of MOSFETs - Modeling and Experiments*, Rockwell Semiconductor Systems, Newport Beach, California, (Friday 20 February, 1998).
218. *BJT H.F. Noise Modeling and Experiments*, Lab. of ECTM, DIMES, Delft Univ. of Technology (7 July, 1997).
219. *H.F. Noise Studies of MOSFETs*, Laboratory of ECTM, DIMES, Delft University of Technology (7 July, 1997).
220. *Direct Extraction of AC Equivalent Circuit Parameters of Polysilicon Emitter BJTs from S-Parameters*, Laboratory of ECTM, DIMES, Delft University of Technology (30 June, 1997).
221. *DC Extraction of R_B and R_E of Polysilicon Emitter BJTs*, Laboratory of ECTM, DIMES, Delft University of Technology (30 June, 1997).
222. *Gate-Controlled Lateral BJTs - Characteristics, Modeling and Experiments*, Laboratory of ECTM, DIMES, Delft University of Technology (25 June, 1997).
223. *Narrow Width MOSFETs - Parameter Extraction and Physical and Circuit Modeling*, Laboratory of ECTM, DIMES, Delft University of Technology (25 June, 1997).
224. *Features and Mechanisms of the Saturating Hot-Carrier Degradation in LDD MOSFETs*, Laboratory of ECTM, DIMES, Delft University of Technology (23 June, 1997).
225. *Simple Method to Extract the Parasitic Resistances of MOSFETs Using a Single Device*, Laboratory of ECTM, DIMES, Delft University of Technology (23 June, 1997).
226. *Low Frequency Noise in Polysilicon Resistors and MOSFETs*, Mitel Corporation, Kanata (29 April, 1997).
227. *Parameter Extraction and Noise Modeling of BJTs at Microwave Frequencies*, INAOEP, Mexico (28 Feb. 1997).
228. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Xilinx Semiconductor, San Jose, California (6 December 1996).
229. *High Frequency Noise Modeling of Polysilicon Emitter Bipolar Junction Transistors*, Analog/Mixed Signal Process Development Group, National Semiconductor, Santa Clara, California (6 December 1996).
230. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Mitel Semiconductor, Ottawa (5 Nov. 1996).
231. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Research Institute for

Materials Science, Budapest, Hungary (3 September 1996).

232. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Integrated Transceivers Division, Philips Research, Eindhoven, Nederland (4 July 1996).
233. *Features and Mechanisms of the Saturating Hot-Carrier Degradation in LDD MOSFETs*, Analysis and Reliability Division, IMEC, Leuven, Belgium (3 July 1996).
234. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Integrated RF technology Department, Rockwell Semiconductor Systems, Newport Beach, California (9 May 1996).
235. *Novel Applications of Lateral pnp Bipolar Transistors in a 0.8 μm BICMOS Technology*, Physics Department, National University of Singapore, Singapore (13 December 1995).
236. *Novel Applications of Lateral pnp Bipolar Transistors in a 0.8 μm BICMOS Technology*, School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore (13 December 1995).
237. *The Early Mode of Hot-Carrier Degradation in LDD NMOSFETs: Its Features and Mechanisms*, Electrical Engineering Department, National University of Singapore, Singapore (12 December 1995).
238. *A Simple Method to Extract the Parasitic Resistances from a Single MOSFET Using Measurements of Small Signal Conductances*, TCAD and Modeling Group, AT&T Bell Laboratories, Allentown, Pennsylvania, (14 August 1995).
239. *Fast and Accurate Method of Extracting Two Critical Device Parameters of SAGCM InP/InGaAs Avalanche Photodiodes*, DIMES, Delft University of Technology, Delft, Nederland (22 September 1994).
240. *Fast and Accurate Method of Extracting Two Critical Device Parameters of SAGCM InP/InGaAs Avalanche Photodiodes*, Engineering Department, Cambridge University, Cambridge, United Kingdom (16 September 1994).
241. *Low Frequency Noise and Excess Currents Due to Trap-Assisted Tunneling in Double Barrier Tunneling Diodes*, Advanced Semiconductor Processing Division, IMEC (Inter-University Microelectronics Center), Kapeldreef, Leuven, Belgium (23 September, 1993).
242. *Excess Currents and Low Frequency Noise Due to Trap-Assisted Tunneling in Resonant Tunneling Diodes*, Electrical Engineering Dept., Eindhoven University of Technology, Eindhoven, Nederland (22 September, 1993).
243. *Noise Characterization and Modeling of Polysilicon Emitter Bipolar Junction Transistors at Microwave Frequencies*, Elec. Engineering Dept., Eindhoven Univ. of Tech., Eindhoven, Nederland (22 September, 1993).
244. *Low Frequency Noise and Excess Currents Due to Trap-Assisted Tunneling in Double Barrier Tunneling Diodes*, Applied Physics Department, Federal University of Technology (EPFL), Lausanne, Switzerland (17 Sept., 1993).
245. *Low Frequency Noise of GaAs- and InP-Based Resonant Tunneling Diodes*, Electronics Laboratories, General Electric Aerospace, Syracuse, New York, USA (12 June 1992).
246. *Low Frequency Noise in Resonant Tunneling Diodes*, Institut d'Electronique et de Microelectronique, ISEN, UMR, CNRS, Lille, France (27 May 1992).
247. *Physical and Circuit Modeling of Narrow Width MOSFETs*, Institut d'Electronique et de Microelectronique, ISEN, UMR, CNRS, Lille France (27 May 1992).
248. *Modeling of Narrow Width MOSFETs*, Laboratoire de Physique des Composants a Semiconducteurs, ENSERG, CNRS, Grenoble, France (25 May 1992).
249. *Narrow Width MOSFETs*, Electrical and Comp. Engineering Dept., Univ. of Waterloo, ON, Canada (4 March 1992).
250. *Narrow Width MOSFETs*, Shanghai Institute of Metallurgy, Academica Sinica, Shanghai, China (5 December 1991).
251. *Low Frequency Noise in Double Barrier Resonant Tunneling Diodes*, Shanghai Institute of Metallurgy, Academica Sinica, Shanghai, China (5 December 1991).
252. *Narrow Width MOSFETs*, Physics Dept., Shanghai Univ. of Science and Tech., Shanghai, China (3 Dec. 1991).
253. *Low Temperature Microelectronics*, Physics Department, Shanghai University of Science and Technology, Shanghai, China (2 December 1991).
254. *Hot-Carrier Degradation Studies in Short Channel NMOS Devices*, Solid State Devices Division, Naval Research Laboratory, Washington, D.C., USA (10 May 1991).
255. *Parasitic Effects in Narrow Width MOSFETs*, Advanced Semiconductor Material Science, Philips Research Laboratories, Eindhoven, Nederland (10 April 1991).
256. *A New Method for Determining the Parasitic Effects in Narrow Width MOSFETs*, Electrical Engineering Department, Eindhoven University of Technology, Eindhoven, Nederland (9 April 1991).
257. *Low Frequency Noise Spectra and Temperature Dependent Characteristics of AlAs/GaAs/AlAs Resonant Tunneling Diodes*, High Technology Center, Boeing Aerospace and Electronics, Seattle, Washington, USA (30 Nov. 1990).
258. *A New Method for Determining the Parasitic Effects in Narrow Width MOSFETs*, Device Engineering Group, Semiconductor Components, Northern Telecom Electronics, Ottawa, Ontario, Canada (13 September 1990).
259. *Edge Effects in Narrow Width MOSFETs*, Semiconductor Base Technology, General Technology Division, IBM Essex

Junction, Vermont, USA (10 September 1990).

260. *DIBL in Short Channel MOS Devices*, Advanced Semiconductor Processing Division, IMEC (Inter-University Microelectronics Center), Kapeldreef, Leuven, Belgium (13 July, 1990).
261. *DIBL in Short Channel MOS Devices: A Comparison between 300K and 77K*, Advanced Theoretical and Experimental Physics, Philips Research Laboratories, Eindhoven, Nederland (12 July, 1990).
262. *Low Temperature Electronics*, CTF Systems Inc, Port Coquitlam, B.C., Canada (27 February, 1990).
263. *Recent Developments in Networks/Devices Research*, with S. Hardy, Distinguished Advanced Research and Technology Seminar (DARTS), Engineering Science, SFU, Burnaby, B.C., Canada (19 October 1989).
264. *Analyzing Short-Channel PMOS Devices for Cryo-CMOS Microelectronics*, Semiconductor Components Group, Northern Telecom Electronics Ltd., Ottawa, Ontario, Canada (3 August 1989).
265. *Interaction Between Device Technologies and Network Switching Applications*, with Prof. S. Hardy, Distinguished Advanced Research and Technology Seminar, Engineering Science, SFU, Burnaby, B.C., Canada (13 October 1988).
266. *MOS Microelectronics at Low Temperatures*, Semiconductor Components Group, Northern Telecom Electronics Ltd., Ottawa, Ontario, Canada (30 August, 1988).
267. *Low Temperature MOS Microelectronics*, Process Development, SEEQ Tech. Inc, San Jose, CA, USA (15 April 1988).
268. *Low Temperature Operations of Si CCDs for Imaging Applications*, with B. Jaggi, Engineering Science, SFU, Burnaby, B.C., Canada (29 October 1987).
269. *Low Temperature Electronics*, Dominion Astrophys. Observatory, Nat. Res. Council, Victoria, B.C., (21 July, 1987).
270. *S-I-S Millimeter Wave Detectors*, Radio Astronomy, Herzberg Institute of Astrophysics, National Research Council, Ottawa, Ontario, Canada (15 July 1987).
271. *Superconductivity - Review of the Theory and Electronic Applications*, Microtel Pacific Research, Burnaby Mountain, B.C., Canada (23 March 1987).

PROFESSIONAL SERVICE

- **Offices Held in Professional Societies** **65**
- **Conferences – Organizer, Chair, Program Committee Member, etc.** **184**
- **Session Chair/Co-Chair at Conferences/Symposia** **119**

Office Held in Professional Societies

1. Member, *Advisory Board*, **IEEE Technical Committee on Cyber-Physical Systems (CPS)** (2017 - present).
2. Past President, *Academy of Science*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2017-2019).
3. Chair – Medals and Awards Selection Committee, *Academy of Science*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2017-2019).
4. President, *Academy of Science*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015-2017).
5. Chair, *Academy of Science Council*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015-2017).
6. Chair, *Academy of Science Executive Committee*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015-2017).
7. Chair, *Academy of Science Committee on Selection of New Fellows*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015-2017).
8. Member, *RSC Executive*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada,** (2015-2017).
9. Member, *RSC Board of Directors*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada,** (2015-2017).
10. Member of *Governance and Ethics Committee*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada,** (2015-2017).
11. Member of *Committee for the Nomination of Presidential Candidates*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada** (2015-2019).
12. Member, *Board of Directors*, **A.G. Huntsman Foundation**, Dartmouth, Nova Scotia, Canada (2015-2019).
13. President Elect, *Academy of Science*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2014-2015).

14. Chair, *Academy of Science Awards Committee*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015).
15. Member, *Academy of Science Executive Committee*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2014-2015).
16. Member of *Council* (Academy of Science Representative), **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2014-2015).
17. Director, *Division of Applied Sciences and Engineering*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2011-2013, 2013-2015).
18. Member, *Academy of Science Committee for the Selection of New Fellows*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2011-2013, 2013-2015).
19. Chair, *Fellow Selection Committee, Division of Applied Sciences and Engineering*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2011-2013, 2013-2015).
20. Member of *Council* - Academy of Science, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2011-2013, 2013-2015).
21. Member of *Committee for the Nomination of Officers, Academy of Science*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada** (2011-2013, 2013-2015, 2017-2019).
22. Vice-President – *Membership*, **IEEE Electron Devices Society** (2012-2013).
23. Member of *Council* (Academy of Science Representative), **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2011-2013).
24. Chair, *Nominating Committee, Division of Applied Sciences and Engineering*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2011-2013).
25. Vice-Chair, *Subcommittee for Regions/Chapters* (*SRC*) – *Regions* 1, 3 & 7, **IEEE Electron Devices Society** (2017-2019)
26. Chair, *Technical Achievement Award***, IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
27. Chair, *Ten-Year Retrospective Most Influential Paper Award*, **IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
28. Chair, *Distinguished Leadership Award***, IEEE Tech Committee Cyber-Physical System (TCCPS),** (2017-18).
29. Chair, *Mid-Career Award*, **IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
30. Chair, *Early-Career Award*, **IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
31. Member, *Advisory Council*, ***IEEE Council on Electronic Design Automation* (*CEDA*)**, (2017-).
32. Member, *IEEE Corporate Innovation Award Committee*, (2015-2018).
33. Member, *IEEE Electron Devices Society Ebers Award Committee* (2017-2018).
34. Member, *IEEE Brunetti Awards Committee*, (2013-2015).
35. Member, *IEEE Electron Devices Society Early Career Awards Committee* (2012-2015).
36. Member, *IEEE Electron Devices Society Fellow Evaluation Review Committee* (2010-2015).
37. Member, *Nomination Committee*, **Division of Applied Sciences and Engineering, The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2010-2011).
38. Member, *Fellow Selection Committee*, **Division of Applied Sciences and Engineering, The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2009-2010).
39. Member, *Publications Committee*, **IEEE Electron Devices Society** (2009-2013).
40. Member, *Adcom*, **IEEE Electron Devices Society** (2006-2008, 2009-2011).
41. Chair, *Compact Modeling Committee*, **IEEE Electron Devices Society** (2009-2012).
42. Member, *VLSI Technology and Circuits*, **IEEE Electron Devices Society** (2006-present).
43. Member, *Educational Activities Committee*, **IEEE Electron Devices Society** (2002-2011).
44. Member, *Compact Modeling Committee*, **IEEE Electron Devices Society** (2004-2008).
45. Member, *Optoelectronic Devices Committee*, **IEEE Electron Devices Society** (2002-2007).
46. Member, *Education Awards Committee*, **IEEE** (2003-2006).
47. Member, *ICNF International Advisory Committee* (2003-).
48. Member, *Fellow Evaluations Committee*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada**, **Academy of Science - Division** of **Applied Sciences and Engineering** (2010).
49. Member, *Technical Affairs Committee*, **The Electrochemical Society** (2006-2010).
50. Member, *Fellow Evaluations Committee*, **The Electrochemical Society** (2006-2010).
51. Divisional Advisor, *Electronics and Photonics Division*, **The Electrochemical Society** (2006-2010).
52. Divisional Advisor, *Organic and Biological Electrochemistry Division*, **The Electrochemical Society** (2006-2010).

53. Member, *Board of Directors*, **The Electrochemical Society** (2004-2006).
54. Chair, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2004-2006).
55. Member, *New Technology Subcommittee*, **The Electrochemical Society** (2001-2004).
56. Member, *Nanotechnology Subcommittee*, **The Electrochemical Society** (2003-2005).
57. Member, *Governing Body*, *Dielectric Science and Technology Division*, **The Electrochemical Society** (1994-1996, 1996-1998, 1998-2000, 2000-2002, 2002-2004, 2004-2006).
58. Member-at-Large, *Electronics Division*, **The Electrochemical Society** (2003-2005, 2005-2007).
59. Vice-Chair, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2002-2004).
60. Secretary, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2000-2002).
61. Member, *Publication Committee*, **Electrochemical Society** (1999-2001).
62. Symposium Planning Chair, *Dielectric Science and Technology Division*, **Electrochemical Society** (1998- 2000).
63. Awards Chair, *Dielectric Science and Technology (DS&T) Division*, **Electrochemical Society** (1996-1998).
64. Awards Chair, *Vancouver Section*, **IEEE** (1995-1996).
65. Counselor, *SFU Student Branch*, **IEEE** (1993-1995).

Conferences – Organizer, Program Committee etc.

1. Co-Chair, *International Advisory Committee*, **7th International Conference on Computers and Devices for Communication (CODEC 2019),** Kolkata, India (19-20 December 2019).
2. General Chair, **3rd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (**Ubi-HealthTech 2019**), Shaoxing, China (13-16 December 2019).
3. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 6*, **235th Meeting of the Electrochemical Society**, Dallas, Texas USA, (26-31 May 2019).
4. General Chair, **The 12th Asia-Pacific Services Commuting Conference (APSCC 2018)**, Zhuhai, China (20-22 December 2018).
5. Member, *Program Committee*, **CENICS 2018 - The Eleventh International Conference on Advances in Circuits, Electronics and Micro-electronics**, Venice, Italy (16-18 September 2018).
6. Member, *Technical Program Committee*, **2018 IEEE International Flexible Electronics Technology Conference**, Ottawa, Canada (7-9 August 2018).
7. Member, *Scientific Committee*, **25th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Gdynia, Poland (21-23 July 2018).
8. Member, *Organizing Committee*, **2nd World Congress & Expo on Nanotechnology & Materials Science**, Dubai, UAE (25-27 June 2018).
9. Member, *International Program Committee*, **International Conference on Advances in Information Technology (IAIT 2017) – Technology For Smart Life,** Bangkok, Thailand (22-25 November 2017).
10. Member, Advisory Committee, **IEEE Fifth International Conference on Enterprise Systems (ES 2017) – Industry 4.0 and Made in China 2025**, Tsinghua University, Beijing, China (22-24 September 2017).
11. Member, *Advisory Committee*, **IEEE SmartWorld 2017 - The 3rd IEEE International SmartWorld Congress**, San Francisco, USA (4-8 August 2017).
12. General Chair, **The 2017 IEEE International Conference on Smart X** (Smart X 2017), Guangzhou, China (21-23 July 2017).
13. Member, *Technical Program Committee*, **The Second IEEE/ACM Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE 2017)**, Philadelphia, USA (17-19 July 2017).
14. Member, *Program Committee*, **24th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Bydgoszcz, Poland (22-24 June 2017).
15. Chair, *International Advisory Committee*, **24nd International Conference on Noise and Fluctuations** (ICNF 2017), Vilnius, Lithuania (20-23 June 2017).
16. Co-Organizer, *Solid-State Electronics and Photonics in Biology and Medicine* 4, **231st Meeting of the Electrochemical Society**, New Orleans, LA (26 May – 1 June 2017).
17. General Chair, **9th International Conference on Internet-of-Things (iThings 2016),** Chengdu, China (16-19 December 2016).
18. Member, *Scientific Advisory Committee*, **3rd International Electronic Conference on Sensors and Applications**, On-line (15-30 November 2016).
19. Member, *Program Committee*, **7th International Conference on Computer Aided Design for Thin-Film Transistor Technologies (CAD-TFT),** Beijing, China (26-28 October 2016).

20. Member, *Technical Program Committee*, **International Conference on Medical Sciences and Bioengineering,** Guangzhou, China (15-16 October 2016).
21. Member, *Technical Program Committee*, **The Fifth International Conference on Global Health Challenges (GLOBAL HEALTH 2016),** Venice, Italy (9-13 October 2016).
22. General Chair, **The 2016 International Conference on Smart X (Smart X 2016)**, Dalian, China (29-31 July 2016).
23. Member, *Technical Program Committee*, **The First IEEE Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE 2016)**, Washington DC, USA (27-29 July 2016).
24. Honorary Chair, **The Thirteenth International Conference on Ubiquitous Intelligence and Computing (UIC 2016),** Toulouse, France (18-21 July 2016).
25. Member, *International Committee*, **International Workshop on Flexible Electronics (WFE)**, Tarragona, Catalonia, Spain (29 June 2016).
26. Member, *International Program Committee*, **23rd IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Lodz, Poland (23-25 June 2016).
27. Member, *International Advisory Committee*, **Asian Engineering Deans' Summit (AEDS)**, Zhejiang University, Hangzhou, China (16-17 May 2016).
28. Organizer, Special Session on "*Industrial Perspectives of Future Buildings and Homes Under the Context of Internet-of-Things and Industry* 4.0", **2016 IEEE International Conference on Industrial Technology (ICIT2016)**, Taipei, Taiwan (14-17 March 2016).
29. General Chair, **2015 International Conference on Smart City** (**IEEE Smart City 2015**), Chengdu, China (19-21 December 2015).
30. Chairman, *International Advisory Committee*, **International Conference on Computers and Devices for Communications (CODEC-15),** Kolkata, India (16-18 December 2015).
31. Honorary Program Chair, **International Conference on Microwave and Photonics (ICMAP 2015),** Dhanbad, India (11-13 December 2015).
32. Member, *Technical Program Committee*, **International Conference on Semiconductor Physics and Devices (ICSPD 2015),** Guilin, China (20-22 November 2015).
33. Member, *International Program Committee*, **The International Conference on Small Science (ICSS 2015),** Phuket, Thailand (4-7 November 2015).
34. Member, *Organizing Committee*, **Workshop on Advanced Materials and Devices (WAMD),** Ixtapa-Zihuatanejo, Mexico (4-6 November 2015).
35. Member, *Technical Program Committee*, **The 9th Jordanian International Electrical and Electronics Engineering Conference (JIEEEC 2015),** Amman, Jordan (12-14 October 2015).
36. General Chair, **The Twelfth International Conference on Ubiquitous Intelligence and Computing (UIC 2015),** Beijing, China (10-14 August 2015).
37. Member, *Technical Program Committee*, **The Fourth International Conference on Global Health Challenges (GLOBAL HEALTH 2015),** Nice, France (19-24 July 2015).
38. Member, *International Program Committee*, **22nd IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Torun, Poland (25-27 June 2015).
39. Chair, *International Advisory Committee*, **23rd International Conf. on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
40. General Co-Chair, **23rd International Conf. on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
41. Technical Area Chair, *Imagers*, **23rd International Conference on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
42. General Co-Chair, *Organizing Committee*, **23rd International Conference on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
43. General Chair, **2nd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2015), Beijing, China (28-30 May 2015).
44. Member, *Technical Program Committee*, **2nd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2015), Beijing, China (28-30 May 2015).
45. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 5*, 227th Meeting of the Electrochemical Society, Chicago, Illinois (24-28 May 2015).
46. Member, *Technical Committee*, **MOS-AK: Enabling Compact Modeling R&D**, Grenoble, France (12 March 2015).
47. General Chair, **The 13th International Conference on Ubiquitous Computing and Communications (IUCC 2014),** Chengdu, China (19-21 December 2014).

48. Member, *International Program Committee* **International Conference on Small Science (*ICSS*),** Hong Kong (8-11 December 2014).
49. Member, *Program Committee*, **29th Symposium on Microelectronics Technology and Devices (SBMicro 2014),** Aracaju-Sergipe, Brazil (1-5 September 2014).
50. Member, *Technical Program Committee*, **The Third International Conference on Global Health Challenges (Global Health 2014),** Rome, Italy (24-28 August 2014).
51. Member, *International Program Committee*, **21st IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Lviv, Ukraine, Poland (19-21 June 2014).
52. Member, *Scientific Advisory Committee*, **1st International Electronic Conference on Sensors and Applications,** On-line Conference (1-16 June 2014).
53. Lead-Organizer, *Integrated Optoelectronics* 7, **225th Meeting of the Electrochemical Society**, Orlando, Florida (11-16 May 2014).
54. Member, *Steering Committee*, **29th International Conference on Microelectronics** (MIEL-2014), Belgrade, Serbia (10-13 May 2014).
55. Member, *International Advisory Committee*, **1st International Conference on Microelectronics & Reliability- 2013** (ICMR-2013), Amity University, Noida, (NCR, Delhi), India (17-18 October 2013).
56. General Chair, **1st IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2013), Jinhua, China (1-3 July 2013).
57. Member, *International Advisory Committee*, **22nd International Conference on Noise and Fluctuations** (ICNF 2013), Montpellier, France (24-28 June 2013).
58. Member, *Scientific Committee*, **20th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Gdynia, Poland (20-22 June 2013).
59. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing* 4, **223rd Meeting of the Electrochemical Society**, Toronto, Canada (12-16 May 2013).
60. Co-Chair, *Technical Program*, **2nd IEEE Saudi International Conference on Electronics, Communications and Photonics**, Riyadh, Saudi Arabia (27-30 April 2013).
61. Member, *Technical Program Committee*, **8th Jordanian International Electrical and Electronics Engineering Conference**, (JIEEEC 2013), Amman, Jordan (16 - 18 April 2013).
62. Co-Chair, *International Advisory Committee*, **International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (17-19 December 2012).
63. Member, *Technical Program Committee*, **4th International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2012),** Cambridge University, Cambridge, UK (3 September 2012).
64. Member, *Scientific Committee*, **International Conference on Electrical and Computer Systems (ICECS'12),** Ottawa, Canada (22-24 August 2012).
65. Member, *Organizing Committee*, **Second International Training Course in Compact Modeling - EU CoMoN Compact Modeling Network**, Tarragona, Spain (28-29 June 2012).
66. Member, *Scientific Committee*, **18th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Warsaw, Poland (24-26 May 2012)
67. Lead-Organizer, *Sixth International Symposium on Integrated Optoelectronics*, **The 221st Meeting of the Electrochemical Society**, Seattle, Washington (6-11 May 2012).
68. Member, *Organizing Committee*, **Eight International Caribbean Conference on Circuits, Devices and Systems (ICCDCS 2012),** Playa del Carmen, Mexico (14-17 March 2012).
69. Member, *International Advisory Committee*, **The International Conference on VLSI, MEMS & NEMS (VMN-2012),** Amity University, Uttar Pradesh, India (24-25 January 2012).
70. General Chair, **Eight International Conference on Ubiquitous Intelligence and Computing (UIC 2011**), Banff, Aberta, Canada (2-4 September 2011).
71. Member, *Technical Program Committee*, **Interdisciplinary Research on E-Health Services and Systems (IREHSS) - Third International IEEE WoWMoM Workshop on Interdisciplinary Research on E-Health Services and Systems,** Lucca, Italy, Canada (20-24 June 2011).
72. Member, *Scientific Committee*, **18th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Gliwice, Poland (16-18 June 2011)
73. General Chair, **21st Int. Conference on Noise and Fluctuations** (ICNF 2011), Toronto, Canada (12-16 June 2011).
74. Chair, *International Advisory Committee*, **21st Int. Conference on Noise and Fluctuations** (ICNF 2011), Toronto, Canada (12-16 June 2011).
75. Member, *Technical Program Committee*, **21st International Conference on Noise and Fluctuations** (ICNF 2011),

Toronto, Canada (12-16 June 2011).

76. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 3*, **219th Meeting of the Electrochemical Society**, Montreal, Canada (1-6 May 2011).
77. Co-Organizer, *Silicon Nitride, Silicon Dioxide and Emerging Dielectrics XI*, **219th Meeting of the Electrochemical Society**, Montreal, Canada (1-6 May 2011).
78. Member, *Technical Program Committee*, **3rd International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2010),** Tarragona, Spain (2 July 2010).
79. Member, *Organizing Committee*, **First International Training Course in Compact Modeling - EU CoMoN Compact Modeling Network**, Tarragona, Spain (30 June – 1 July 2010).
80. Member, *Scientific Committee*, **17th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Wroclaw, Poland (24-26 June 2010)
81. Member, *Technical Program Committee*, **Interdisciplinary Research on E-Health Services and Systems (IREHSS) - Second International IEEE WoWMoM Workshop on Interdisciplinary Research on E-Health Services and Systems,** Montreal, Canada (14 June 2010).
82. Lead-Organizer, *Fifth International Symposium on Integrated Optoelectronics***, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada, (25-30 April 2010).
83. Co-Chair, *International Advisory Committee*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (14-16 December 2009).
84. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 2*, **216th Meeting of the Electrochemical Society**, Vienna, Austria (4-9 October 2009).
85. Member, *Technical Program Committee*, **2nd International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2009),** University College London, London, UK (25 September 2009).
86. Member, *Program Committee*, **SBMicro**, Natal, Brazil (31 August – 3 September 2009).
87. Member, *Scientific Program Committee***,** *20th International Conference on Noise and Fluctuations* (ICNF 2009), Pisa, Italy (15-19 June 2009).
88. Co-Organizer, *Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics X*, **215th Meeting of the Electrochemical Society**, San Francisco, California (24-29 May 2009).
89. Member, *International Advisory Committee***, IEEE International Conference on Electron Devices and Solid-State Circuits 2008** (EDSSC2008)**,** Hong Kong (8-10 December 2008).
90. Lead-Organizer, *Fourth International Symposium on Integrated Optoelectronics*, **214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (12-17 October 2008).
91. Member, *Technical Program Committee*, **1st International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2008),** Cambridge University, Cambridge, UK (11-12 September 2008).
92. Member, *North & South America Regional Technical Committee,* **The 12th International Meeting on Chemical Sensor** (IMCS-12), Columbus, Ohio (13-16 July 2008).
93. Member, *Organizing/Steering Committee*, **International Symposium on Flexible Electronics** (**ISFE**), Tarragona, Spain (6-9 April 2008).
94. Member, *Technical Program Committee*, **International Symposium on Flexible Electronics** (**ISFE**), Tarragona, Spain (6-9 April 2008).
95. Member, *International Advisory Committee***, IEEE International Conference on Electron Devices and Solid-State Circuits 2007** (EDSSC2007)**,** Southern Taiwan University, Tainan, Taiwan (20-22 December 2007).
96. Member, *Scientific Program Committee***, 19th International Conference on Noise and Fluctuations (ICNF 2007),** Tokyo, Japan (9-14November 2007).
97. Lead-Organizer, *Organic and Polymeric Semiconductor Devices*, **212th Meeting of the Electrochemical Society**, Washington, DC (7-12 October 2007).
98. Member, *Program Committee*, **SPIE Conference on Noise and Fluctuations in Circuits, Devices and Materials**, Florence, Italy (20-24 May 2007).
99. Co-Organizer, *Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics IX*, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (6-11 May 2007).
100. Co-Organizer, *Sensors Based on Nanotechnology 3*, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (6-11 May 2007).
101. Member, *Organizing Committee*, **IEEE Int'l Conference on RFID 2007**, Grapevine, Texas (26-28 March 2007).
102. Member, *Program Committee***, Polytronic 2007 – The 6th International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics,** Miraikan - Odaiba, Tokyo, Japan **(**16-18 January 2007**).**

103. Co-Chair, *International Advisory Committee*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (14-16 December 2009).
104. Member, *International Advisory Committee*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (18-20 December 2006).
105. Member, *Programme Committee*, **European Nano Systems 2006,** Paris, France (14-15 December 2006).
106. Member, *International Programme Committee*, **The Fourth IASTED International Conference on Circuits, Signals, and Systems**, San Francisco, California, (20-22 November 2006).
107. Co-Organizer, *Bioelectronics, Biointerfaces, and Biomedical Applications 2*, **210th Meeting of the Electrochemical Society**, Cancun, Mexico (29 October – 3 November 2006).
108. Lead-Organizer, *Third International Symposium on Integrated Optoelectronics*, **210th Meeting of the Electrochemical Society**, Cancun, Mexico (29 October – 3 November 2006).
109. Member, *Technical Program Committee*, **IEEE/IEE 8th International Conference on Solid-State and Integrated-Circuit Technology** (ICSICT 2006), Shanghai, China (23-26 October 2006).
110. Co-Organizer, *Solid-State Joint General Poster Session*, **The 209th Meeting of the Electrochemical Society,** Denver, Colorado (7-12 May 2006).
111. Co-Organizer, *New Sensor Materials*, **209th Meeting of the Electrochem. Soc.,** Denver, Colorado (7-12 May 2006).
112. Vice-Chair, *Circuits*, **Sixth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2006)**, Mexico (26-28 April 2006).
113. Member, Programme Committee**, European Nano Systems 2005,** Paris, France (14-16 December 2005).
114. Co-Organizer, *Dielectrics and the Dielectric-Electrolyte Interface in Biological and Biomedical Applications*, **The 208th Meeting of the Electrochemical Society,** Los Angeles, California (17-21 October 2005).
115. Member, Scientific Program Committee, **18th International Conference on Noise and Fluctuations** (ICNF2005), Salamanca, Spain (19-23 September 2005).
116. Member, *Program Committee*, **Twelfth Canadian Semiconductor Technology Conf.,** Ottawa (August 2005).
117. Member, International Scientific Committee, **4th International Conference on Unsolved Problems of Noise and Fluctuations in Physics, Biology & High Technology,** Gallipoli (Lecce), Italy (6-9 June, 2005)
118. Co-Chair, **SPIE Conf. on Noise in Devices and Circuits**, Austin, Texas (May 2005).
119. Co-Organizer, *Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics VIII*, **207th Meeting of the Electrochemical Society**, Quebec City, Quebec (15-20 May 2005).
120. Member, *Technical Program Committee – Solid State Devices*, **IEEE Int. Electron Devices Meeting** (2003-2005).
121. Vice-Chair, *International*, **Fifth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2004)**, Dominican Republic (3-5 November, 2004).
122. Lead-Organizer, *Second International Symposium on Integrated Optoelectronics*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (3-8 October 2004).
123. Co-Organizer, *Solid-State Joint General Poster Session*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (3-8 October 2004).
124. Co-Chair, **SPIE Conf. on Noise in Devices and Circuits**, Maspalomas, Gran Canaria, Spain (26-28 May 2004).
125. Advisory Chair, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (1-3 January, 2004).
126. Member, *International Advisory Committee*, **International Conference on Noise and Fluctuations** (ICNF) (2003-).
127. Member, *Technical Program Committee*, **3rd International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics**, Montreux, Switzerland (20-23 October, 2003).
128. Co-Organizer, *Seventh International Symposium on Low Temperature Electronics*, **204th Meeting of the Electrochemical Society**, Orlando, Florida (12-17 October, 2003).
129. Member, *Scientific Program Committee*, **17th ICNF Noise and Fluctuations,** Prague, Czech (August 18-22, 2003).
130. Member, *Program Committee*, **Eleventh Canadian Semiconductor Technology Conf.,** Ottawa (August 2003).
131. Member, *Int. Steering Committee*, **IEEE Conf. on Electron Devices and Solid-St. Cir.**, Hong Kong, (7-9 July, 2003).
132. Member, *Technical Program Committee*, **IEEE Device Research Conference** (2003).
133. Chair, **SPIE Conference on Noise in Devices and Circuits**, Santa Fe, New Mexico (1-4 June, 2003).
134. Member, *Technical Committee*, **SPIE Conference on Noise and Information in Nanoelectronics**, **Sensors and Standards**, Santa Fe, New Mexico (1-4 June, 2003).
135. Lead-Organizer, *Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films*, **203rd Meeting of the Electrochemical Society**, Paris, France (27 April 2 May, 2003).
136. Co-Organizer, Solid State Joint General Poster Session, **203rd Meeting of the Electrochemical Society**, Paris, France

(27 April - 2 May, 2003).

137. Chair, *Commission D - Electronics and Photonics*, **International Union of Radio Scientists (URSI),** Canadian National Committee (1996-1999, 1999-2002).
138. Member, *International Scientific Advisory Committee*, **3rd International Conference on Unsolved Problems of Noise (UPON '02)**, Washington, DC (September, 2002).
139. Member, *International Steering Committee* - **6th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC 2002)**, Budapest, Hungary (26-29 May, 2002).
140. Lead-Organizer, *First International Symposium on Integrated Optoelectronics*, **201st Meeting of the Electrochemical Society**, Philadelphia, Pennsylvania (12-17 May, 2002).
141. Member, *Technical Program Committee (Vice-Chair for Solid-State Devices)*, **Fourth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2000)**, Aruba (17-19 April, 2002).
142. Co-Organizer, *Sixth International Symposium on Low Temperature Electronics*, **2001 Joint Int'l Meeting of The Electrochemical Society and the Int'l Society of Electrochemistry**, San Francisco, CA (2-7 September, 2001).
143. Member, **Program Committee**, **Tenth Canadian Semiconductor Technology Conf.**, Ottawa (13-17 August, 2001).
144. Member, *Scientific Program Committee*, **16th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Gainesville, Florida (22-25 October, 2001).
145. Co-Organizer, *Sixth International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films*, **199th Meeting of the Electrochemical Society**, Washington, DC (25-30 March, 2001).
146. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **199th Meeting of the Electrochemical Society**, Washington, DC (25-30 March, 2001).
147. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **198th Meeting of the Electrochemical Society**, Phoenix, Arizona (22-27 October, 2000).
148. Member, *International Steering Committee* - **5th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC 2000)**, Crete, Greece (21-24 May, 2000).
149. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **197th Meeting of the Electrochemical Society**, Toronto, Ontario (14-19 May, 2000).
150. Member, *Technical Program Committee (Vice-Chair for Solid-State Devices)*, **Third IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2000)**, Cancun, Mexico (15-17 March, 2000).
151. Co-Organizer, *Fifth Symposium on Low Temperature Electronics*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October, 1999).
152. Co-Organizer, *State-of-the-Art Program on Compound Semiconductors XXXI*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October, 1999).
153. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October, 1999).
154. Member, *Technical Program Committee*, **15th International Conference on Noise in Physical Systems and 1/f Fluctuations (ICNF '99)**, Hong Kong (23-26 August, 1999).
155. Member, *Program Committee* - **Canadian Semiconductor Technology Conf.**, Ottawa (10-13 August, 1999).
156. Member, *International Scientific Advisory Committee*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (11-15 July, 1999).
157. Co-Organizer, *Fifth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films*, **195th Meeting of the Electrochemical Society**, Seattle, Washington (2-7 May, 1999).
158. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **195th Meeting of the Electrochemical Society**, Seattle, Washington (2-7 May, 1999).
159. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **194th Meeting of the Electrochemical Society**, Boston, Massachusetts (1-6 November, 1998).
160. Co-Organizer, *Thin Film Transistor Technologies IV*, **194th Meeting of the Electrochemical Society**, Boston, Massachusetts (1-6 November, 1998).
161. Co-Organizer, *State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVII)*, **193rd Meeting of the Electrochemical Society**, San Diego, California (3-8 May, 1998).
162. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **191st Meeting of the Electrochemical Society**, San Diego, California (3-8 May, 1998).
163. Member, *International Committee*, **Second International IEEE Caracas Conference on Devices, Circuits and Systems (ICCDS-98)**, Margarita Island, Venezuela (2-4 March, 1998).
164. Member, *International Steering Committee* - **4th International Workshop on Expert Evaluation of Compound**

Semiconductor Material and Technologies (EXMATEC '97), Cardiff, Wales (22-24 June, 1998).

165. Member, *Program Committee*, **SPIE International Symposium on Microelectronics and Assembly - Automatic Inspection and Novel Instrumentation Symposium**, Singapore (23-27 June, 1997).
166. Co-Organizer, *State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVI),* **191st Meeting of the Electrochemical Society**, Montreal, Canada (4-9 May, 1997).
167. Lead-Organizer, *Fourth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films*, **191st Meeting of the Electrochemical Society**, Montreal, Canada (4-9 May, 1997).
168. Co-Organizer, *Fourth International Symposium on Low Temp. Electronics and High Temperature Superconductivity,* **191st Meeting of the Electrochem. Soc**., Montreal, Canada (4-9 May, 1997).
169. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session,* **191st Meeting of the Electrochemical Society**, Montreal, Canada (4-9 May, 1997).
170. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session,* **190th Meeting of the Electrochemical Society**, San Antonio, Texas (6-11 October, 1996).
171. Member, *International Advisory Committee*, **International Conference on Unsolved Problems in Noise**, Szeged, Hungary (September 1996).
172. Member, *International Steering Committee Member* - **3rd Int'l Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC '96)**, Freiburg, Germany (12-15 May 1996).
173. Member, *Program Committee* - **Canadian Semiconductor Technology Conf.**, Ottawa (14-18 August, 1995).
174. Member, *Advisory Board*, Auburn University's NSF Program in **Extended Temperature Range Electronics**, Auburn, Alabama (1995-2000).
175. Member, *International Steering Committee* - **2nd International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC '94)**, Parma, Italy (18-20 May, 1994).
176. Co-Organizer - **Second International Guyana Conference**, Georgetown, Guyana (2-3 September, 1993).
177. Co-Organizer - **First International Guyana Conference**, New York City, New York, USA (13-14 June, 1992).
178. Member, *Scientific and Steering Committee* - **1st Int'l Workshop on Expert Evaluation of Compound Semiconductor Material and Tech' (EXMATEC '92)**, Ecole Centrale de Lyon, Lyon, France (19-22 May, 1992).
179. Member, *Organization Committee* - **1992 IEEE International Reliability Physics Symposium (IRPS)**, San Diego, California, USA (30 March - 2 April 1992).
180. Member, *Organization Committee* - **1991 IEEE International Reliability Physics Symposium (IRPS)**, Las Vegas, Nevada, USA (8-11 April, 1991).
181. Moderator - *Workshop 9 on Cold Electronics and Instrumentation Session*, **Low Temperature Engineering and Cryogenics (LTEC 90) Conference**, Southampton, United Kingdom (17-19 July, 1990).
182. Member, *Technical Advisory Committee* - **First International Conference on Low Temperature Electronics**, Berkeley, California, USA (23-26 April, 1990)
183. Member, *Organization Committee* - **1990 IEEE International Reliability Physics Symposium (IRPS)**, New Orleans, Louisiana, USA (26-2z 9 March, 1990).
184. Member, *Organization Committee* - **1989 IEEE International Reliability Physics Symposium (IRPS)**, Phoenix Arizona, USA (11-13 April, 1989).

Session Chair/Co-Chair at Conferences/Symposia

1. Chair, *Keyote Session*, **7th International Conference on Computers and Devices for Communication (CODEC 2019),** Kolkata, India (Friday 20 December 2019).
2. Chair, *Closing Ceremony*, **The 24th International Conference on Noise and Fluctuations (ICNF 2017)**, Vilnius, Lithuania, (Friday 23 June 2017).
3. Chair, *Noise and Fluctuations in Mesoscopic Devices and Nanostructures*, **The 24th International Conference on Noise and Fluctuations (ICNF 2017)**, Vilnius, Lithuania, (Tuesday 21 June 2017).
4. Chair, *APEC Smart City Forum Discussion,* **The 2016 World Cymbermatics Congress** (**Cybermatics 2016**), Chengdu, China (Saturday 17 December 2016).
5. Chair, *Keynote Speeches in APEC Smart City Forum*, **The 2016 World Cymbermatics Congress** (**Cybermatics 2016**), Chengdu, China (Saturday 17 December 2016).
6. Chair, Keynote Speech III, **2015 International Conference on Smart City (IEEE Smart City 2015)**, Chengdu, China (Saturday 19 December 2015).
7. Chair, *Session S-1C,* **International Conference on Computers and Devices for Communications (CODEC-15)**, Kolkata, India (Thursday 17 December 2015).

8. Co-Chair, *Photovoltaics, Solar Cells* II, **Organic Semiconductor Materials, Devices, and Processing 5, 227th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 25 May 2015).
9. Co-Chair, *Photovoltaics, Solar Cells* I, **Organic Semiconductor Materials, Devices, and Processing 5, 227th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 25 May 2015).
10. Chair, *Fluorescence Applications* I, **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida (Tuesday 13 May 2014).
11. Chair, *Biomedical Applications* I, **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida (Monday 12 May 2014).
12. Co-Chair, *Emerging Applications and Fabrication* I, **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida (Monday 12 May 2014).
13. Co-Chair, *Flexible and Organic Electronics*, **The 2013 IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC'13)**, Hong Kong (Monday 3 June 2013).
14. Co-Chair, *Poster Session,* **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada (Wednesday 15 May 2013).
15. Co-Chair, *Organic Semiconductors: Materials Synthesis, Microstructure, and Performance,* **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada (Monday 13 May 2013).
16. Co-Chair, *Poster Session - Integrated Optoelectronics*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington (Tuesday 8 May 2012).
17. Co-Chair, *Optoelectronics - Clinical Applications*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington (Monday 7 May 2012).
18. Session Chair, **Eight International Caribbean Conference on Circuits, Devices and Systems (ICCDCS 2012)**, Playa del Carmen, Mexico (Thursday 15 March 2012).
19. Co-Chair– *Emerging Dielectrics / Low-k,* **Silicon Nitride, Silicon Dioxide, and Emerging Dielectrics 11, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Thursday 3 May 2011).
20. Co-Chair– *Poster Session*, **Silicon Nitride, Silicon Dioxide, and Emerging Dielectrics 11, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
21. Co-Chair– *Poster Session*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
22. Co-Chair– *Modeling and Design*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
23. Co-Chair– *Solar Cells, Photovoltaics*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Monday 2 May 2011).
24. Co-Chair– *Optical Detectors and Imagers I*, **Fifth International Symposium on Integrated Optoelectronics, The 217th Meeting of the Electrochemical Society,** Vancouver, BC, Canada, (Monday 25 April 2010).
25. Co-Chair and Presented – *Introductory Remarks*, **Fifth International Symposium on Integrated Optoelectronics, The 217th Meeting of the Electrochemical Society,** Vancouver, BC, Canada, (Monday 25 April 2010).
26. Co-Chair, *Optical Sensors* I**, IEEE-URSI 12th International Symposium on Microwave and Optical Technology - ISMOT 2009**, New Delhi, India (Thursday 17 December 2009).
27. Chair, *Valedictory Function and Award Distribution***, IEEE/SPIE 4th International Conference on Computers and Devices for Communications** (**CODEC**), Calcutta, India (Wednesday 16 December 2009).
28. Chair, *Plenary and Keynote Session***, IEEE/SPIE 4th International Conference on Computers and Devices for Communications** (**CODEC**), Calcutta, India (Monday 14 December 2009).
29. Co-Chair, *Novel Applications,* **Second Int. Symposium on Organic Semiconductor Materials and Devices, The 216th Meeting of the Electrochemical Society**, Vienna, Austria (Wednesday 7 October 2009).
30. Co-Chair, *Transport and Modeling II*, **Second Int. Symposium on Organic Semiconductor Materials and Devices, The 216th Meeting of the Electrochemical Society**, Vienna, Austria (Tuesday 6 October 2009).
31. Co-Chair, *OLEDS and Organic Photovoltaics,* **Second Int. Symposium on Organic Semiconductor Materials and Devices, The 216th Meeting of the Electrochemical Society**, Vienna, Austria (Monday 5 October 2009).
32. Chair, *Devices I*, **20th Int. Conference on Noise and Fluctuations (ICNF 2009),** Pisa, Italy (Tuesday 16 June 2009).
33. Chair, *ADC Circuits***, IEEE International Conference on Electron Devices and Solid-State Circuits 2008** (EDSSC2008)**,** Hong Kong (Monday 8 December 2008).
34. Chair, *Advanced Photodetectors I*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Tuesday 14 October 2008).
35. Chair, *Biophotonics 1*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu,

Hawaii (Monday 13 October 2008).

36. Chair, *Modeling*, **NanoTr IV – Nanoscience and Nanotechnology Conf.**, Istanbul, Turkey, (Monday 9 June 2008).
37. Co-Chair, *Plenary Session*, **26th International Conference on Microelectronics**, Nis, Serbia (11-14 May 2008).
38. Chair, *Session 5 – Device Modeling*, **International Symposium on Flexible Electronics** (**ISFE**), Tarragona, Spain (6-9 April 2008)
39. Co-Chair, *Special Session on Power Amplifiers*, **German Microwave Conference**, Hamburg-Harburg, Germany (10-12 March 2008).
40. Co-Chair, *Thin Film Transistors I1*, **First Int. Symposium on Organic Semiconductor Materials and Devices, The 212th Meeting of the Electrochemical Society**, Washington, DC (Tuesday 9 October 2007).
41. Co-Chair, *Thin Film Transistors 1, First Int. Symposium on Organic Semiconductor Materials and Devices, The 212th Meeting of the Electrochemical Society*, Washington, DC (Monday 8 October 2007).
42. Chair, *MOS-SiGe Session*, **19th International Conference on Noise and Fluctuations** (**ICNF2007**), Tokyo, Japan (Monday 9 September 2007).
43. Co-Chair, *Poster Session*, **Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics IX**, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (Tuesday 8 May 2007).
44. Co-Chair, *Ultra-thin Film Reliability*, **Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics IX**, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (Tuesday 8 May 2007).
45. Co-Chair, *Interface Characterization*, **Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics IX**, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 7 May 2007).
46. Co-Chair, *Sensing Materials and Devices*, **Sensors Based on Nanotechnology 3**, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 7 May 2007).
47. Chair, *Plenary Session*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (18-20 December 2006).
48. Co-Chair, *Bioelectronics: Electrochemical Frontiers*, **Bioelectronics, Biointerfaces, and Biomedical Applications 2, 210th Meeting of the Electrochemical Society**, Cancun, Mexico (Thursday 2 November 2006).
49. Co-Chair, *Photodetectors and Optical Receivers*, **Third International Symposium on Integrated Optoelectronics, 210th Meeting of the Electrochemical Society**, Cancun, Mexico (Monday 30 October 2006).
50. Co-Chair, *Solid-State Joint General Poster Session***, 209th Meeting of the Electrochemical Society**, Denver, Colorado (Tuesday 9 May 2006).
51. Co-Chair, *Active and Passive Components in CMOS-Compatible Technologies***, IEEE IEDM**, Washington, DC (Wednesday 7 December 2005).
52. Co-Chair, *Detection of Bio-Molecules***, 208th Meeting of the Electrochemical Society**, Los Angeles, California (Thursday 20 October 2005).
53. Co-Chair, *Bio-Functional Surfaces*, **208th Meeting of the Electrochemical Society**, Los Angeles, California (Tuesday 18 October 2005).
54. Chair, *Optoelectronic and Photonic Devices*, **18th International Conference on Noise and Fluctuations (ICNF 2005),** Salamanca, Spain (Tuesday 20 September 2005).
55. Co-Chair, *Emerging Dielectrics II*, **207th Meeting of the Electrochemical Society**, Quebec City, PQ (19 May 2005).
56. Co-Chair, *Thin Film Photonics*, **207th Meeting of Electrochem. Soc.**, Quebec City, Quebec (Tues. 17 May 2005).
57. Co-Chair, *Defects/Plasma-Induced Damage*, **207th Meeting of the Electrochemical Society**, Quebec City, Quebec (Monday 16 May 2005).
58. Co-Chair, *Interface Characterization*, **207th Meeting of the Electrochemical Society**, Quebec City, Quebec (Monday 16 May 2005).
59. Chair, *WCM-1*, **Workshop on Compact Modeling – Nanotech 2005**, Anaheim, California (Tuesday 10 May 2005).
60. Chair, *Linearity, Distortion and Noise*, **Fifth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2004)**, Dominican Republic (Thursday 4 November 2004).
61. Co-Chair, *Solid-State Joint General Poster Session*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Tuesday 5 October 2004).
62. Co-Chair, *Fabrication*, **Second International Symposium on Integrated Optoelectronics, 206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 4 October 2004).
63. Co-Chair, *Active and Passive Optoelectronic Components*, **Second International Symposium on Integrated Optoelectronics, 206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 4 October 2004).
64. Co-Chair, Novel *Photonic Structures*, **Second International Symposium on Integrated Optoelectronics, 206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 4 October 2004).

65. Chair, *Phase Noise in Oscillators and Related Circuits*, **SPIE Conference on Noise in Devices and Circuits**, Gran Canaria, Spain (Friday 28 June 2004).
66. Chair, *Noise in MOSFETs*, **SPIE Conf. on Noise in Devices and Circuits**, Gran Canaria, Spain (Wed. 26 June 2004).
67. Chair, *Modeling of Passives*, **Workshop on Compact Modeling – Nanotech 2004**, Boston, MA (10 March 2004).
68. Co-Chair, *Emerging Materials and Devices*, **Seventh International Symposium on Low Temperature Electronics, 204th Meeting of the Electrochemical Society**, Orlando, Florida (Wednesday October 15, 2003).
69. Co-Chair, *Device Physics and Components*, **Seventh International Symposium on Low Temperature Electronics, 204th Meeting of the Electrochemical Society**, Orlando, Florida (Tuesday October 14, 2003).
70. Chair, *Electronic and Optoelectronic Devices 6*, **17th International Conference on Noise and Fluctuations (ICNF 2003),** Prague, Czech (Wednesday 20 August, 2003).
71. Chair, *Mesoscopic Devices*, **17th International Conference on Noise and Fluctuations (ICNF 2003),** Prague, Czech (Monday 18 August, 2003).
72. Chair, *Measurements and Limitations*, **SPIE Conference on Noise in Devices and Circuits**, Santa Fe, New Mexico (Wednesday 4 June, 2003).
73. Chair, *Noise in MOSFETs I*, **SPIE Conf. on Noise in Devices & Circuits**, Santa Fe, NM (Mon. 2 June, 2003).
74. Co-Chair, *Characterization*, **Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 203rd Meeting of the Electrochemical Society**, Paris, France (Friday 2 May, 2003).
75. Co-Chair, *Film Application, Device Characterization/Reliability*, **Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 203rd Meeting of the Electrochemical Society**, Paris, France (Wednesday 30 April, 2003).
76. Co-Chair, *Solid State Joint General Poster Session***, 203rd Meeting of the Electrochemical Society**, Paris, France (Tuesday 29 April, 2003).
77. Co-Chair, *Related Oxides/Modeling*, **Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 203rd Meeting of the Electrochemical Society**, Paris, France (Tuesday 29 April, 2003).
78. Co-Chair, *Processing, Properties and Optoelectronic Components***, First Int. Symposium on Integrated Optoelectronics, 201st Meeting of the Electrochemical Soc.**, Philadelphia, Pennsylvania (Monday 12 May, 2002).
79. Co-Chair, *Detectors, Receivers and Optical Interconnects***, First Int. Symposium on Integrated Optoelectronics, 201st Meeting of the Electrochemical Society**, Philadelphia, Pennsylvania (Tuesday 12 May, 2002).
80. Chair, *Session 6, Workshop on Compact Modeling*, **5th International Conference on Modeling and Simulation of Microsystems** (Wednesday 24 April, 2002).
81. Chair, *Solid-State Devices 3*, **Fourth International Caracas Conference on Devices, Circuits and Systems (ICCDS-2000)**, Aruba (Thursday 18 April, 2002).
82. Co-Chair, *SiO_2 Stress and Interfaces Session*, **Sixth Int. Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, 199th Meeting of the Electrochemical Society, Washington, DC (Wednesday 28 March, 2001).
83. Co-Chair, *Silicon Nitride Session*, **Sixth International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, 199th Meeting of the Electrochemical Society, Washington, DC (Thursday 29 March, 2001).
84. Co-Chair, *Oxidation and Processing Session*, **Electronics/Dielectric Science and Technology Joint General Session**, 199th Meeting of the Electrochemical Society, Washington, DC (Thursday 29 March, 2001).
85. Co-Chair, Silicon Processing Session, **Electronics/Dielectric Science and Technology Joint General Session**, 199th Meeting of the Electrochemical Society, Washington, DC (Thursday, March 29, 2001).
86. Co-Chair, *Electronics/Dielectric Science and Technology Joint General Session*, **198th Meeting of the Electrochemical Society**, Phoenix, Arizona (Thursday 26 October, 2000).
87. Chair, *Optical Devices*, **30th European Solid-State Device Research Conf.**, Cork, Ireland (12 September, 2000).
88. Co-Chair, *Thin Films in IC Technology*, **Electronics/Dielectric Science and Technology Joint General Session,** 197th Meeting of the Electrochemical Society, Toronto, Ontario (Wed 17 May, 2000).
89. Co-Chair, **State-of-the-Art Program on Compound Semiconductors XXXI,** 196th Meeting of the Electrochemical Society, Honolulu, Hawaii (Wednesday 20 October, 1999).
90. Co-Chair, *Cryogenic Application Aspects*, **Fifth Symposium on Low Temperature Electronics**, 196th Meeting of the Electrochemical Society, Honolulu, Hawaii (Thursday 21 October, 1999).
91. Co-Chair, *Processing, Characterization and Devices II,* **Electronics/Dielectric Science and Technology Joint General Session,** 196th Meeting of the Electrochemical Society, Honolulu, Hawaii (Friday 22 October, 1999).
92. Co-Chair, *Dielectrics and Dielectrics Processing II*, **Electronics/Dielectric Science and Technology Joint General Session,** 196th Meeting of the Electrochemical Society, Honolulu, Hawaii (Thursday 21 October, 1999).
93. Session Chair, *Measurement Technique*, **15th International Conference on Noise in Physical Systems and 1/f**

Fluctuations (ICNF '99), Hong Kong (Thursday 26 August, 1999).

94. Chair, *CMOS Sensors*, **Canadian Semiconductor Technology Conf.**, Ottawa (Thursday 12 August, 1999).
95. Chair, *Noise in Circuits*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (Thursday 15 July, 1999).
96. Chair, *Noise Spectroscopy, Diagnostics and Measurements*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (Wednesday 14 July, 1999).
97. Co-Chair, *Characterization, Defects and Properties*, **Fifth Symp, on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, 195th Meeting of the Electrochemical Society, Seattle, Washington (2-7 May, 1999).
98. Co-Chair, *Processing and Fabrication*, **Electronics/Dielectric Science and Technology Joint General Session**, 195th Meeting of the Electrochemical Society, Seattle, Washington (2-7 May, 1999).
99. Co-Chair, *Parameter Extraction*, **IEEE Int. Conf. on Microel. Test Structures (ICMTS 99)** (Thur. March 18, 1999).
100. Chair, *Photodetectors Session*, **International Conference on Fiber Optics and Photonics (Photonics -98)**, New Delhi, India (Wednesday 16 December, 1998)
101. Chair, **V11th Van Der Ziel Symposium on Quantum 1/f Noise & Other Low Frequency Fluctuations in Electronic Devices**, St. Louis, Missouri (7-8 August, 1998).
102. Co-Chair, *Silicon Materials and Processing III*, **Dielectric Science and Technology/Electronics Joint General Session**, 191st Meeting of the Electrochemical Society, San Diego, California (Wednesday 6 May, 1998).
103. Co-Chair, *Optoelectronics Devices, Defects and Reliability*, **State-of-the-Art Program on Compound Semiconductors XXVII**, 193rd Meeting of the Electrochem. Society, San Diego, California (Tuesday 5 May, 1998).
104. Co-Chair, *Oxidation Processes*, **Dielectric Science and Technology/Electronics Joint General Session**, 191st Meeting of the Electrochemical Society, San Diego, California (Tuesday 5 May, 1998).
105. Chair, *Solid State Devices II*, **Second International Caracas Conference on Devices, Circuits and Systems (ICCDS-98)**, Margarita Island, Venezuela (Tuesday 2 March, 1998).
106. Chair, *Transistors Session*, **Canadian Semiconductor Tech. Conf.**, Ottawa, Canada (Thursday 14 August, 1997)
107. Chair, *L.F. Noise in Si Devices Session*, **14th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Leuven, Belgium, (Thursday 17 July, 1997).
108. Chair, Electrochemical Society, **State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVI)**, 191st Meeting of the Electrochemical Society, Montreal, Canada (Wednesday 7 May, 1997).
109. Chair, *Reliability Session*, Electrochemical Society, **Fourth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, 191st Meeting of the Electrochemical Society, Montreal, Canada (Monday 5 May, 1997).
110. Chair, *Sensor and Circuits Session*, Electrochemical Society, **Fourth Int'l Symp. on Low Temp. Electronics and High Temp. Superconductivity**, 191st Meeting of the Electrochem. Soc., Montreal, Canada (Wed. 7 May, 1997).
111. Session Chairman, Noise in Microwave Semiconductor Devices, **1996 Asia-Pacific Microwave Conference** (APMC '96), New Delhi, India (17-20 December, 1996).
112. Chairman, *Device Studies and Imaging and Readout Sessions*, **187th Meeting of the Electrochemical Society**, Symposium on Low Temp. Electronics & High Temp. Superconductivity, Reno, Nevada, USA (21-26 May, 1995).
113. Vice-Chairman, *MOS Devices Session*, **187th Meeting of the Electrochemical Society**, Symposium on Low Temperature Electronics and High Temperature Superconductivity, Reno, Nevada, USA (21-26 May, 1995).
114. Chairman, *Heterostructures and Alternative Devices Session*, **Electrochemical Society Spring Meeting**, Honolulu, Hawaii (16-21 May, 1993).
115. Chairman, *Characterization and Parameter Extraction Session*, **179th Meeting of the Electrochemical Society**, Symposium on Low Temperature Electronic Device Operation, Washington, D.C., USA (5-10 May, 1991).
116. Vice-Chairman, *Electronics/Dielectrics Science and Technology Joint General Session*, **179th Meeting of the Electrochemical Society**, Symp. on Low Temp. Electronic Device Operation, Washington, D.C., (5-10 May, 1991).
117. Chairman, *Cold Electronics and Instrumentation*, **Low Temperature Engineering and Cryogenics (LTEC 90) Conference**, Southampton, United Kingdom (17-19 July, 1990).
118. Chairman, *Instrumentation and High Power Devices*, **First International Conference on Low Temperature Electronics**, Berkeley, California, USA (23-26 April, 1990)
119. Session Chairman - **1989 Canadian Conference on Very Large Scale Integration (CCVLSI 89)**, Vancouver, British Columbia, Canada (22-24 October, 1989).

Journals Reviewing

1. ACS Applied Materials & Interfaces (2013 -).
2. Analog Integrated Circuits and Signal Processing (1996 -).
3. Applied Optics (1989).
4. Applied Physics Letters (1996 -).
5. Arabian Journal for Science and Engineering (1993).
6. Canadian Journal of Physics (1992 -).
7. Chinese Optics Letters (2013 -).
8. Cryogenics (1988 -).
9. Electrochemical and Solid-State Letters (ESL)
10. Fluctuations and Noise Letters (2001 -)
11. Frontiers of Optoelectronics, Higher Education Press and Springer (2013 -).
12. IEE Electronics Letters (1994 -).
13. IEE Proceedings (1995 -)
14. IEEE Electron Device Letters (1994 -).
15. IEEE Journal of Lightwave Technology (1996 -).
16. IEEE Journal of Display Technology (2011 -).
17. International Journal of Modern Physics B (2013 -).
18. IEEE Journal of Quantum Electronics (1998 -).
19. IEEE Journal Solid State Circuits (1991 -).
20. IEEE Microwave and Guided Wave Letters (2000).
21. IEEE Potentials (2016 -)
22. IEEE Photonics Technology Letters (2001 -)
23. IEEE Transactions on Communications (2015 -).
24. IEEE Transactions on Biomedical Circuits and Systems (2009-)
25. IEEE Transactions on Circuits and Systems I (2010 -).
26. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (1994 -).
27. IEEE Transactions on Electron Devices (1995 -).
28. IEEE Trans. on Microwave Theory and Techniques (2002 -)
29. IEEE Microwave and Wireless Components Letters (2002 -)
30. IEEE Sensors Journal (2010 -).
31. IEEE Transactions on Nanotechnology (2009-)
32. IET Circuits, Devices and Systems (2009-)
33. IETE Technical review (2015 -).
34. International Journal of High Speed Electronics and Systems (2002).
35. Ionics (2012 -).
36. Journal of Applied Physics (1995 -).
37. Journal of Electrical and Electronics Engineering Research, Academic Journals (2013 -).
38. Journal of Electrical and Computer Engineering, Hindawi Publishing Corporation (2014 -).
39. Journal of the Electrochemical Society (1994 -).
40. Materials Science and Engineering B (1992 -).
41. Microelectronic Engineering (2010 -).
42. Microelectronics Journal (2008 -)
43. Microelectronics Reliability (1997 -)
44. Modern Physics Letters B (2013 -).
45. Nano Energy (2015 -).
46. Nano Letters (2009 -)
47. Nanotechnology (2010 -)
48. Nature Communications (2013 -)
49. Nature Scientific Reports (2013 -)

50. Neural Computing and Applications, Springer Journal (2015 -).
51. Optics Communications (2006 -)
52. Optics Express (2005 -)
53. Organic Electronics (2009-)
54. Philosophical Magazine Letters (2009-)
55. Physica B (2009-)
56. Physica E (2012 -).
57. Journal "Recent Patents on Engineering", Bentham Science Publishers (2013 -).
58. Reviews of Scientific Instruments (2015 -).
59. Semiconductor Science and Technology (1999 -)
60. Sensors (2009-)
61. Sensors and Actuators: A. Physical (2015 -).
62. Sensors & Actuators: B. Chemical (2009 -).
63. Solid State Electronics (1987 -).
64. Synthetic Metals (2009 -).
65. Thin Solid Films (2010 -).
66. Trends in Environmental Analytical Chemistry (2015 -).
67. Journal of Modern Optics (2013 -).

Conference Proceedings Reviewing (Incomplete List)

1. ***Canadian Conference on VLSI***, Vancouver, B.C. (1989).
2. Thirteenth ***Canadian Semiconductor Technology Conference***, Montreal (August 2007)
3. Twelfth ***Canadian Semiconductor Technology Conference***, Ottawa (August 2005).
4. Eleventh ***Canadian Semiconductor Technology Conference***, Ottawa (August 2003).
5. Tenth ***Canadian Semiconductor Technology Conference***, Ottawa (13-17 August, 2001).
6. Ninth ***Canadian Semiconductor Technology Conference***, Ottawa (10-13 August, 1999).
7. Eight ***Canadian Semiconductor Technology Conference***, Ottawa (14-18 August, 1995).
8. Bioelectronics, Biointerfaces, and Biomedical Applications 2, 210th Meeting of the ***Electrochemical Society***, Cancun, Mexico (29 October – 3 November 2006).
9. Dielectrics and the Dielectric-Electrolyte Interface in Biological and Biomedical Applications, The 208th Meeting of the ***Electrochemical Society***, Los Angeles, California (17-21 October 2005).
10. Fourth International Symposium on Integrated Optoelectronics, 214th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (12-17 October 2008).
11. Third International Symposium on Integrated Optoelectronics, 210th Meeting of the ***Electrochemical Society***, Cancun, Mexico (29 October – 3 November 2006).
12. Second International Symposium on Integrated Optoelectronics, 206th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (3-8 October 2004).
13. First International Symposium on Integrated Optoelectronics, 201st Meeting of the ***Electrochemical Society***, Philadelphia, Pennsylvania (12-17 May, 2002).
14. Seventh International Symposium on Low Temperature Electronics, 204th Meeting of the ***Electrochemical Society***, Orlando, Florida (12-17 October, 2003).
15. Sixth International Symposium on Low Temperature Electronics, 2001 Joint Int'l Meeting of The ***Electrochemical Society and the Int'l Society of Electrochemistry***, San Francisco, CA (2-7 September, 2001).
16. Fifth Symposium on Low Temperature Electronics, 196th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (17-22 October, 1999).
17. Fourth International Symposium on Low Temp. Electronics and High Temperature Superconductivity, 191st Meeting of the ***Electrochemical Society***, Montreal, Canada (4-9 May, 1997).
18. Organic Semiconductor Materials, Devices, and Processing 2, 216th Meeting of the **Electrochemical Society**, Vienna, Austria (4-9 October 2009).
19. Organic and Polymeric Semiconductor Devices I, 212th Meeting of the ***Electrochemical Society***, Washington, DC (7-12 October 2007).
20. Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics X, 215th Meeting of the **Electrochemical Society**, San Francisco, California (24-29 May 2009).

21. Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics IX, 211th Meeting of the ***Electrochemical Society***, Chicago, Illinois (6-11 May 2007).
22. Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics VIII, 207th Meeting of the ***Electrochemical Society***, Quebec City, Quebec (15-20 May 2005).
23. Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 203rd Meeting of the ***Electrochemical Society***, Paris, France (27 April 2 May, 2003).
24. Sixth International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 199th Meeting of the ***Electrochemical Society***, Washington, DC (25-30 March, 2001).
25. Fifth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 195th Meeting of the ***Electrochemical Society***, Seattle, Washington (2-7 May, 1999).
26. Fourth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 191st Meeting of the ***Electrochemical Society***, Montreal, Canada (4-9 May, 1997).
27. State-of-the-Art Program on Compound Semiconductors XXXI, 196th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (17-22 October, 1999).
28. State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVII), 193rd Meeting of the ***Electrochemical Society***, San Diego, California (3-8 May, 1998).
29. State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVI), 191st Meeting of the ***Electrochemical Society***, Montreal, Canada (4-9 May, 1997).
30. Thin Film Transistor Technologies IV, 194th Meeting of the ***Electrochemical Society***, Boston, Massachusetts (1-6 November, 1998).
31. Fifth IEEE International ***Caribbean Conference on Devices, Circuits and Systems*** (ICCDS-2004), Dominican Republic (3-5 November, 2004).
32. Fourth IEEE International ***Caribbean Conference on Devices, Circuits and Systems*** (ICCDS-2000), Aruba (17-19 April, 2002).
33. Third IEEE International ***Caracas Conference on Devices, Circuits and Systems*** (ICCDS-2000), Cancun, Mexico (15-17 March, 2000).
34. Second International IEEE ***Caracas Conference on Devices, Circuits and Systems*** (ICCDS-98), Margarita Island, Venezuela (2-4 March, 1998).
35. Eight IEEE International Conference on ***Electron Devices and Solid-Sate Circuits*** (EDSSC 2012), Bangkok, Thailand (3 -5 December 2012).
36. Sixth International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC 2002), Budapest, Hungary (26-29 May, 2002).
37. Fifth International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC 2000), Crete, Greece (21-24 May, 2000).
38. Fourth International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '97), Cardiff, Wales (22-24 June, 1998).
39. Third Int'l Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '96), Freiburg, Germany (12-15 May 1996).
40. Second International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '94), Parma, Italy (18-20 May, 1994).
41. First Int'l Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '92), Ecole Centrale de Lyon, Lyon, France (19-22 May, 1992).
42. ***European Nano Systems*** 2006, Paris, France (14-15 December 2006).
43. First International ***Conference on Low Temperature Electronics***, Berkeley, California, USA (1990).
44. ***IEEE Bipolar Circuits & Technology Meeting*** (BCTM) (1993).
45. ***IEEE Device Research Conference*** (2003).
46. ***IEEE Int'l Electron Device Meeting*** (IEDM) (1994, 2003-2005).
47. ***IEEE Int'l Conf. on Electron Devices and Solid-State Circuits*** 2008 (EDSSC2008), Hong Kong (8-10 Dec. 2008).
48. ***IEEE Conf. on Electron Devices and Solid-St. Cir***., Hong Kong, (7-9 July, 2003).
49. ***20th IEEE International Conference Mixed Design of Integrated Circuits and Systems*** (MIXDES), Gdynia, Poland (20-22 June 2013).
50. ***IEEE Device Research Conference*** (2003-2004)
51. ***IEEE International Conference on Electron Devices and Solid-State Circuits*** 2007 (EDSSC2007), Southern Taiwan University, Tainan, Taiwan (20-22 December 2007).

52. Third ***International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics***, Montreux, Switzerland (20-23 October, 2003).
53. ***IEEE International Conference on RFID 2007***, Grapevine, Texas (26-28 March 2007).
54. ***IEEE International Reliability Physics Symposium*** (IRPS), San Diego, California, USA (30 March - 2 April 1992).
55. ***IEEE International Reliability Physics Symposium*** (IRPS), Las Vegas, Nevada, USA (8-11 April, 1991).
56. ***IEEE International Reliability Physics Symposium*** (IRPS), New Orleans, Louisiana, USA (26-29 March, 1990).
57. ***IEEE International Reliability Physics Symposium*** (IRPS), Phoenix Arizona, USA (11-13 April, 1989).
58. ***IEEE International Conference on Computers and Devices for Communications* (*CODEC*)**, Calcutta, India (17-19 December 2012).
59. ***IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC 2012)**, Calcutta, India (14-16 December 2009).
60. ***IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC 2009)**, Calcutta, India (18-20 December 2006).
61. ***IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC 2006)**, Calcutta, India (18-20 December 2006).
62. ***IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC 2004)**, Calcutta, India (1-3 January, 2004).
63. ***22nd International Conference on Noise and Fluctuations*** (ICNF 2013), Montpellier, France (24-28 June 2013).
64. ***21st International Conference on Noise and Fluctuations*** (ICNF 2011), Toronto, Canada (12-16 June 2011).
65. Twentieth ***International Conference on Noise and Fluctuations*** (ICNF2009), Pisa, Italy (15-19 June 2009).
66. Nineteenth ***International Conference on Noise and Fluctuations*** (ICNF2007), Tokyo, Japan (September 2007).
67. Eighteenth ***International Conf. on Noise and Fluctuations*** (ICNF2005), Salamanca, Spain (19-23 September 2005).
68. Seventeenth ***International Conference on Noise and Fluctuations***, Prague, Czech (August 18-22, 2003).
69. Sixteenth ***International Conference on Noise in Physical Systems and 1/f Fluctuations***, Gainesville, Florida (22-25 October, 2001).
70. Fifteenth ***International Conference on Noise in Physical Systems and 1/f Fluctuations*** (ICNF '99), Hong Kong (23-26 August, 1999).
71. Fourteenth ***International Conference on Noise in Physical Systems and 1/f Fluctuations*** (ICNF) (1997 -)
72. Eight ***Jordanian International Electrical and Electronics Engineering Conf.***, Amman, Jordan (16 - 18 April 2013).
73. International ***Symposium on Flexible Electronics*** (ISFE), Tarragona, Spain (6-9 April 2008).
74. ***Polytronic 2007*** – The 6th ***International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics***, Miraikan - Odaiba, Tokyo, Japan (16-18 January 2007).
75. ***Low Temperature Engineering and Cryogenics*** (LTEC 90) Conference, Southampton, United Kingdom (17-19 July, 1990).
76. ***Second IEEE Saudi International Conference on Electronics, Communications and Photonics*** (SIEPC-2013), Riyadh, Saudi Arabia (27-30 April 2013).
77. ***24th Symposium on Microelectronics Technology and Devices,*** Natal, Brazil (August 31 - September 3, 2009).
78. ***SIGGRAPH Conference***, USA (1991).
79. ***SPIE Conf. on Noise in Devices and Circuits***, Maspalomas, Gran Canaria, Spain (26-28 May 2004).
80. ***SPIE Conference on Noise and Information in Nanoelectronics***, Sensors and Standards, Santa Fe, New Mexico (1-4 June, 2003).
81. ***SPIE International Symposium on Microelectronics and Assembly - Automatic Inspection and Novel Instrumentation Symposium***, Singapore (23-27 June, 1997).
82. The ***Fourth IASTED International Conference on Circuits, Signals, and Systems***, San Francisco, California, (20-22 November 2006).
83. The 12th ***International Meeting on Chemical Sensor*** (IMCS-12), Columbus, Ohio (13-16 July 2008).
84. ***First IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare*** (Ubi-HealthTech 2013), Jinhua, China (1-3 July 2013).
85. Fourth ***International Conference on Unsolved Problems of Noise and Fluctuations in Physics, Biology & High Technology***, Gallipoli (Lecce), Italy (6-9 June, 2005)
86. Third ***International Conference on Unsolved Problems of Noise*** (UPON '02), Washington, DC (September, 2002).
87. Second ***International Conf. on Unsolved Problems of Noise*** (UPON '99), Adelaide, Australia (11-15 July, 1999).
88. First ***International Conference on Unsolved Problems in Noise***, Szeged, Hungary (September 1996).

89. ***27th Symposium on Microelectronics Technology and Devices*** (SB Micro 2012), Brasilia, Brazil (30 August -2 September 2012)

Professional Service to Granting Agencies

- Reviewer of proposal, Alberta Ingenuity NanoWorks Program (2009).
- Reviewer of proposals, British Columbia Innovation Council (BCIC), The Natural Resources and Applied Sciences (NRAS) Endowment Program – Member of the Electrical and Computer Engineering: Wireless Committee (2010).
- Reviewer of proposals, Hong Kong Science Council (2001 -).
- Reviewer for Mitacs Accelerate Research Proposal (2014 -).
- Reviewer of proposals, Science Council of British Columbia (SCBC) (1992 -1999).
- Reviewer of proposal, Research Grants Council (RGC), Hong Kong (2009 -).
- Reviewer of proposal, Science & Engineering Research Council (SERC), Singapore (2009 -).
- Reviewer of proposal, Technology Foundation – STW, Nederland (2009, 2012).
- Reviewer of proposal, US Army Medical Research and Material Command (USAMRMC), USA (2009).
- Chair, *Operations and Maintenance Support for Research Equipment* (OMSRE) Selection Committee, Natural Sciences and Engineering Research Council of Canada (2016-2017).
- Chair, GSC 1051 – *Major Resources Support*, Natural Sciences and Engineering Research Council of Canada (2010-2011).
- Member, GSC 1051 – *Major Resources Support*, Natural Sciences and Engineering Research Council of Canada (2008-2010).
- Chair, GSC 334 - *Discovery Grants*, Natural Sciences and Engineering Research Council (NSERC) of Canada (2006-2007).
- Member, GSC 334 - *Discovery Grants*, Natural Sciences and Engineering Research Council of Canada (2004-2006).
- Chair, *Digital Media*/*ICT*, Strategic Review Panel, Ontario Research Fund – Large Infrastructure Competition, Ministry of Economic Development and Innovation (2011-2012).
- Member, *Strategic Panel Review - Ontario Research Fund Large Infrastructure*, Ministry of Economic Development and Innovation (2012).
- Member, *Expert Committee for CFI Major Science Initiative /NSERC MRS*, The Canadian Light Source, Saskatoon, Saskatchewan, Canada (10-11 November 2011).
- Member, *Early Researcher Award Peer Review Panel*, "Information and Communication Technologies", Ministry of Research and Innovation, Ontario (Monday-Tuesday 8-9 February 2010).
- Member, *Ontario Research Fund – Research Excellence* "Information and Communication Technologies" Peer Review Panel, Ministry of Research and Innovation, Ontario (17 November 2009).
- Reviewer of several types of proposals, Natural Sciences and Engineering Research Council (NSERC) of Canada (1992-).
- Reviewer of nominations, Canada Research Chair (CRC) Program (2002-).
- Reviewer of proposals, National Science Foundation (NSF), USA (1992).

Other Activities

Member, *International Evaluation Committee*, **School of Computer Science and Technology, Huazhong University of Science and Technology(HUST)**, Wuhan, China (15-18 May 2018).

Panel Member, "*The Role of Research and Innovation in Improving Health in Megacities*", **New Leaders for Health Pre-Forum** in **Global Forum on Research and Innovation for Health 2015,** Manila, Philippines (Sunday 23 August 2015).

External Appraiser, "*External Appraisal Report on the Proposed New MASc and PhD degrees in Mechanical Engineering*," **York University Quality Assurance Procedures (YUQAP)**, 6-page report (8 December 2014).

Panel Member, Table Ronde "*Defi des Microsystemes as Quebec et au Canada*", **Journee de L'Innovation ReSMiQ**, Ecole Polytechnique de Montreal, Montreal (Thursday 19 September 2013).

Panel Member, *"Knowledge Activation & Exchange Toward Development"*, **Second Saudi International Electronics, Communications and Photonics Conference** (**SIECPC**), Riyadh, Saudi Arabia, (Monday 29 April 2013).

Panel Member, *Pervasive Health Care Technologies Discussion Panel*, **Second Saudi International Electronics, Communications and Photonics Conference** (**SIECPC**), Riyadh, Saudi Arabia, (Saturday 27 April 2013).

Member, *New Pioneer Awards Selection Committee*, **Skills For Change**, Ontario, Canada (2010).

Member, *Review Team*, **Review of the Department of Surgery**, Faculty of Health Sciences, McMaster University, Hamilton, Canada 24 pages report (6-7 October 2008).

Helped to establish a mm and sub-mm wavelength SIS receiver program in the Herzberg Institute of Astrophysics, National Research Council (Dr. John MacLeod, Head, Radio Astronomy 1986-1990).

Helped to establish a thin film device and a CCD testing facility at the Dominion Astrophysical Observatory, NRC, Victoria. Now, I have an ongoing collaboration with the Senior Engineer (R. Murowinski, Senior Engineer, NRC 1987-1992).

Judge, British Columbia Science Fair (1986-1990).

Member, Science Council of British Columbia Scholarships Committee (1990-1992).

Reviewer for Tenure and Promotion cases for several North American Universities (1988-).

Executive Member, Merrivale Elementary Home and School Association (1992-1993).

Merrivale Public School Representative, Carleton Council on Education (1992-1993).

Developed and taught a 10-week Mathematics/Science Enrichment Program at Hillcrest Elementary School, Coquitlam, B.C. (Fall 1993-Spring 1994).

External Examiner, Undergraduate Physics Program, University of the West Indies, St Augustine Campus (1996-2002).

Soccer Coach/Assistant Coach, West Hamilton Children's Soccer League (1999-2004).

Volunteer, Mission Services, Hamilton (2003-2006).

TEACHING

Regular Courses at McMaster University (1999-)

Undergraduate Courses

ECE 2EI4 Electronic Devices and Circuits-An Introduction
ECE 3EJ4 Electronic Devices and Circuits II
ECE 4EK4 Microelectronics
ECE 4EK3 Microelectronics

Graduate Courses

ECE 740 Semiconductor Device Theory and Modeling
ECE 741 Analog Integrated Circuits
ECE 711 Silicon Photonics – Fundamentals and Devices

Special Course at Hong Kong University of Science and Technology (Fall 2014)

Special Graduate Course for Electronic and Computer Engineering, Civil and Environmental Engineering, and Chemical and Biomolecular Engineering Graduate Students

ELEC6910M Sensor Technology for Environmental Applications

Regular Courses at Simon Fraser University (1986-2000)

Undergraduate Courses

ENSC 125 Basic Electrical Engineering
ENSC 225 Microelectronics I
ENSC 330 Engineering Materials
ENSC 425 Electronic System Design
ENSC 453 Semiconductor Device Engineering.

Graduate Courses

ENSC 834 Fundamentals of Optical Communications (Graduate Course)
ENSC 850 Semiconductor Device Theory (Graduate Course)
ENSC 852 Analog Integrated Circuits (Graduate Course)
ENSC 853 Digital Semiconductor Devices & Circuits (Graduate Course)

Special Topics or Directed Studies Courses at Simon Fraser University

ENSC 894 Solid State Physics (Special Topics Graduate Course).
ENSC 894 Advanced Microelectronic Devices (Special Topics Graduate Course).
ENSC 892 MOSFET Theory and Experiments (Directed Studies Graduate Course).
ENSC 892 Physics, Noise and Reliability of Avalanche Photodiodes (Directed Studies Graduate Course).
ENSC 892 MOSFETs in HF Circuits: Low Power Design and Reliability Issues (Directed Studies Graduate Course).
ENSC 891 Solid State Electronics (Directed Studies Graduate Course).

ENSC 891	High Frequency Electronics (Directed Studies Graduate Course) jointly taught with Prof Steve Hardy, Engineering Science, SFU.
ENSC 494	Special Projects Laboratory, jointly supervised with Prof Steve Hardy, Engineering Science, SFU.
ENSC 492	Special Projects Laboratory.
ENSC 493	Special Projects Laboratory.
ENSC 491	Reliability of MOS VLSI Circuits (Directed Studies Undergraduate Course).
ENSC 462	Analog Integrated Circuits (Special Topics Undergraduate Course).
ENSC 461	Introduction to MOS Devices and Circuits (Special Topics Undergraduate Course).
ENSC 461	Introduction to MOS Transistor Theory and Circuits (Special Topics Undergraduate Course).
ENSC 460	Optical Communication Systems (Special Topics Undergraduate Course).
ENSC 400	Operation and Analysis of CMOS Devices and Circuits (Directed Study Undergraduate Course).

Courses Developed

1. ECE 748 — Sensor technology (Graduate course, gave first course offering in Fall 2018).
2. ECE 711 — Silicon Photonics – Fundamentals and Devices (Graduate course, gave first course offering in Fall 2012).
3. ECE 740 — Semiconductor Device Theory and Modeling (Graduate course, gave first course offering in Fall 2001).
4. ECE 741 — Analog Integrated Circuits (Graduate course, gave first course offering in Spring 2001).
5. ENSC 894 — Advanced Microelectronic Devices (Special Topics graduate course, gave first course offering in Spring 1987).
6. ENSC 891/2 — Solid-State Electronics (Directed Studies graduate course with discussions/lectures, assignments, mid-term and final exams, gave first course offering in Spring 1992).
7. ENSC 853 — Digital Semiconductor Devices and Circuits (Graduate course, gave first course offering in Spring 1989).
8. ENSC 850 — Semiconductor Device Theory (Graduate course, gave first course offering in Fall 1997).
9. ENSC 461 — Introduction to MOS Transistor Theory and Circuits (Special Topics undergraduate course, gave first course offering in Spring 1988).
10. ENSC 461 — Introduction to MOS Devices and Circuits (Special Topics undergraduate course, gave first course offering in Spring 1990).
11. ENSC 453 — Semiconductor Device Engineering (Undergraduate course, gave first course offering in Spring 1991).
12. ECE 4EK3 — Microelectronics (Undergraduate course, gave first course offering in Fall 2000).
13. ECE 2EI4 — Electronic Devices and Circuits (Undergraduate course, gave first course offering in Spring 2000).

STUDENTS/RESEARCHERS SUPERVISED (and Position after graduation)

- **Total HQP (Highly Qualified Personnel) 241**
- **Visiting Professors, Post-Doctoral Fellows and Research Associates 61**
- **Ph.D. Students 45**
- **M. Eng and M.A.Sc. Students 68**
- **B.A.Sc. Students 67**

Visiting Professors, Post-Doctoral Fellows, Research Associates & Res. Visitors

1. Dr. Shupeng Chen (Visiting Scholar), **Information Technology** (September 2019 – August 2020), Lecturer, School of Microelectronics, Xidian University, Xi'an, China.
2. Dr. Kuntao Ye (Visiting Scholar), **Information Technology** (September 2019 – March 2020), Associate Professor, JiangXi University of Science and Technology, Ganzhou, Jiangxi, China.

3. Dr. Mohamed Naser (Visiting Scholar), **Theoretical Modeling of Functional Brain Imaging** (September – December 2019). Assistant Professor, King Faisal University, Ahsaa, Kingdom of Saudi Arabia.
4. Dr. Shulong Wang (Visiting Scholar), **Information Technology** (December 2018 – December 2019), Associate Professor, School of Microelectronics, Xidian University, Xi'an, China.
5. Dr. Honghai Deng (Visiting Scholar), **Sensors for Environmental Applications** (December 2018 – November 2019), Assistant Professor of Electrical Engineering, School Electronics and Information, Nantong University, Nantong, China.
6. Dr. Lixue Zhou (Visiting Scholar), **Bioimaging Circuits** (October 2018 – September 2019), Senior Engineer, Xi'an Electronic Engineering Research Institute, Xidian University, Xi'an, China.
7. Dr. Qingling Liu (Visiting Scholar), **Information Security and Artificial Intelligence for Smart Medical Home** (September 201 8- September 2019), Assistant Professor, College of Information and Communication Engineering, Harbin Engineering University, Harbin, China.
8. Dr. Si Pan (Postdoctoral Fellow), **Sensors for Water Quality Monitoring** (September 2018 – August 2020).
9. Li Peng (Visiting Scholar), **Smart Software (Deep Convolutional Computation Models) for Big Data Applications** (October 2018 – September 2019), Researcher, School of Software technology, Dalian University of Technology, Dalian, China.
10. Xuanjie Ye (Visiting Scholar), **Silicon-based Photodetection Systems for Biomedical Applications** (August 2017-July 2018), Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China.
11. Dr. Hao Jin (Visiting Associate Professor), **Sensor Interface and Processing Electronics and Sensor Systems** (January 2017 – January 2018), Associate Professor, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China.
12. Dr. Sasan Naseh (Research Engineer), **Wearable Sensors for Health Monitoring** (Dec 2016 to Nov 2017), Professor, Mashad University, Iran.
13. Dr. Akila Derardja (Visiting Scholar), **Mechanical Properties of Cells** (July – August 2017). Professor, University of Batna II, Batna, Algeria.
14. Dr. Khedidja Benseddik (Visiting Scholar), **Mechanical Properties of Cells** (July – August 2017), Maitre de Conference, University of Batna II, Batna, Algeria.
15. Ramez Mebrouk (Visiting Student), **Mechanical Properties of Cells** (July – August 2017), Medical Student, University of Batna II, Batna, Algeria.
16. Besma Beloucif (Visiting Student), **Mechanical Properties of Cells** (July – August 2017), Medical Student, University of Batna II, Batna, Algeria.
17. Navita Dayal (Research Assistant), **Health Aspects of Walking Signals** (January-April 2017), Founder and President, GLITR, Hamilton, Ontario, Canada.
18. Mojgan Salimi Parsa (Visiting Student from University of Tehran), **Wearable Sensors for Health Monitoring** (May 2016 to August 2017). Graduate Student, University of Tehran.
19. Dr. Kashif Nisar (Visiting Assistant Professor), **ICT for Elderly Healthcare** (Mar 2017 - Feb 2018; Jan - Dec 2016), Associate Professor, Faculty of Computing and Informatics, University Malaysia Sabah, Malaysia.
20. Dr. Mehdi Kazemeini (Visiting Professor), **Plastic Microelectronics** (February 2000 – December 2016). Research Associate, McMaster University.
21. Dr. Hyuck Jin Kwon (Postdoctoral Fellow), **Sensors for Water Quality Monitoring** (October 2013 – Nov 2015). Research Engineer, York University, York, Ontario, Canada.
22. Dr. Lluis Marsal (Visiting Professor), **Nanotechnology** (May-August 2015), Vice-Rector and Professor, URV, Tarragona, Spain.
23. Dr. Mohamed Naser (Visiting Assistant Professor), **Theoretical Modeling of Functional Brain Imaging** (September – October 2016, July - August 2014). Assistant Professor, King Faisal University, Ahsaa, Kingdom of Saudi Arabia.
24. Dr. Matiar Howlader (Senior Research Associate), **Micro- & Nano-Systems Integration Technologies** (July 2010-December 2016). Assistant Professor, McMaster University.
25. Dr. Ognian Marinov (Senior Research Associate), **Low Frequency Noise and Reliability in Semiconductor Devices** (Oct. 1999 – December 2016). Test Engineer, D&V Electronics, Woodbridge, Ontario, Canada.
26. Fangfang Zhang (Research Associate), **System Integration Technologies** (July 2010- March 2014).
27. Dr. Jianjun Gao (Visiting Professor), **RF Noise** (July – August 2012), Professor, East China Normal University, Shanghai, China.
28. Dr. Shadrokh Samavi (Visiting Professor), **FPGA Implementation of DNA Microarrays Electronic Detection Systems** (July – August 2012; Sep 2002 – Aug 2003; and Sep -2008 - August 2009). Professor, Isfahan University, Iran.
29. Dr. Fei Xu (Visiting Scholar), **Impedance Spectroscopy of Biological Systems** (March 2011-March 2012), Assistant Professor, Shanghai Dianji University, Shanghai, China.

30. Euiyoung Jeong (Visiting Researcher), **Static and Noise Modeling of Nanoscale Junctionless Transistors** (July – 2011-January 2012), PhD student, POSTECH, Pohang, South Korea.
31. Marcelo Macchi da Silva (Visiting Scholar), **High-speed, High-sensitivity CMOS Imaging Systems** (June 2010 - August 2010), Graduate Student, UNICAMP, Campinas, Brazil.
32. Dr. Yiqi Zhuang (Visiting Professor), **Low Frequency Noise and Reliability in Semiconductor Devices** (September – December 2009). Dean and Professor, XiDian University, Xi'an, China.
33. Dr. Abel García Barrientos (Post-Doctoral Fellow), **Noise Modeling in Advanced MOS Devices** (Jul-August and October-December 2009), Professor, Universidad Politécnica de Pachuca, Pachuca, Hidalgo, México.
34. Dr. Benjamin Iniguez (Visiting Professor), **Compact Modeling of Semiconductor Devices** (October 2006, November 2009), Professor, URV, Tarragona, Spain.
35. Dr. Hamdy Abd El Hamid (Post-Doctoral Fellow), **Nanoscale Silicon Transistors** (October 2007-September 2009). Assistant Professor, The British University, Cairo, Egypt.
36. Dr. Akila Derardja, (Visiting Scholar), **Microfabricated Reference Electrodes for Biosensor Applications** (June-August 2009) Maitre de Conference, Faculté de Médecine, Université de Batna, Algeria.
37. Dr. P.K. Basu (Visiting Professor), **Planar Lightwave Circuits** (October 2001 - December 2001, Summer 2002, September-November 2008, July – September 2013). Professor, Electronics Department, University of Calcutta, India.
38. Augusto Ximenes (Visiting Scholar), **Optical Detection Systems** (December 2007-August 2008). PhD Student, UNICAMP, Campinas, Brazil.
39. Nishil Gupta, (Visiting Scholar), **Statistical Processing of Biomedical Data** (May – July 2007), PhD Student, IIT Delhi, India.
40. Dr. Matiar Howlader (Research Associate), **Packaging of Semiconductor Components** (April 2005 – June 2007). Assistant Professor, McMaster University.
41. Fernando de Souza Campos (Visiting Scholar), **Fluorescence Optical Detection Systems** (January – December 2006), Assistant Professor, Electrical Engineering Department, Sao Paulo State University (UNESP), Brazil.
42. Dr. Faycal Saffih (Research Engineer), **Wireless Sensor Systems for In-Vivo Applications** (October 2005- September 2006). Pixel Architecture Designer, Voxtel, Beaverton, Oregon.
43. Dr. Guennadi Kouzaev, (Research Associate), **Modeling of Passive Microwave Components** (Oct. 2001 – August 2005). Professor, Norwegian Science and Technology University – NTNU, Trondheim, Norway.
44. Yogesh Ramadass (Research Assistant), **Broadband Circuits** (Summer 2004), Ph.D. student MIT.
45. Dr. Kamal Ghosh (Visiting Professor), **L.F. Noise Modeling** (Summer 2002). Professor, Calcutta, India.
46. Dr. Nikhil R. Das (Post-Doctoral Fellow), **Physics and Modeling of Photodetectors** (Sept. 1999 - August 2002). Professor, University of Calcutta, India.
47. Dr. C.X. Peng (Visiting Professor), **Computerized Instrumentation** (September 2001-December 2001). Professor, University of Central Michigan, Michigan, USA.
48. Dr. Yves Audet (Post-Doctoral Fellow), **Polymer Transistors** (June 2001-August 2001), Professor, Ecole Polytechnique de Montreal, Montreal, Quebec.
49. Dr. Subhananda Chakravarti (Post-Doctoral Fellow), **Polymer Transistors** (September 2000 - May 2001). Research Associate, University of Michigan, USA.
50. Dr. Jiansheng Xu (Post-Doctoral Fellow), **Noise in Semiconductor Devices and Circuits** (May 2000 -May 2001) Engineer, IBM, Burlington, USA.
51. Dr. Javier de la Hidalga-W. (Post-Doctoral Fellow), **MOSFET Device Physics and Modeling** (November 1998-November 1999, November 1996 -November 1997), Professor, INAOE, Puebla, Mexico.
52. Dr. Plamen Kolev (Post-Doctoral Fellow), **Characterization of Semiconductor Devices** (May 98 - August 1999), Engineer, Silicon Wave, San Diego, California.
53. Dr. Winnie Chu (Post-Doctoral Fellow), **Fabrication and Characterization of Chemical Sensors** (May 1998 - May 1999), Patent Scientist, UBC, Canada.
54. Dr. Xu-Yuan Chen (Post-Doctoral Fellow), **Noise in Semiconductor Devices** (May '97- November 1997), Professor, University of Tromso, Norway.
55. Dr. S. Rumyantsev (Visiting Senior Scientist), **Noise in Semiconductor Devices** (Dec. 1996 - June 1997, Spring 1998, Spring 1999). Professor, IOFFE Institute, St. Petersburg, Russia.
56. Dr. Anirban Bandyopadhyay (Post-Doctoral Fellow), **Physics and Modeling of Photodiodes** (Oct. '96 - July 1997), Photonic Design Engineer, Intel Corp., California.
57. Dr. M. Aoki (Visiting Senior Scientist) **Ultra-Low Power CMOS Devices and Circuits** (Summer 1996). Manager, Texas Instruments Research Labs, Tsukuba, Japan.

58. Dr. Edmundo Gutierrez (Visiting Professor), **Low Temperature Electronics** (Jan. 1996 - Dec. 1996), Titular Professor, INAOE, Puebla, Mexico.
59. Professor H.X. Lian (Visiting Research Scientist) **High Speed Devices, Optics, and Communication Circuits and Networks** (June 1989- December 1990) joint supervision with Prof. S. Hardy, Engineering Science, SFU - Senior Engineer, Nanowave Technologies, Etobicoke, Ontario.
60. Zhixin Yan (Visiting Research Scientist) **Semiconductor Device Physics and Circuits** (June 1989- December 1990, January 1989- December 1990) Design Engineer, Conexant Inc., Newport Beach, California.
61. Z.P. Zuo (Research Associate) **Semiconductor Device Parameter Extraction and Modeling** (May 1988 - May 1990) - Software Engineer, Cisco Ltd., California.

Ph.D. Students

62. Wei Jiang (Ph.D.), **Bioimaging Circuits and Systems** (September 2017 -).
63. Mahdi Naghshvarianjahromi (Ph.D.), **Cognitive Dynamic Systems for ICT** (September 2015 -). Co-supervised with Dr. S. Kumar.
64. Ahmed Elsharabasy (Ph.D.), **High-Frequency Diodes for Energy Harvesting Applications** (September 2015 -). Co-supervised with Dr. M. Bakr.
65. Sumit Majumdar (Ph.D.), **Sensing Systems for Ubiquitous Healthcare** (January 2016 –).
66. Mrwan Alayed (Ph.D.) **Functional Brain Imaging** (January 2014 - 2019).
67. Arif Alam (Ph.D.) **Sensors for Water Quality Monitoring** (Sept 2013 -) Co-supervised with Dr. M. Howlader.
68. Hytham A. Afifi (Ph.D.) **Theoretical Modeling of Nanoscale Semiconductor Devices** (Sep. 2010 -). On leave from studies.
69. Xiaoqing Zheng (Ph.D.) **Solid-State Imagers for PET** (Sep. 2012 – November 2017), Engineer, Ottawa.
70. Hani Alhemsi (Ph.D.) **CMOS Photo-Detector for Time-Resolved Near Infrared Spectroscopy** (Sep. 2011 - June 2016). On leave in good standing.
71. Pilar López Varo (Ph.D.), **Compact Modeling of Physical Mechanisms in Organic Solar Cells** (April 2013 – January 2017). Co-supervised with Prof. JA. Jiminez-Tejada. Researcher, Universidad de Granada, Granada, Spain.
72. Yiheng Qin (Ph.D.) **Sensors for Water Quality Monitoring** (Sep 2013 – April 2017) Co-supervised with Dr. M. Howlader. Specialist Engineer, Envirosen, Toronto, Canada.
73. Zeng Cheng (Ph.D.) **Single Photon Avalanche Diode and Circuits in CMOS towards Positron Emission Tomography Imaging Applications** (Sep. 2012 - August 2016). Co-supervised with Prof. Hao Peng. ASIC Design Engineer, AMD, Toronto, Canada.
74. Tianyi Guo (Ph.D.) **An Optical System towards In-line Monitoring of Bacteria in Drinking Water** (September 2010 – March 2016). Co-supervised with Prof. Chang-Qing Xu. Researcher, Institute of Microelectronics - Chinese Academy of Sciences, Beijing, China.
75. Darek Palubiak (Ph.D.), **CMOS Single-photon Avalanche Diodes and Time-to- digital Converters for Time Resolved Fluorescence** (Sep. 2009 – Sep 2015), Senior Engineer – Silicon and Systems, SensL Inc., Ireland.
76. Yasaman Sargolzaei Aval (Ph.D.) **Biomedical Imaging Systems** (September 2014 – August 2015). Transferred as a PhD student, USA
77. Zhiyun Li (Ph.D.) **Miniaturization of Time-Gated Raman Spectrometer with a Concave Grating and a CMOS Single Photon Avalanche Diode** (September 2010 – May 2015). Engineering, Arizona, USA
78. Mohammadreza Dadkhah (Ph.D.), **CMOS Image Sensors with Compressive Sensing Acquisition** (Sep. 2008 – April 2013). Co-supervised with Prof. S. Shirani. Research and Development Manager, Avertus Inc., Toronto
79. Waleed Shinwari (Ph.D.), **Static and Dynamic Modeling of DNA Biosensors for Biomedical Applications,** (May 2007 – September 2011). Senior Design Engineer, Altera Toronto.
80. Hossein Kassiri Bidhendi (Ph.D.) **High-speed, High-sensitivity CMOS Image Sensing** (Sep. 2010 -). Joined Ph.D. program at University of Toronto (Sept 2010-February 2011). Assistant professor, York University, Canada.
81. Munir Eldesouki (Ph.D.) **CMOS Imagers for Low-level Light and High-speed Biomedical Applications** (February 2006 – November 2010). Assistant Professor, Computer and Electronics Institute and Head of the Photonics Systems Research Department (PSR) at the National Center for Electronics, Communications, and Photonics (ECP), King Abdulaziz City for Science and Technology (KACST), Riyadh, Saudi Arabia.
82. Mohamed Naser (Ph.D.) **Theoretical Modeling of Quantum Dot Infrared Photodetectors** (September 2005 – April 2010). Co-supervised with Prof. D.A. Thompson. Assistant Professor, King Faisal University, Ahsaa, Saudi Arabia.
83. Pablo Lara Bullejos, **Modeling of Physical Mechanisms in Organic Thin-Film Transistors and Related Structures** (Sep 2006-Oct 2009). Co-supervised with Prof. JA. Jiminez-Tejada. Researcher, Universidad de Granada, Spain.
84. Farseem M. Mohammedy, (Ph.D.) **Growth, Fabrication and Characterization of Metamorphic InGaSb Photodetectors for Application in 2.0 μm and Beyond** (September 2002-August 2008). Co-supervised with Prof.

D.A. Thompson. Professor, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.

85. Naser Faramarzpour (Ph.D.) **CMOS Photodetectors for Low-Light Level Imaging Applications** (May 2004 – August 2008). Co-supervised with Prof. S. Shirani, Design Specialist, DALSA, Waterloo, Canada.
86. Hamed Mazhab Jafari (Ph.D.) **Ultra-wideband Systems for Medical Imaging** (September 2006-August 2007). Transferred to University of Toronto.
87. Saman Asgaran, (Ph.D.) **RF Noise Modeling of MOSFETs and its Applications in Low-Noise RFIC Design** (January 2003-August 2007). Co-supervised with Prof. J. Chen. Senior RF Engineer, AMI Semiconductor, Waterloo.
88. Yasaman Ardeshipour, (Ph.D.) **Silicon Photodetectors and Integrated Imaging Systems for Medical Applications** (January 2003-August 2007). Co-supervised with Prof. S. Shirani. Left program for USA.
89. Wai-Leung Ngan, (Ph.D.) **Ultra-Low Power CMOS Integrated Circuits** (September 2005 -). On leave from January 2006 for personal reasons. Engineer, PMC Sierra, Vancouver, BC.
90. Rizwan Murji (Ph.D.**) Low-Power CMOS Radio Frequency Integrated Circuits for Frequency Synthesis** (September 2002-August 2005), Senior Electronics Engineer, Motorola Inc., Schaumberg, Illinois, USA.
91. Yasser El-Batawy (Ph.D.) **Modeling of Advanced Photodiodes** (January 2001-April 2005). Assistant Professor Engineering Physics Department, Cairo University, Egypt.
92. S. Naseh (Ph.D.) **Investigation of Hot-Carrier Effects on RF CMOS Integrated Circuits** (Jan. 1999 – March 2005). Assistant Professor, Ferdowsi University, Mashad, Iran.
93. Yunxi Shi, (Ph.D.) **Design and Fabrication of Advanced Photodiodes** (May 2002-December 2004). Co-supervised with Prof. D.A. Thompson – left the Ph.D. program.
94. Mathieu Marin (Ph.D.), **Etude Experimentale du Bruit en 1/f Dans Les Composants CMOS Issus de Technologie Sub-0.18µm** (December 2003). Co-supervised with Mario DeMurcia, Université de Montpellier II, France. Engineer, ST Microelectronics, Grenoble, France.
95. Mojammel Al-Hakim, (Ph.D.), **Modeling of Ultra-small MOSFETs** (May 2003-August 2003), left program for personal reasons, Assistant Professor, BUET, Bangladesh.
96. C.H. Chen (Ph.D.) **Noise Characterization and Modeling of MOSFETs for RFIC Applications** (September 1998 - September 2002). Assistant Professor, McMaster University, Hamilton, Ontario.
97. Y. Xiao (Ph.D.) **Modeling of SAGCM Avalanche Photodiodes for Multi-Gigabit Optical Fiber Communications** (May 1997 -December 2001). Photodetector Designer, Perkin-Elmer, Montreal, Quebec.
98. Martin Sanden (Ph.D.) **Low Frequency Noise in Si-Based High Speed Bipolar Transistors** (September 2000 - March 2001). Co-supervised with Mikael Ostling, KTH, Sweden. RFIC Design Engineer, Spirea, Stockholm, Sweden.
99. W. Zhong (Ph.D.) **Modeling of Active and Passive Microwave Structures** (Jan. 1998 - May 1999, Ph.D. not completed), RF Engineer, Sierra Wireless, Vancouver.
100. S. An (Ph.D.) **Material and Device Characterization of InP/InGaAs Avalanche Photodiodes for Multi-Gigabit Optical Fiber Communications** (January 1996 - Summer 1999), APD Design Engineer, Nortel Networks, Ottawa.
101. Mihai Margarit (Ph.D.) **Radio Frequency Integrated Circuits for Communications: Design, Analysis and Experiments** (September 1994 - May 1999), Manager, RFIC Group, National Semiconductor, San Diego, California.
102. Javier de la Hidalga-W. (Ph.D. from INAOE, Mexico), **Low Temperature Modeling and Simulation of Semiconductor Devices** (September 1998) - co-supervised with Prof. Edmundo Gutierrez-D., INAOE, Puebla, Mexico, Professor, INAOEP, Mexico.
103. Plamen Kolev (Ph.D.) **Development and Applications of a New DLTS Method and New Averaging Techniques** (September 1994-April 1998), Test Engineer, Silicon Wave, San Diego, California.
104. Xiaojun Zhao (Ph.D.) **Physics and Modeling of Photodiodes** (September 1994 -January 1995, Ph.D. not completed), Systems Engineer, JDS Uniphase, Ottawa.
105. Arya Raychaudhuri (Ph.D.) **Modeling and Simulation of Saturating Hot-Electron Degradation in LDD MOSFETs - From the Early Mode to the Late Mode** (September 1991 - June 1996) - Manager, Rockwell Semiconductor Systems, California.
106. Forrest Ma (Ph.D.) **Characterization and Modeling of SAGCM InP/InGaAs Avalanche Photodiodes for Multigigabit Optical Fiber Communications** (September 1991 - April 1995) - RF Engineer, AT&T Bell Labs, Allentown, Pennsylvania. (joint supervision with Prof. S. Hardy, Engineering Science, SFU).

M.A.Sc. and M. Eng. Students

107. Ryan Scott (M.A.Sc.), **Smart Systems** (September 2019 -).
108. Yamn Chalich (M.A.Sc.), **Biomedical Imaging Systems** (September 2017 -).
109. Abu Ilius Faisal (M.A.Sc.), **Smart Knee Monitoring System** (September 2017 -).
110. Dennis Clyne, (M.Eng.), **Software for Sensor Instrumentation Systems** (May 2017 – April 2018).

111. Javad Monshi Zadeh (M.A.Sc.), **Biomedical Imaging Systems** (September 2016 – December 2017).
112. Andy Li, (M.Eng.), **ECG System for Long-term Monitoring** (Sep 2016-December 2016), Engineer, Toronto.
113. Nathan DeJeong (M.Eng.), **Walking Parameters – Analysis** (Sep 2016- December 2016).
114. Navita Dayal (M.A.Sc.), **Health Aspects of Walking Signals** (January-December 2016). Founder and President, GLITR, Hamilton, Ontario, Canada.
115. Otmane Bekkaoui, (M.Eng.), **Walking Parameters – Analysis** (May 2015 - May 2016), Engineer, Quebec.
116. Priyanka Mandal (M.Eng.), **Walking Age Health Analyzer** (January-December 2015), PhD. Student, University of Calcutta, Kolkata, India.
117. Krishna Tank (M.Eng.), **Walking Age Health Analyzer** (January-December 2015). Consulting Engineer, Tata, Canada.
118. Niharika Mittal (M.Eng.), **Walking Age Health Analyzer** (May-Dec 2014). Consulting Engineer, Tata, Canada.
119. Jasmine Shant (M.Eng.), **Walking Age Health Analyzer** (May-Dec 2014). Consulting Engineer, Tata, Canada.
120. Leon Chen (M.Eng.), **ECG System for Long-term Monitoring** (September 2013 – April 2014). Engineer, Toronto.
121. Dip Patel (M.Eng.), **Smart Knee Monitoring System** (September 2013 – April 2014). Consulting Engineer, Chrysler, Brampton, Ontario, Canada
122. Aparna Murthy (M.A.Sc.), **Illumination Design for Dual View Endoscopic Imaging Design** (September 2010 -). Co-supervised with Prof. Qiyin Fang.
123. Tamnun E Mursalin (M.A.Sc.), **Parallel Image Processing for High Content Screening Data** (Sep. 2010 – January 2013). Co-supervised with Prof. Qiyin Fang, Alexander Jeremic and David Andrews. Computer Specialist, Bell Canada, Toronto.
124. Amin Abbasfard (M.Eng.), **ECG System for Long-term Monitoring** (September 2011 – Dec 2012). Engineer, Toronto.
125. Feng Cong (M.A.Sc.), **Experimental Study of DKPP-βT Polymeric Thin Film Transistor** (Sep 2010 – Dec 2012). Computer Consultant, RBC, Toronto.
126. Ebrahim Nemati (M.A.Sc), **In-Pixel Time Digital Converter for Time-of-Flight PET Imaging** (September 2010 – September 2012). PhD student, UCLA.
127. Anton Knigavko (M.Eng.), **Optical Grating for Micro-Raman Spectrometer** (September 2010 – Dec 2011). Automated Mineralogy Scientist, Activation Laboratories Ltd., Ancaster, ON, Canada.
128. Sumit Majumder (M.A.Sc.), **Random Telegraph Signal Noise in CMOS Image Sensor (CIS) and Use of a CIS in a Low-Cost Digital Microscope** (September 2009 – September 2011). Electronics Engineer, Fugro Canada Corp., Mississauga, Canada.
129. Kajan Kanagaratnam (M.Eng.), **Low-cost, High-speed Digital Microscope using CMOS Image Sensors** (September 2010- August 2011). Engineer, IBM Canada, Markham.
130. Salman Safari, (M.A.Sc.) **Microfluidic Reference Electrodes for use in BioFETs Sensor System** (September 2008 – November 2010). Co-supervised with Prof. R. Selvaganapathy. PhD student, McGill University.
131. Roy Wang (M.A.Sc.) **Dual-view Catadioptric Objective Lens Design for Endoscopic Fluorescence Imaging Applications** (Sep 2008 – Sep 2010). Co-supervised with Qiyin Fang. Ph.D. student, University of Ottawa.
132. Mahdy Nabaee (M.A.Sc.) **Vision-based Resource Constrained Event Detection for Medical Smart Homes** (September 2008 – August 2010). Co-supervised with Prof. S. Shirani. Ph.D. student, McGill University
133. Hossein Kassiri Bidhendi (M.A.Sc.) **Design of Ultra-Wideband RFICs for Medical Imaging Applications** (Sep. 2008 – September 2010). Ph.D. student, University of Toronto.
134. Mohammad Jahed Tajik (M.A.Sc.), **Analytical and Numerical Modeling of Organic Photovoltaic Devices** (Sep. 2008 – September 2010). Co-supervised with Prof. W.R. Datars. Research Associate, McMaster University.
135. Wei Zhou, (M.A.Sc.) **A Wireless Sensor System and Application of Traditional Chinese Pulse Diagnosis for Individual Healthcare Monitoring** (August 2007 – November 2009). Entrepreneur (started company), China.
136. E. Malick Gaye, (M.A.Sc.) **Wireless Sensor Systems for In-Vivo Applications** (September 2008 - April 2009) Engineer, Crone Geophysics.
137. Jason Barnet, (M.A.Sc.) **RF Noise Modeling and Design of Low-Noise RFICs** (September 2008 – December 2008). Co-supervised with Prof. C.H. Chen. Went to Ontario's Teacher's College
138. Gefei Zhou, (M.A.Sc.) **Narrow-Band Receiver and Ultra-Wideband Low Noise Amplifier** (September 2007 – September 2009). Research Assistant, McMaster University. Entrepreneur (started company), China.
139. Kai Wang, **Portable Magnetic Tracking Systems Exploiting Neural Networks and Space Mapping Modeling**, (September 2006 – September 2008). Co-supervised with Prof. M. Bakr, Engineer, Ottawa.
140. Moussa Kfouri (M.A.Sc.) **Toward a Miniaturized Wireless Fluorescence-Based Diagnostic Imaging System** (January 2006 - April 2008). Co-supervised with Prof. Q. Fang. Engineer, Geotab Inc., Oakville.

141. Kurt Huang (M.A.Sc.) **Wireless Sensor Systems for In-Vivo Applications** (September 2005-April 2008). Sales Manager/FAE, Advanpower International Ltd., China
142. Darek Palubiak (M.A.Sc.) **Design and Implementation of Broadband Circuits and Systems for Fiber Optic Communication Applications** (September 2005-December 2007). Co-supervised with Prof. S. Kumar. IC Engineer, PeakRF Systems, California, USA
143. Waleed Shinwari (M.A.Sc.), **Modeling and Simulation of Electrochemical DNA Sensors in CMOS Technology** (September 2005 – April 2007). Ph.D. student, McMaster University.
144. Wei Liu (M.A.Sc.) **Electronic Systems for Biomedical Applications** (September 2004 -). Co-supervised with Prof. S. Hranilovic. Systems Engineer, Nortel, Ottawa.
145. Hamed Mazhab Jafari (M.A.Sc.) **Ultra-wideband Antennas for Medical Imaging and Communication Applications** (September 2004 – August 2006). Co-supervised with Prof. S. Hranilovic. PhD Student, University of Toronto.
146. Samar Mikhail Abdelsayed (M.A.Sc.) **Power Amplifiers and Antennas for Implantable Biomedical Transceivers** (January 2004 – April 2006). Co-supervised with Prof. N. Nikolova. Application Development Consultant, RIM, Waterloo, Canada.
147. Munir Eldesouki (M.A.Sc.) **Design of Integrated Power Amplifier Circuits for Biotelemetry Applications** (January 2004 – January 2006). Co-supervised with Prof. Y. Haddara. Ph.D. student, McMaster University.
148. Ehab Y El-Badry, (M.A.Sc.) **Ultra-Wideband, Low-Power, Silicon-Germanium Distributed Amplifiers** (September 2003 – December 2005). Co-supervised with Prof. Y. Haddara. Engineer in Egypt
149. Nabeel Jafferali (M.A.Sc.) **Low-Voltage, Low-Power CMOS Downconversion Mixers** (September 2002 –September 2005). President, X2 Networks Inc., Toronto, Canada.
150. Juan Carlos Ranuarez (M.A.Sc.) **Broadband Microwave Amplifiers in Deep-Submicron CMOS Technology** (January 2004 – August 2005). Co-supervised with Prof. J. Chen. Systems Engineer, Telus, Toronto.
151. Ahmed Fakr (M.A.Sc.) **Design of Low-Voltage, Micropower RF Voltage-Controlled Oscillators** (September 2002 – December 2003). Co-supervised with Prof. H. DeBruin. Ph.D. student, McMaster University.
152. Wai-Leung Ngan, (M.A.Sc.) **Effects of Channel Length Fluctuations on the Performance of RF Oscillators** (September 2002 – November 2004). Production Engineer, PMC Sierra, Vancouver, Canada.
153. Naser Faramarzpour (M.A.Sc.) **DNA Microarray Images: Processing, Modelling, Compression** (September 2002 – April 2004). Co-supervised with Prof. S. Shirani. Design Specialist, DALSA, Waterloo, Canada.
154. Kalyan Bhattacharya (M.A.Sc.) **1.2V CMOS Travelling wave Amplifiers for Applications at 10GHz and Beyond Using Coplanar Waveguides as On-Chip Inductors** (Jan. 2002 – Dec. 2003). Research Engineer, IIT Bombay, India.
155. Jessica Lam (M.A.Sc.) **1.2V CMOS Down Conversion Mixer and VCO Design for RF Front-end Transceiver Applications** (September 2000 – March 2003). Engineer, Singapore.
156. Rizwan Murji (M.A.Sc.) **1.8V Monolithic CMOS Nested Loop Frequency Synthesizer for GSM Receivers at 1.8-GHz** (September 1999 –December 2002). Senior Electronics Engineer, Motorola Inc., Schaumberg, Illinois, USA.
157. Zhenwen Wang (M.A.Sc.) **Modeling of Passive Microwave Circuit Elements** (January 00 -September 02). Engineer, Faculty of Science, University of Waterloo, Waterloo, Ontario.
158. A K M Mollah (M.Eng.) **Lateral BJT Circuits** (Jan. 2002 -Aug. 2002) Transferred to UBC.
159. Tarek Sadek (M.Eng.) **Characterization and Modeling of Varactors in Silicon CMOS Technology** (September 2001 -January 2002), transferred to another group.
160. Rami Al-Idrissi (M.Eng.) **Modeling of Passive Microwave Circuit Elements** (September 1999 -April 2001), Engineer, Saudi Arabia.
161. Vikram Labhe (M.Eng.) **Dc Characteristics and Circuit Applications of Gate-Controlled Lateral pnp (GC-LPNP) Devices Designed in CMOS Technology** (Jan '98 -Aug. 2001), Head, PMC Sierra - India.
162. Wing Suen Kwan (M.A.Sc.) **Simulation, Modeling and Analog RF Properties of Hot-Carrier Damaged LDD MOSFETs** (Summer 1995 - Summer 1998), Design Automation Engineer, Conexant Inc., Newport Beach, CA.
163. M. Oulmane (Engineer's Diploma Thesis) **Noise Studies in MOSFETs** (Spring 1997 and 1998), Graduate student, McGill University.
164. C.H. Chen (M.A.Sc.) **High Frequency Noise Modelling of MOSFETs** (September 1994-December 1997).
165. Tim Hardy (M.A.Sc.) **Charge-Coupled Device Systems** (September 1994-August 1997), Engineer, NRC, Victoria.
166. Joseph Liang (M.A.Sc.) **Parameter Extraction of LDD Short Channel and Narrow Width MOSFETs Under Varying Operating Conditions** (Jan.1992- Dec. 1993) - Microelectronic Engineer, Siemens, Germany/Singapore.
167. Xiaotang Lu (M.A.Sc.) **Electrical Characteristics of Polymer-Based Field Effect Transistors** (Jan. 1992- Sept. 1993) - RF Engineer, Hewlett-Packard, California (Joint supervision with Prof. S. Holdcroft, Chemistry, SFU).
168. Yu Zhu (M.A.Sc.) **Low Frequency Noise in MOSFETs: Theory and Experiments** (January 1991 - July 1992) - Manager, Microsoft Corporation, Seattle, Washington.

169. Anthony Ng (M.A.Sc.) **Low Frequency Noise Modeling of Bipolar Junction Transistors for VLSI Circuits** (September 1991 - April 1992) – Electronic Systems Manager, Texas Instruments, Tustin, California.
170. Z. Yan (M.A.Sc.) **New BiCMOS Driver Circuit with Improved Analytical Delay Model** (January 1991 - December 1991), Design Engineer, Conexant Inc., Newport Beach, California.
171. Bo Wang (M.A.Sc.) **Optical Interface Adapters for DRONET and DQDB** (May 1990 - December 1991) - Electronic Engineer, Prism Ltd., Vancouver, B.C. Joint supervision with Prof. S. Hardy, Eng. Science.
172. X.M. Li (M.A.Sc.) **Hot Carrier Degradation Studies at the Si-SiO_2 Interface in Short Channel MOSFETs** (September 1989-May 1991) - Process Engineer, Rockwell International, Newport Beach, California.
173. Jing Wang (M.A.Sc.) **Characterization and Analysis of Small Geometry PMOS Devices at Cryogenic Temperatures** (graduated in Fall 1989) - Electronic Engineer, Spillsbury Communications, Vancouver, B.C.
174. Bruno Jaggi (M.A.Sc.) **Design of a Quantitative Microscope for Image Cytometry Using a Solid State Detector in The Primary Image Plane** (graduated in Summer 1989) - Head Engineer, Cancer Imaging, B.C. Cancer Control Agency, Vancouver, B.C.

B.A.Sc. – B. Eng. Students

175. Peiqi Hu, **Developing a Smart Health Monitoring Systems** (January– April 2019).
176. Ryan Scott, **Developing a Smart Health Monitoring Systems** (January– April 2019).
177. Junaid Siddiqui, **Developing a Smart Mannequin for ECG Training** (September 2017 - April 2018).
178. Ishaq Aden-Ali, **Near-Infrared Imaging System** (May - August 2017).
179. Hossein Rejali, **ECG Motion Artifact Analyses Using Inertial Sensors** (January – April 2017).
180. Alejandro Ramos, **ECG Motion Artifact Analyses Using Inertial Sensors** (January – April 2017).
181. Omar Nassif, **ECG Motion Artifact Analyses Using Inertial Sensors** (January – April 2017).
182. Chris Williams, **Developing a Smart Mannequin for ECG Training** (January – April 2017).
183. Siyang Li, **Smart Knee Monitoring System**, (Jan 2016 - April 2016).
184. Andrew Wynn-Williams, **Smart Knee Monitoring System**, (Jan 2016 - April 2016).
185. Daniel Allen, **Sensing Systems for Ubiquitous Healthcare** (May –August 2015).
186. Joshua Friedland, **Knee Brace Monitoring System**, (Jan 2014 - April 2015).
187. Shayan Mukhtar, **Knee Brace Monitoring System**, (Jan 2014 - April 2015).
188. Heba Osman, **Walking Age Analyzer System**, (Jan 2014 - April 2015).
189. John Louka, **Knee Brace Monitoring System**, (Sep 2012 - April 2015).
190. Chris Williams, **Testing and Analysis of Non-Contact Capacitive ECG Electrodes** (May - August 2014).
191. MM Aslam, **Smart Knee Monitoring System** (September 2013 – April 2014).
192. Naufil Khan, **Smart Knee Monitoring System** (September – December 2013).
193. Jason Paquette, **Dissolved Oxygen Potentiostat System** (May – August 2011).
194. Ogonna Igwebe, **Dissolved Oxygen Potentiostat System** (May – August 2011).
195. Eric Monteiro, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
196. Steve Petryschuk, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
197. Josh Wellstood, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
198. Mehran Reza, **Electrotaxis – Experimental Studies** (Sep 2010- Apr 2011) co-supervised with Prof. R Selvaganapathy.
199. Adeel Alam, **Integrated Temperature, Light and Humidity Monitoring System for the Hospital Environment** (Sep 2009 - April 2010).
200. Mohammad N. Arabi, **Towards a Non-Intrusive Pulse Oximeter System with Long-term Mobile Monitoring** (Sep 2009 - April 2010).
201. Hanseul Choi, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 09 - Apr 10).
202. Winston De Armas, **Design of a Wireless, Non-invasive Long-term ECG Monitoring System for At-risk Patients** (Sep 2009 - April 2010).
203. Sandra Escandor, **Applying Multivariate Normal Analysis in a Personal Vital Stats Monitor** (Sep 09 - April 2010).
204. Christoph Larndorfer, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 09 - Apr 10).
205. Emily Lukes, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 2009 - April 2010).
206. Dhvani Parekh, **Designing Heart rate, Blood Pressure and Body temperature Sensors for Mobile-On-call System** (Sep 2009 - April 2010).

207. Reinhard Peer, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 09 - Apr 10).
208. Christina Tan, **Integrated Temperature, Light and Humidity Monitoring System for the Hospital Environment** (Sep 2009 - April 2010).
209. Kirsten Zernask-Cebek, **Mobile On-call: Design of a Non-invasive, Non-intrusive Personal Vital Signs Monitor**, (Sep 2009 - April 2010).
210. Adeel Alam, **Statistical Processing of Biomedical Data** (May – August 2009), co-supervised with Prof. Qiyin Fang.
211. Timea Maxim, **Biophotonics** (May – August 2009), co-supervised with Prof. Qiyin Fang.
212. David Zhitomirsky, **Reference Electrodes for Biosensors** (Summer 2008), co-supervised with Prof. Ravi Selvaganapathy.
213. Paul Quevado, **Biosensing Circuits** (Summer 2007).
214. Muayad Tarabain, **Ultra-wideband Circuits** (Summer 2007).
215. Mojtaba Hodjat-Shamami, **RF Integrated Circuits** (Summer 2007).
216. Siyan Tan, **Ultra-wideband Circuits** (Summer 2006).
217. James Mondry, **Fluorescence Imaging System** (Spring 2006).
218. Hamed Mazhab-Jaffari, **Wireless Imaging Circuits** (Summer 2004).
219. Omar Laldin, **Wireless Imaging Circuits** (Summer 2004).
220. Anirood Mehta, **Hearing-Aid Integrated Circuit** (Spring 2004).
221. Alan Chik, **Hearing-Aid Integrated Circuit** (Spring 2004), Engineer, Hong Kong.
222. Lyn Khine, **Radio Frequency Integrated Circuits** (Summer 2002, Summer 2003), Engineer, Singapore.
223. Wai Ngan, **Radio Frequency Integrated Circuits** (Summer 2001, Summer 2002, Summer 2003), Engineer, PMC.
224. Suzanne Cheng, **Parameter Extraction of MOSFETs** (Summer 2002), Engineer, Boeing Corp., Seattle, Washington.
225. Tim Norman (B.A.Sc.) **Modeling of Gated Lateral Bipolar Transistors** (May 1999 - December 1999), Engineer, MPR, Vancouver.
226. Miguel Urteaga (B.A.Sc.) **Modeling of Passive Microwave Circuit Elements** (May 1998-May 1999). Graduate Student, University of California, Santa Barbara.
227. Geoff Duerden (B.A.Sc.) **The Development of hearing Aid Circuit Applications Using Gate Controlled lateral PNP Transistors** (January 1998 - August 1998), Graduate Student, McGill University.
228. Lalit Nathawad (B.A.Sc.) **Direct Extraction of AC Equivalent Circuit Parameters of Polysilicon Emitter Bipolar Transistors** (1996-1997), Ph.D. student, Stanford University.
229. Lonnell Peters (B.A.Sc.) **Circuit Applications Using the Gate-Controlled Lateral PNP Transistor** (1996-1997), Ph.D. student, University of Michigan, Ann Arbor.
230. V. Van (B.A.Sc.) **SPICE Modelling of Lateral PNP Bipolar Junction Transistors,** thesis completed in Summer 1995 - Professor, University of Alberta.
231. D. Liew (B.A.Sc.) **Implementation of a Two-Dimensional Lateral PNP Transistor Model in TSUPREM-4 and MEDICI**, Engineer, NRC, Vancouver.
232. W. Dall (B.A.Sc.) **Developing a High Speed Linear CCD Imaging System,** thesis completed in Summer 1995 - Electronic Engineer, CREO Products, Vancouver.
233. Wing Suen Kwan (B.A.Sc.) **Computer Simulation and Modelling of a Hot-Carrier Damaged 1.2 μm LDD MOSFET** (graduated in Spring 1995) Design Automation Engineer, Conexant Inc., Newport Beach, California.
234. Nick Toth (B.A.Sc.) **Design of a Wide-Band IF Amplifier** (graduated in Summer 1994) - Design Engineer, Photon Systems Inc., Vancouver.
235. Anthony Ng (B.A.Sc.) **Methods for Measuring Electromigration Performance in VLSI Devices** (graduated in Spring 1991), Electron Systems Manager, Texas Instruments, Tustin, California.
236. Colin Quon (B.A.Sc.) **Hot-Carrier-Induced Effects in Short Channel NMOS Devices** (graduated in Spring 1991), Electronic Engineer, Prism Ltd., Vancouver, B.C.
237. Tim Sterzyck (B.A.Sc.) **Extracting CV and AC SPICE Parameters for On-Wafer Bipolar Transistors** (graduated in Spring 1990) - Packaging Engineer, Northern Telecom, Ottawa.
238. Cameron Alakija (B.A.Sc.) **Characterization and Analysis of Small Geometry N-Channel MOSFETs at Cryogenic Temperatures** (graduated in Fall 1989) - Electronic Engineer, MPR Teletech, Burnaby, B.C.
239. Errol Samuelson (B.A.Sc.) **A Solid State Imaging System for Quantitative Microscopy** (graduated in Fall 1989) - Electronic Engineer, MPR Teletech, Burnaby, B.C.
240. Lily Haydar (B.A.Sc.) **An Imaging System for Automatic Analysis of DNA Electrophoretic Gels** (graduated in Spring 1989) - Project Manager, MDSI Inc, Richmond, B.C.

241. Gourmail Kandola (B.A.Sc.) **Development of a Prototype System for Metaphase Finding** (graduated in Spring 1989) - Electronic Engineer, VTECH, Richmond, B.C.

RESEARCH GRANTS

- **Total Research Grants starting from 2001 to present** **$98,866,420**
- **Sole Investigator or Principal Investigator (PI) from 2001 to present** **$22,916,839**
- **Co-investigator from 2001 to present** **$75,949,581**

a) Support currently held

Name of Investigator(s)	Title of Proposal, Funding Source and Program	Total Amount	Years
M.J. Deen	*High Performance Optical Detectors and Imagers for Emerging Applications*, NSERC Discovery Grant.	$380,000	2018-2023
M. Leclerc (PI), A. Adronov, H. Aziz, C. Bois, T. Carmichael, E. Cretu, J. Deen, I. Hill, R. Izquierdo, L. Kaake. B. Lessard, Y. Li, J-F Morin, R. Martel,S. Rondeau-Gagné, C. Santato, T. Szkopek, K. Walus, G. Welch.	NSERC Green Electronics Network (GreEN), NSERC Strategic Partnership Grants for Network	$5,500,000	2018-2023
M.J. Deen	*Advaced Optical Detectors and Imaging Systems*, Canada Research Chair (CRC), Govt. of Canada.	$1,400,000	2015-2022
M.J. Deen	*Sensors for Water Quality Monitoring*, CFREF Grant	$90,000	2018-2021
M.J. Deen	*High Performance Optical Detectors and Imagers for Emerging Applications*, DGDND – DND/NSERC Discovery Grant Supplement	$120,000	2018-2020
Deen (PI), Aitchison, Collins, Fang, Hranilovic, Karanassios, Karmali, LaPierre, Liu, Zhu	*Micro- and Nano-systems Laboratory*, CFI Institutional Operating Funds	$1,277,017	2009-2022
George Dixon (PI, Waterloo), Jim Barker, Dave Rudolph, Mark Servos (Waterloo), Deb McLatchy (WLU), Ed McBean (Guelph), Jamal Deen (McMaster), (Susan Andrews (Toronto), David Tweddell (Western Ontario)	"*Southern Ontario Water Consortium*", Federal Economic Development (FedDev) Agency for Southern Ontario.	$19,580,000	2011-2023
M.J. Deen	"*Radio Frequency Integrated Circuits – RFICs*", IBM Faculty Grant	$16,000	2006-2022

b) Support held in the recent past

M.J.Deen	*Advanced Optical Detectors and Imagers*, NSERC Discovery Grant.	$355,000	2013-2018
M.J. Deen (PI), K. Hassanein and T.K. Mondal	"*Assessing and Improving Mobility in the Elderly with a Smart Knee Monitoring System*", McMaster Institute for Research on Aging/Labarge Centre for Mobility in Aging Catalyst Grant.	$40,000	2017-2018
N Banthia (Scientific Director & PI - UBC), SK Mitra (Assoc Dir – UA), L Kotra (Assoc Dir - UT), Bindiganavile (UA), Brett (UA), Cheng (UA), Cowen (UT), De Silva (UBC), Deen (McMaster), Farrell (UT), Goh (UT), Goss (UA), Hooton (UT), Kain (UT),	"*India/Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability* (*IC-IMPACTS*)", Networks of Centres of Excellence (NCE) - Canada-India Research Centre of Excellence (CIRCE)	$13,800,000	2013-2018

Kronstad (UBC), Mohseni (UBC), Panesar (UT), Richardson (UT), Sain (UT), Sargent (UT), Sheikh (UT), Sinton (UT), Thundat (UA), Tyrrell (UA), Vecchio (UT), Ventura (UBC), Wijewickreme (UBC), Zu (UT)			
M Mohseni (PI), H. Langford, A Mcbean, MJ Deen, JL Isaac-Renton, A. Mazumder, GA Gagnon, CA Haynes, KJ Bakker, BB Barbeau, MJ Rodriguez, G Achari, MHI Dore, RS Saddiq, NA Prystajecky, P Wilkinson, P. Selvaganapathy, H Brumer and L Harris	"*RES'EAU-WATERNET: An NSERC Strategic Network on Small, Rural and First Nations Water Systems*", NSERC Strategic Networks Grants Program.	$4,790,750	2013-2018
Jim Barker (PI, Waterloo), Robert Andrews (Toronto), M. Jamal Deen (McMaster), Shaun Frape (Waterloo), Peter Huck (Waterloo), Deborah MacLatchy (WLU), Chris Metcalfe (Trent), David Rudolph (Waterloo), Mark Servos (Waterloo), Hongde Zhou (Guelph)	"*Water Quality Research Platform in Urban and Urbanizing Watersheds*", Ontario Research Fund.	$8,853,561	2011-2018
Fang (PI), Deen, Du, Armstrong, Tse	*Colon mapping and colonoscopic localization using near infrared imaging of vascular patterns*, Canadian Cancer Society, Innovation Grant	$194,000	2013-2016
M.J. Deen	*Advanced, High-performance Photodetectors and Imaging Systems*, Canada Research Chair (CRC), Govt. of Canada.	$1,400,000	2008-2015
M.J. Deen	*Implementation of Physical Models and Algorithms for Organic Photovoltaic Device Simulator*, NSERC Engage Grant with Siborg, Waterloo.	$25,000	2014
M.J. Deen	*Long-term ECG monitoring system*, NSERC Engage Grant with Celestica, Toronto.	$25,000	2013
M.J. Deen	*High Performance Optical Detectors and Imaging Systems for Emerging Applications*, NSERC Discovery Grant.	$180,000	2010-2013
Selvaganapathy (PI), Deen and Schellhorn	*Portable Real-time Water Monitoring System*, NSERC Strategic Grant	$158,500 $162,500 $163,500	2011-2012 2010-2011 2009-2010
Deen (PI), Grundfest, Fang, Armstrong, Aitchison, Chodaparavu, Karanassios, Liu, Tse, Williams, Tromberg, Brown, Carmen, Culjat, Dutson, Hein, Holmes, Chien, Singh	*Bioimaging Technologies for Enhanced Healthcare*, Canada-California Strategic Innovation Partnership (CCSIP) Grant	$100,000 (US)	2009-2012
Deen (PI), Aitchison, Collins, Fang, Hranilovic, Karanassios, Karmali, LaPierre, Liu, Zhu	*Micro- and Nano-systems Laboratory*, CFI, OMRI, Industries and McMaster Univ., Infrastructure Grant	$13,119,817	2007-2012
Chen (PI), Deen, Nikolova, Li and Bakr	*Infrastructure For Noise Characterization of Sub-100nm MOSFETs at Microwave Frequencies*, NSERC Research Tools and Instruments Grant.	$131,051	2010
Huang (PI), Li, Kumar, Deen and Chen	*Enabling Optoelectronic Technologies for Optical Access Applications*, NSERC Strategic Projects Grant	$284,000 $256,000 $256,000	2009-2010 2008-2009 2007-2008

M.J. Deen	*Advanced Photodetector Systems for Emerging Applications*, NSERC Discovery Grant.	$355,000	2005-2010
Deen (PI) and Selvaganapathy	*BioFET Sensor System*, NRC-GHI Research Contract.	$32,840	2009-2010
Iniguez (PI - Spain), Deen (Canada) and Estrada (Mexico)	*Techniques of Characterization and Modeling of Organic and Polymeric Devices for Plastic Microcircuits*, International Complementary Action Grant Number PCI2005-A7-0492, Spanish Ministry of Science	20,000 Euros	2006-2009
Deen (PI) and Selvaganapathy	*BioFET Sensor System*, NRC-GHI Research Contract.	$50,000	2008-2009
M.J. Deen	*Intelligent Multiple Antenna Structures for Adaptive Wireless Systems*, OMRI, ORF-RE Research Grant	$112,000	2005-2009
Kleiman (PI), Thompson, Jessop, Haugen, Cassidy, Deen, Mascher, Preston, LaPierre, Xu, Knights	*Centre for Electrophotonic Materials and Devices*, NSERC Major Facilities Access Infrastructure Grant.	$390,000	2005-2008
Deen, M.J.	*BioFET Sensor System*, NRC-GHI Research Contract.	$72,300	2005-2008
Nikolova (PI), Chen and Deen	*Multi-Port 20-GHz Vector Network Analyzer*, NSERC Research Tools and Instruments Grant.	$126,544	2007
Chen (PI), Deen, Li, Nikolova and Bakr	*Infrastructure For High-Frequency Noise Measurements of Sub-100nm MOSFETs*, NSERC Research Tools and Instruments Grant.	$147,051	2007
LaPierre (PI), Thompson, Deen, Mascher, Kruse, Saravanamuttu and Knights	*Photoluminescence Equipment for Nanophotonic Systems*, NSERC Research Tools and Instruments Grant.	$150,000	2007
Deen (PI) and Chen	*High Frequency Noise Characterization MOSFETs*, Sony Corporation Research Contract.	$59,000	2005-2007
M.J. Deen	*Optoelectronics Receivers*, Ontario Research and Development Challenge Fund (ORDCF).	$290,000	2003-2007
M.J. Deen	*Optical Detectors and Receivers*, Canada Research Chair (CRC), Govt. of Canada.	$1,400,000	2001-2008
Knights (PI), Adronov, Deen, Kleiman, LaPierre, Thompson	*Low Temperature Hall Effect Measurement System*, NSERC Research Tools and Instruments Grant.	$139,309	2006
Deen (PI) and Chen	*RF Noise Modeling and Design of Benchmark RFIC* (*LNA*), RFMD Research Contract.	$60,000	2005-2006
Deen (PI), Fang, Aitchison and Karanassios	*Towards a Miniaturized Fluorescence Based Diagnostic Imaging System*, OCE/CMM Grant.	$200,000	2005-2006
Haddara (PI), Deen	*Improving Mobility and Reliability in Polymer FETs Through Control of Interface Properties and Morphology*, Materials and Manufacturing Ontario - Emerging Materials Knowledge	$90,000	2004-2006
M.J. Deen	*Radio Frequency Integrated Circuits for Transceiver Applications*, National Center of Excellence Micronet, NSERC eMPOWER, Gennum Research Grants.	$99,000	2004-2005
Zhu (PI), Botton, Deen and Xu	*Studies of Materials Compatibility and Interfacial Interactions for Fabricating Low-Cost Plastic Thin Film Transistors*, NSERC CRD.	$180,000	2003-2006
M.J. Deen	*Radio Frequency Integrated Circuits for Transceiver Applications*, Micronet - National Center of Excellence, NSERC eMPOWER, Gennum Research Grants.	$118,000	2003-2004
Thompson (PI), Cassidy, Deen, Haugen, Jessop, Maciejko, Mascher, Preston, Sergeant, Simmons, Tennyson, Weatherly	*Centre for Electrophotonic Materials and Devices*, NSERC Major Facilities Access Infrastructure Grant	$276,000	2002-2005
M.J. Deen	*Radio Frequency Integrated Circuits for Transceiver Applications*, Micronet - National Center of Excellence,	$188,000	2002-2003

	NSERC eMPOWER, Gennum, Philsar, RIM and Zarlink Research Grants.		
Waterloo - Nathan (PI), Hayward, Karanassios, Mansour, Penlidis, Sazonov, Sivoththaman, Strong, **McMaster** - Deen, **Toronto** - Rowlands	*Giga-to-Nano Electronics Fabrication Facility for Wireless, Bio, Environment, and Medical Applications*, Canadian Foundation for Innovation (CFI), Ontario Innovation Trust (OIT) and Industry, Infrastructure Grant	$14,796,358	2002
M.J. Deen	*High Performance Photodetectors and Photoreceivers for Fiber Communications*, NSERC Research Grant.	$210,000	2001-2005
Wong (PI), Bandler, Deen, Luo, Gershman, Huang and Szymanski	*Communications Technology Research Center*, Canadian Foundation for Innovation (CFI), Ontario Innovation Trust (OIT) and Industry, Infrastructure Grant	$5,459,957	2001-2004
M.J. Deen	*Optoelectronics Research Laboratory*, CFI, OIT, Industries and McMaster Univ., Infrastructure Grant	$1,117,865	2001-2004
M.J. Deen	*High Frequency Noise Modelling and the Design of High Frequency Circuits*, National Center of Excellence (NCE) Micronet and Mitel Research Grant.	$34,500	2001-2002
M.J. Deen	*High Frequency Noise Modeling and the Design of High Frequency Circuits*, Gennum Research Grant.	$10,000	2000-2001
M.J. Deen	*Microelectronic Low Frequency Noise and Reliability Characterization System*, NSERC Equipment Grant.	$104,174	2000-2001
M.J. Deen	*Simulator for Advanced Optical Detectors Used in Telecommunications*, NSERC Strategic Grant.	$160,500	1999-2002
Holdcroft (PI) and Deen	*Towards Plastic Field-Effect Transistors*, NSERC Strategic Grant.	$309,000	1999-2002
M.J. Deen	*Noise in Power Semiconductor Diodes*, D&V Electronics Research Grant.	$27,000	1999-2000
M.J. Deen	*Modeling and Applications of High Performance Semiconductor Devices and ICs*, NSERC Research Grant.	$93,555	1998-2001
M.J. Deen	*Characterization & Modeling of Passive & Active Components for Microwave Applications*, NSERC CRD Grant.	$150,000	1998-2001
M.J. Deen	*Characterization and Modeling of Passive and Active Components for Microwave Applications*, Nanowave Technology Grant to go with NSERC CRD grant.	$75,000	1998-2001
M.J. Deen	*High Frequency Modeling of MOS Transistors*, Rockwell Semiconductor Corporation Grant.	$150,000	1997-2002
M.J. Deen	*Characterization & Modeling of SAGCM APDs*, NSERC CRD Grant.	$33,000 $57,000	1996-1997 1997-1999
M.J. Deen	*Characterization and Modeling of SAGCM APDs*, BNR Grant to go with NSERC CRD grant.	$45,000	1996-1999
M.J. Deen	*Low Frequency Noise in BJTs*, National Semiconductor Corporation Grant.	$14,000	1997
M.J. Deen, (PI), Bolognesi, Stapleton and Watkins.	*Materials and Device Reliability Analysis System*, NSERC Equipment Grant.	$73,736	1996-1997
M.J. Deen	*High Frequency Noise Modelling and the Design of High Frequency Circuits*, NCE Micronet Research Grant.	$196,000	1996-2001
M.J. Deen	*High Frequency Noise Modeling and the Design of High Frequency Circuits*, Mitel Research Grants.	$100,000	1996-2001
Hill, R. (PI) Deen, M.J.	*Chemical Vapor Deposition*, NSERC Strategic Grant.	$259,500	1995-1998
M.J. Deen	*Characterization, Modelling and Applications of Semiconductor Devices and Circuits*, Natural Science and Engineering Research Council (NSERC) Research Grant.	$96,000	1994-1997

OTHER INFORMATION

Memberships - Engineering, Science or Professional Organizations:

TWAS – The World Acedemy of Sciences (Fellow)
CAS – Chinese Academy of Sciences (Academician – Foreign Member)
EASA - European Academy of Sciences and Arts (Academician - Member).
NASI - The National Academy of Sciences India (Fellow - Foreign).
INAE - The Indian National Academy of Engineering (Fellow - Foreign).
CAE – The Canadian Academy of Engineering (Fellow).
RSC – The Royal Society of Canada (Fellow).
AAAS - The American Association for the Advancement of Science (Fellow).
ECS – The Electrochemical Society (Fellow).
EIC – The Engineering Institute of Canada (Fellow).
IEEE – The Institute of Electrical and Electronic Engineers (Fellow).
APS - The American Physical Society (Fellow).
WIF – The World Innovation Foundation (Honorary Member – Foundations highest honor).
Eta Kappa Nu, Electrical Engineering Honor Society (Member).