

M. Jamal Deen PhD DEng-hc FRSC FCAE FINAE FIEEE FAPS FECS FAAAS FEIC Professor and Senior Canada Research Chair in Information Technology

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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

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.	2008 - 2012	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

Doctor of Engineering - Honoris Causa	University of Waterloo (18 June 2011).
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 and Sciences of Canada (June 2006).
Fellow	APS, The American Physical Society (November 2008).
Fellow	AAAS, The American Association 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 (highest honor)	WIF, The World Innovation Foundation (May 2006).

AWARDS/HONORS (continued)

Royal Society of Canada Keynote Lecture	Canadian Congress of Applied Mechanics – CANCAM (6 June 2011).
Càtedres d'Excel·lència	Universitat Rovira I Virgili (URV), Tarragona, Spain (Jan-March 2011).
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	RSC, The Royal Society of Canada (July 2008).
Yu-gang Bao Chair Professorship	Zhejiang University, Zhejiang, China (August 2009 – for 3years).
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).
Best Poster Award - Autonomics	Third Int. Symposium on IT Convergence Engineering (14-15 July 2011).
Best Poster Award – Nanosensors	Third Int. Symposium on IT Convergence Engineering (14-15 July 2011).
Best Poster Award - Autonomics	Second 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 Miconet Workshop, Ottawa, Canada (May 2005).
Best Paper Award	The Institution of Engineering Technology (formerly IEE) (2004).
Best Student Paper Award	IEEE Canadian Conference 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).
Distinguished Lecturer	IEEE - Electron Device Society (2002 - present).
Thomas D. Callinan Award	Electrochemical Society – Dielectric Science & Technology Div. (2002).
Distinguished Researcher Award	Province of Ontario (July 2001).
Canada Research Chair	Government of Canada (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).
NSERC Senior Industrial Fellow	Device Technology (P813), Northern Telecom, Ottawa (1993).
Listed in	Canadian Who's Who (2007).
Listed in	Academic Keys Who's Who in Higher Education Engineering (2006).
Listed in	American Men & Women of Science (from 17th Edition, February 1989).
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 University of Guyana (1978).
Chancellor's Medal	Second best graduating student of the University of Guyana (1978).

Citations for Fellowships and Honorary Degree

► **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 optoelectronics. He is a fellow of the IEEE, the world's largest professional association for the advancement of technology, as well as the Royal Society of Canada and the American Physical Society.

► **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 and 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 for Some Other Awards

► **Càtedres d'Excel·lència (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."

► **Yu-gang Bao Chair Professorship, Zhejiang University, Zhejiang, China (August 2009 – for 3years).**

Citation In recognition of "outstanding record of research achievements and innovative technical contributions in the areas of micro-/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

- Associate Editor, *IEEE/OSA Journal of Display Technology* (January 2011 – 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).
- Member, Editorial Board, *Research Letters in Electronics* (January 2009 – present).
- Member, Editorial Board, *The Journal of Nanoelectronics and Optoelectronics* (March 2007 – present).
- Member, Editorial Board, *Open Journal of Applied Physics* (January 2007 – present).
- Member, Advisory Board of Editors, *Int'l Journal of High Speed Electronics and Systems* (June 2006 – present).
- Executive Editor, *Fluctuation and Noise Letters* (March 2001 – present).
- Member, Editorial Board, *Microelectronics Journal* (May 2006 – present).
- Guest Editor, Special Issue on "State-of-the-Art Sensors in Canada", *Sensors* (2011).
- 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)
- Member, Editorial Board, *The Journal of Nanoscience and Nanotechnology* (September 2004 – December 2005).
- Guest Editor, Special Issue of *IEEE Transactions on Electron Devices - Compact Interconnect Models for Gigascale Integration* (September 2009).
- Guest Editor, Special Issue of *IET Circuits, Devices and Systems* – Special Issue of **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 - Advanced Compact Models and 45-nm Modeling Challenges* (September 2006).
- Guest Editor, Special Issue of *IEE Proceedings - Circuits, Devices and Systems* – Special Issue of **IEEE/SPIE International Conference on Computers and Devices for Communications (CODEC) 2004** (October 2005).
- Guest Editor, *Interface, an Electrochemical Society Publication* (Summer 2005).
- Guest Editor, Special Issue of *IEE Proc. - Circuits, Devices & Systems* on Selected Topics on Noise in Devices & Circuits (April 2004).

- Guest Editor, *Fluctuation and Noise Letters* - Special issue 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

Microelectronics/Nanoelectronics, Optoelectronics – Bioimagers; Biosensors; Device Physics, Modeling and Characterization; Integrated Circuits; Plastic Microelectronics. Most applications are in health and environmental sciences.

Published SCI Papers

Authored/Edited Books and Conference Proceedings

1. 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.

2. M. Jamal Deen and Tor 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.

3. Edmundo A. Gutierrez-D., M. Jamal Deen and Cor 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.

4. **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).
5. **Organic Semiconductor Materials, Devices, and Processing 3**, Ed., M.J. Deen, ECS Transactions, Vol. 35, Issue 19, 219th ECS Meeting, Montreal, QC, Canada (16 May 2011).
6. **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).
7. **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).
8. **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).
9. **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).
10. **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).
11. **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).
12. **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).
13. **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).
14. **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).
15. **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).
16. **Integrated Optoelectronics (First International Symposium)**, Eds., M.J. Deen, D. Misra and J. Ruzyllo, Electrochemical Society Proceedings Series Volume 2002-4, Pennington, New Jersey, 436 pages (2002).
17. **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, Pennington, New Jersey, Proceedings Volume PV 2001-7, 286 pages (2001).
18. **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, Pennington, NJ, Proc. Vol. PV-99- 284 pages (1999).
19. **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, Pennington, New Jersey, Proceedings Volume PV-97-1, 402 pages (1997).
20. **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, Pennington, New Jersey, Proc. Vol. PV-97-2, 322 pages (1997).
21. **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, Pennington, New Jersey, Proc. Volume PV-97-10, 588 pages, (1997).

Book Chapters

1. **Invited Contribution**, D. Landheer, W. R. McKinnon, 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).
2. **Invited Contribution**, M. Jamal Deen and Fabien 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).
 3. **Invited Contribution**, Zhenwen Wang, M. Jamal Deen and Ali 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).
 4. **Invited Contribution**, Martin Sanden and M. Jamal 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).
 5. **Invited Contribution**, Chih-Hung Chen and M. Jamal 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)
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Plenary, Keynote or Invited Conference Papers

1. **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).
2. **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).
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5. **Plenary Paper**, M. J. Deen, “*CMOS Photodetectors and Imaging Systems for Biomedical Applications*,” **IEEE/SPIE 4th Int’l Conf. on Computers and Devices for Communications (CODEC)**, Calcutta, India, 5 pages (14-16 Dec.

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Plenary, Keynote or Invited Conference Abstracts

1. **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).
2. **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).
3. **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).
4. **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).
5. **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).
6. **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).
7. **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).
8. **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).
9. **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).
10. **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).
11. **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).
12. **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).
13. **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).
14. **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).
15. **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).
16. **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).
 17. **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).
 18. **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 (Friday 12 September 2008).
 19. **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 (Thursday 11 September 2008).
 20. **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).
 21. **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).
 22. **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).
 23. **Invited Paper**, Q. Fang, M. Kfoury, 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).
 24. **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).
 25. **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).
 26. **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).
 27. **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).
 28. **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).
 29. **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).
 30. **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).
 31. **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).
 32. **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).
 33. **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).
 34. **Invited Paper**, M.J. Deen, *Integrated Biosensors*, **The IEEE EDS International Electron Device and Materials Colloquium**, Orlando, Florida, 1 page (24-25 February 2006).
 35. **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).
 36. **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).
37. **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).
 38. **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).
 39. **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).
 40. **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).
 41. **Plenary Paper**, M.J. Deen, *Low Power RFICs for Transceiver Applications*, **IEEE Nanoelectronic and Photonic Systems Workshop**, Tarragona, Spain (21-22 June 2004).
 42. **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).
 43. **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).
 44. **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).
 45. **Keynote Paper**, M.J. Deen, *Electrical Characterization of Si-SiO₂ and Semiconducting Polymer- SiO₂ Interfaces*, **The 203rd Meeting of the Electrochemical Society**, Paris, France, p. 452 (27 April-2 May 2003).
 46. **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).
 47. **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).
 48. **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).
 49. **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).
 50. **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).
 51. **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).
 52. **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).
 53. **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).
 54. **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).
 55. **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).
 56. **Invited Paper**, M.J. Deen and A. Raychaudhuri, *Charge Pumping, Low Frequency Noise and Floating Gate*

Characterization Techniques of SiO₂ gate Insulators in MOSFETs, **The Electrochemical Society Spring Meeting**, San Francisco, California, Vol. 94-1, pp. 245-6 (22-27 May 1994).

57. **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).
58. **Invited Paper**, M.J. Deen, *Low Temperature Microelectronics: Opportunities and Challenges*, **Electrochemical Society**, Vol. 91-1, pp. 384-385, (May 1991) Extended Abstract.

Contributed Conference Abstracts

59. M. R. Dadkhah, M. Deen, and S. Shirani, *CMOS Sensors for Compressive Sensing*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington, 1 page (6-12 May 2012).
60. 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).
61. Salman Safari-Mohsenabad, P. R. Selvaganapathy, and M. J. Deen, *Microfluidic Reference Electrode for Lab-on-Chip Sensing Application*, **Ontario-on-a-Chip⁵ Symposium**, Toronto, Canada, 1 page (20-21 May 2010).
62. 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).
63. 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).
64. 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).
65. 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).
66. 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).
67. 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).
68. 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).
69. 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).
70. 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).
71. 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).
72. 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).
73. S. Safari-Mohsenabad, 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).
74. 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).

75. 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).
76. 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).
77. 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).
78. 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).
79. 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).
80. 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).
81. 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).
82. 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).
83. 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).
84. 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).
85. 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).
86. MM. El-Dedouki, 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).
87. 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).
88. R. Murji and M.J. Deen, *A Wideband Frequency Doubler Suitable for Low-Power Transceiver Applications*, **Micronet R&D Annual Workshop**, Ottawa, Ontario, pp. 11-12 (10-11 May 2005).
89. 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).
90. 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).
91. 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).
92. 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).
93. Y.G. Xiao, M.J. Deen, *Frequency Response of Resonant-Cavity Avalanche Photodiodes*, **Tenth Canadian Semiconductor Technology Conference**, Ottawa, Canada (13-17 August 2001).
94. 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).
95. M. J. Deen, O. Marinov, *Substrate Biasing and Low Frequency Noise in PMOS FETs from a 0.18 μ m CMOS Technology*, **Tenth Canadian Semiconductor Technology Conference**, Ottawa, Canada (13-17 August 2001).
96. 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).
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99. 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).
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 101. 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).
 102. 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).
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 104. 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).
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 106. 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).
 107. 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).
 108. 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).
 109. 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).
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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, **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 Prasant K. Basu, **Modeling of photonic components** (1999-).
- 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 Jimenez 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, **Compact modeling of inorganic and organic semiconductor devices** (2002 -).
- University of Toronto, Toronto – J. Stewart Aitchison, **Biosensors 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 – Tao Wang, **Nanoscale devices and their bio-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. Iłowski, 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

1. *Noise Issues in CMOS Devices and Circuits*, **First International Training Course in Compact Modeling**, Tarragona, Spain (30 June – 1 July 2010).
2. *RF Noise Modeling in MOSFETs Including Gate Current Effects*, **IEEE International Microwave Symposium Workshop – Noise Measurements and Modeling for CMOS**, San Francisco, CA (11 June 2006).
3. *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).
4. *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).
5. *High-Frequency Noise Modeling of MOSFETs for RF IC Applications* – M.J. Deen and C.H. Chen, **Fabless Semiconductor Association (FSA) Modeling Workshop**, San Jose, CA (15 September 2004).
6. *CMOS Device Noise Extraction and Performance* – M.J. Deen and C.H. Chen, **International Microwave Symposium (IMS)/Radio Frequency Integrated Circuits (RFIC) Sponsored Workshop**, Texas (June 2004)
7. *RF Noise Modeling of MOSFETs*, **Fabless Semiconductor Association (FSA) Modeling Workshop**, Santa Clara, CA (Thursday 12 October 2000).
8. *High Frequency Noise Measurements and Modeling of MOSFETs*, **Tutorial Short Course at the IEEE International Conference on Microelectronic Test Structures (ICMTS 99)** (Monday March 15 1999).
9. *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

1. *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).
2. *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).
3. *Engineered Biosensors for Environment and Health Applications*, Brookhouse Institute of Materials Research (**BIMR**), McMaster University (Monday 27 February 2012).
4. **Public Lecture** "Smart Homes" and Better Healthcare, The Hamilton Association for the Advancement of Literature, Science & Art (**HAALSA**), Hamilton (Saturday 4 February 2012).
5. *Biosensors, RFICs and ICT for U-Healthcare*, ITCE Division Workshop, POSTECH, Pohang, S. Korea (Tuesday 31 January 2012).
6. *Information and Communication Technologies in U-Healthcare Research*, Zhejiang University, Hangzhou, China (Monday 11 July 2011).
7. *Integrated Low-cost, High Sensitivity Biosensors for Water Quality Monitoring*, School of Microelectronics, Xidian University, Xi'an, China (Friday 27 May 2011).
8. *Information and Communication Technologies in U-Healthcare Research*, School of Microelectronics, Xidian University, Xi'an, China (Friday 27 May 2011).
9. *Integrated Low-cost, High Sensitivity Biosensors for Water Quality Monitoring*, Department of Energy Sciences, Sungkyunkwan University, Suwon, S. Korea (Wednesday 25 May 2011).
10. *The Role of Computer Scientists in U-Healthcare Research*, Computer Science Department, POSTECH, Pohang, S. Korea (Friday 15 April 2011).

11. *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).
12. *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).
13. *High-Sensitivity, Low-cost Biosensors*, Engineering Science and Mechanics Department, Pennsylvania State University, University Park, PA, USA (Wednesday 20 October 2010).
14. *Low-cost, High-Sensitivity “Water” Sensing Systems*, IBM T.J. Watson Research Center, Yorktown Heights, New York (Monday 27 September 2010).
15. *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).
16. *Convergence of U-Health and U-Environment: A Smart “Medical” Home*, Shanghai Jiao Tong University – Minhang Campus, Shanghai, China (Monday 9 August 2010).
17. *Low-cost, High Performance Bioimaging Systems*, Zhejiang University, Hangzhou, China (Thursday 5 August 2010).
18. *Convergence of U-Health and U-Environment: A Smart “Medical” Home*, Zhejiang University, Hangzhou, China (Wednesday 4 August 2010).
19. *Low-cost, High Performance Biomedical Photodetection Systems*, **IEEE Electron Device Society Distinguished Lecture**, Mexico City, Mexico (Thursday 22 April 2010).
20. *Convergence of U-Health and U-Environment: An Autonomic Smart Home*, **IEEE Electron Device Society Distinguished Lecture**, INAOE, Puebla, Mexico (Wednesday 21 April 2010).
21. *Low-cost, High-sensitivity Electrical and Optical Biosensing*, **IEEE Electron Device Society Distinguished Lecture**, INAOE, Puebla, Mexico (Tuesday 20 April 2010).
22. *Electrical and Optical Biosensing Systems for Disease Detection*, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China (Friday 16 April 2010).
23. *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).
24. *Compact Modeling of Organic Thin Film Transistors*, Electrical Engineering Department, Indian Institute of Technology, Delhi, India (Friday 18 December 2009).
25. *Electrical and Optical Biosensing Systems*, Applied Physics Department, Universidad de Granada, Granada, Spain (Friday 2 October 2009).
26. *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.
27. *Engineered Sensors for Novel Applications*, Institute of Microelectronics, Peking University, Beijing, China (Monday 10 August 2009).
28. *High-sensitivity, Low-cost Biosensors*, Institute of Electronics, Chinese Academy of Sciences, Beijing, China. (Monday 10 August 2009).
29. *Engineered Sensors for Novel Applications*, Shanghai Research Institute of Microelectronics (SHRIME), Peking University, Shanghai Branch, China (Friday 7 August 2009)
30. *Engineered Sensors for Novel Applications*, Institute of Microelectronics and Optoelectronics, Zhejiang University, Hangzhou, China (Thursday 6 August 2009).
31. *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).
32. *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).
33. *Low-Voltage, Low-Power RF Integrated Circuits*, Electrical and Computer Engineering Department, POSTECH, Pohang, South Korea (Friday 8 May 2009).
34. *High-sensitivity, Low-cost Biosensors*, Electrical and Computer Engineering Department, University of British Columbia, Vancouver, BC (Friday 16 January 2009).
35. *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 December 2008).
36. *High-sensitivity, Low-cost Integrated Biosensors*, Electronic and Computer Engineering Department, Hong Kong University of Science and Technology, Hong Kong (Tuesday 9 December 2008).
37. *Low-Voltage, Low-Power Integrated RF Transceiver Circuits*, Electrical and Computer Engineering Department, University of Waterloo, Waterloo, ON Canada (Friday 5 December 2008).
38. *Engineered Sensors and Vision for Biological Applications*, Biology Department, McMaster University, Hamilton ON,

- Canada (Thursday 4 December 2008).
39. *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).
 40. *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).
 41. *Electronic and Optoelectronic Systems for Emerging Applications in Health and Environmental Sciences*, Institute for Telecommunications, Technische Universität Darmstadt, Darmstadt, Germany (Friday 4 July 2008).
 42. *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).
 43. *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).
 44. *Electronic and Optoelectronic Systems for Emerging Applications*, Fachgebiet Hochfrequenztechnik - Photonics, Technische Universität Berlin, Berlin, Germany (Friday 16 May 2008).
 45. *Low-voltage, Low-power Integrated RF Transceiver Circuits*, Ferdinand-Braun-Institut für Höchstfrequenztechnik (FBH), Berlin, Germany (Friday 9 May 2008).
 46. *Low-voltage, Low-power Integrated RF Transceiver Circuits*, Fakultät für Informatik, Elektrotechnik und Informationstechnik, Universität Stuttgart, Stuttgart, Germany (Tuesday 22 April 2008).
 47. *Contacts Effects Polymeric Thin-film FETs*, **IEEE Electron Device Society Distinguished Lecture**, Electrical, Electronic, and Automatic Engineering Department, University of Rovira i Virgili, Tarragona, Spain (Tuesday 15 April 2008).
 48. *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).
 49. *Highly Sensitive, Low-cost Integrated Biosensors*, ECE Department, University of Calgary, Calgary, Alberta (Monday 27 August 2007).
 50. *Micro- and Nano-systems for Biomedical Applications*, The Department of Materials, Queen Mary, University of London, London (Friday 3 August 2007).
 51. *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).
 52. *Low-Power Integrated RF Transceiver Circuits for Short-Range Applications*, Microwave Engineering, Technische Universität Berlin, Berlin, Germany (Thursday 12 July 2007).
 53. *Highly Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, IEEE EDS Shanghai Chapter, Shanghai, China (Friday 8 June 2007).
 54. *Micro- and Nano-Systems Research and Integrated Biosensors*, Helix Micro Inc., Xiaoshan, Hangzhou, China (Thursday 7 June 2007).
 55. *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).
 56. *Micro- and Nano-Systems Research and Integrated Biosensors*, Physics Department, Nankai University, Tianjin, China (Monday 4 June 2007).
 57. *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).
 58. *RF Noise Modeling in MOSFETs Including Gate Current Effects*, RF CMOS Compact Modeling Group, IBM Essex Junction, Vermont, USA (Friday 16 February 2007).
 59. *Low-Frequency Noise in Silicon Devices*, RF CMOS Compact Modeling Group, IBM Essex Junction, Vermont, USA (Friday 16 February 2007).
 60. *Plastic Microelectronics with Organic or Polymeric Thin Film Transistors*, **IEEE Electron Device Society Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 4 September 2006).
 61. *Highly Integrated Biosensors*, **The IEEE Electron Devices Society Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 4 September 2006).
 62. *Plastic Microelectronics*, **IEEE Electron Device Society Distinguished Lecture**, Universitat Rovira i Virgili, Tarragona, Spain (Thursday 27 July 2006).
 63. *ICs for Low-Power Microsystems*, **The IEEE Electron Devices Society Distinguished Lecture**, University of the Balearic Islands, Mallorca, Spain (Monday 29 May 2006).

64. *Plastic Microelectronics*, The Max Planck Institute, Stuttgart, Germany (Wednesday 24 May 2006).
65. *Some Issues in MOSFET Noise Modeling and Characterization*, IEEE ICMTS 2006 Conference, RF Noise Panel Member and Presenter, Austin Texas (Tuesday 7 March 2006).
66. *Integrated Biosensors*, **The IEEE Electron Devices Society Distinguished Lecture**, University of Central Florida, Orlando, Florida (Saturday 25 February 2006).
67. *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).
68. *Reliability Effects of RF CMOS ICs*, Seoul National University, Korea (Wednesday 1 June, 2005).
69. *Low-voltage, Low-power CMOS Integrated Circuits for Radio Frequency Applications*, Seoul National University, Korea (Friday 27 May, 2005).
70. *Noise Issues in Deep Sub-micron Devices*, National Semiconductor Corp., Santa Clara, California (5 May 2005).
71. *Micro- and Nano-systems Components Research, A Brief Overview*, Agilent Technologies, Palo Alto, California (Monday 18 April 2005).
72. *High-Frequency Noise Modeling of MOSFETs for RF IC Applications*, RF Microdevices, Greensboro, North Carolina (Thursday 17 February 2005).
73. *Low-Frequency Noise in SiGeC-Based pMOSFETs*, RF Microdevices, Greensboro, North Carolina (17 Feb. 2005).
74. *HF Noise Modeling of MOSFETs for RF IC Applications*, RF Microdevices, San Jose, CA (10 Dec. 2004).
75. *Low-Power RFICs for Transceiver Applications*, **IEEE Electron Device Society Distinguished Lecture**, Eindhoven University of Technology, Eindhoven, Nederland (Friday 16 July 2004).
76. *Low-Power RFICs for Transceiver Applications*, **IEEE Electron Device Society Distinguished Lecture**, Universitat Rovira i Virgili, Tarragona, Spain (Monday 21 June 2004).
77. *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).
78. *Non-conventional FETS or Polymer FETS*, Istanbul Technical University, Turkey (Tuesday 22 July 2003).
79. *Low Frequency Noise in BJTs and FETs*, Istanbul Technical University, Turkey (Monday 21 July 2003).
80. *Electrical Characterization Techniques for Nanoscale Semiconductors and Semiconductor Dielectric Interfaces*, Istanbul Technical University, Turkey (Friday 18 July 2003).
81. *Some Electrical Characterization Techniques for Semiconductor-Silicon Dioxide Interface - A Review*, INAOE, Puebla, Mexico (Tuesday 24 July 2003).
82. *Low Power RFICs for Transceiver Applications*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Thursday 24 April 2003).
83. *Electrical Characteristics Polymer Field-Effect Transistors*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Wednesday 23 April 2003).
84. *Microelectronics and Opto-Electronics: A Review of Our Research Program*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Wednesday 23 April 2003).
85. *Une Réflexion de Quelques Sujets Intéressants Pour La Recherche du Futur*, CEM2, Université de Montpellier, France (Friday 20 December 2002).
86. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, Zarlink Corporation, Kanata Ontario (Thursday 5 December 2002).
87. *Radio Frequency Integrated – Mixers, Oscillators and Phase-Locked Loops*, Skyworks/Conexant Inc., Ottawa, Ontario (Thursday 5 December 2002).
88. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, RIM, Waterloo, Ontario (Wednesday 4 December 2002).
89. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, Gennum Corporation, Burlington, Ontario (Tuesday 3 December 2002).
90. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, Zarlink Corporation, Kanata Ontario (Thursday 19 September 2002).
91. *Radio Frequency Integrated Circuits for Transceiver Applications*, Skyworks/Conexant Inc., Ottawa, Ontario (Thursday 19 September 2002).
92. *Radio Frequency Integrated Circuits for Transceiver Applications*, Gennum Corporation, Burlington, Ontario (Tuesday 17 September 2002).
93. *Microelectronics and Some Interesting Applications*, CEM2, Université de Montpellier, France (Wed 26 June 2002).
94. *RF MOS Noise Modeling and Design of Low Noise RFICs*, Chalmers Univ., Gothenburg, Sweden, (21 March 2002).
95. *New Ways to Operate Transistors for Better Circuit Performance*, Gennum Corp., Burlington (Mon. 25 March 2002).

96. *Low-Noise, Low-Power Devices and Integrated Circuits*, RIM Corp., Waterloo Ontario (Wed. 13 March, 2002).
97. *Microelectronic Device and Circuits Research*, Gennum Corporation, Burlington Ontario (Wed. 20 June, 2001).
98. *Microelectronic Device and Circuits Research*, RIM Corporation, Waterloo Ontario (Thursday 31 May, 2001)
99. *Ultra Low-Voltage Low-Power Voltage Controlled Oscillators*, Institute of Radio Physics, Calcutta University, Calcutta, India (Wednesday 20 December 2000).
100. *Ultra Low-Voltage Low-Power Voltage Controlled Oscillators*, Department of Electrical Engineering, Chulalongkorn University, Bangkok, Thailand (Tuesday 12 December 2000).
101. *RF Noise Modeling of MOSFETs*, ECE Dept., National Univ. of Singapore, Singapore (Thursday 30 Nov. 2000).
102. *RF Noise Modeling of MOSFETs*, EEE Dept., Nanyang Technological Univ., Singapore (Monday 27 Nov. 2000).
103. *RF Microelectronic Devices and Circuits*, Conexant Inc., Newport Beach, CA (Monday 2 October 2000).
104. *RF Noise Modeling of MOSFETs*, National Semiconductor Corp., Santa Clara, CA (Friday 29 September 2000).
105. *RF Microelectronic Devices and Circuits*, Electrical Engineering Department, Eindhoven University of Technology, Eindhoven, Nederland, (Friday 15 September 2000).
106. *A General Noise and S-Parameters De-Embedding Procedure for On-Wafer High-Frequency Noise Measurements of MOSFETs*, Mitel Corporation (Thursday 31 August 2000).
107. *Effects of DC Stresses on the RF Properties of NMOSFETs*, Mitel Corporation (Thursday 31 August 2000).
108. *Effects of Forward Biasing the Substrate on the Properties of CMOS Ring Oscillators*, Mitel Corporation (Thursday 31 August 2000).
109. *High Frequency Noise Modeling of MOSFETs*, Angstrom Laboratory, Uppsala University, (Friday 19 March 1999).
110. *Some Circuit Applications of Gate-Controlled Lateral PNP Bipolar Junction Transistors*, Mitel Corp. (18 Feb. 1999).
111. *High Frequency Noise Modeling of MOSFETs*, Mitel Corporation (Thursday 18 February 1999).
112. *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).
113. *Gate-Controlled Lateral BJTs - Characteristics, Modeling and Experiments*, Laboratoire des Physique des Composants a Semiconductors (LPCS), ENSERG, Grenoble, France (Thursday 9 July 1998).
114. *High Frequency Noise of MOSFETs - Modeling and Experiments*, Rockwell Semiconductor Systems, Newport Beach, California, (Friday 20 February, 1998).
115. *BJT H.F. Noise Modeling and Experiments*, Lab. of ECTM, DIMES, Delft Univ. of Technology (7 July, 1997).
116. *H.F. Noise Studies of MOSFETs*, Laboratory of ECTM, DIMES, Delft University of Technology (7 July, 1997).
117. *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).
118. *DC Extraction of R_B and R_E of Polysilicon Emitter BJTs*, Laboratory of ECTM, DIMES, Delft University of Technology (30 June, 1997).
119. *Gate-Controlled Lateral BJTs - Characteristics, Modeling and Experiments*, Laboratory of ECTM, DIMES, Delft University of Technology (25 June, 1997).
120. *Narrow Width MOSFETs - Parameter Extraction and Physical and Circuit Modeling*, Laboratory of ECTM, DIMES, Delft University of Technology (25 June, 1997).
121. *Features and Mechanisms of the Saturating Hot-Carrier Degradation in LDD MOSFETs*, Laboratory of ECTM, DIMES, Delft University of Technology (23 June, 1997).
122. *Simple Method to Extract the Parasitic Resistances of MOSFETs Using a Single Device*, Laboratory of ECTM, DIMES, Delft University of Technology (23 June, 1997).
123. *Low Frequency Noise in Polysilicon Resistors and MOSFETs*, Mitel Corporation, Kanata (29 April, 1997).
124. *Parameter Extraction and Noise Modeling of BJTs at Microwave Frequencies*, INAOEP, Mexico (28 Feb. 1997).
125. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Xilinx Semiconductor, San Jose, California (6 December 1996).
126. *High Frequency Noise Modeling of Polysilicon Emitter Bipolar Junction Transistors*, Analog/Mixed Signal Process Development Group, National Semiconductor, Santa Clara, California (6 December 1996).
127. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Mitel Semiconductor, Ottawa (5 Nov. 1996).
128. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Research Institute for Materials Science, Budapest, Hungary (3 September 1996).
129. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Integrated Transceivers Division, Philips Research, Eindhoven, Nederland (4 July 1996).

130. *Features and Mechanisms of the Saturating Hot-Carrier Degradation in LDD MOSFETs*, Analysis and Reliability Division, IMEC, Leuven, Belgium (3 July 1996).
131. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Integrated RF technology Department, Rockwell Semiconductor Systems, Newport Beach, California (9 May 1996).
132. *Novel Applications of Lateral pnp Bipolar Transistors in a 0.8 μm BICMOS Technology*, Physics Department, National University of Singapore, Singapore (13 December 1995).
133. *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).
134. *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).
135. *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).
136. *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).
137. *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).
138. *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).
139. *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).
140. *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).
141. *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).
142. *Low Frequency Noise of GaAs- and InP-Based Resonant Tunneling Diodes*, Electronics Laboratories, General Electric Aerospace, Syracuse, New York, USA (12 June 1992).
143. *Low Frequency Noise in Resonant Tunneling Diodes*, Institut d'Electronique et de Microelectronique, ISEN, UMR, CNRS, Lille, France (27 May 1992).
144. *Physical and Circuit Modeling of Narrow Width MOSFETs*, Institut d'Electronique et de Microelectronique, ISEN, UMR, CNRS, Lille France (27 May 1992).
145. *Modeling of Narrow Width MOSFETs*, Laboratoire de Physique des Composants a Semiconducteurs, ENSERG, CNRS, Grenoble, France (25 May 1992).
146. *Narrow Width MOSFETs*, Electrical and Comp. Engineering Dept., Univ. of Waterloo, ON, Canada (4 March 1992).
147. *Narrow Width MOSFETs*, Shanghai Institute of Metallurgy, Academica Sinica, Shanghai, China (5 December 1991).
148. *Low Frequency Noise in Double Barrier Resonant Tunneling Diodes*, Shanghai Institute of Metallurgy, Academica Sinica, Shanghai, China (5 December 1991).
149. *Narrow Width MOSFETs*, Physics Dept., Shanghai Univ. of Science and Tech., Shanghai, China (3 Dec. 1991).
150. *Low Temperature Microelectronics*, Physics Department, Shanghai University of Science and Technology, Shanghai, China (2 December 1991).
151. *Hot-Carrier Degradation Studies in Short Channel NMOS Devices*, Solid State Devices Division, Naval Research Laboratory, Washington, D.C., USA (10 May 1991).
152. *Parasitic Effects in Narrow Width MOSFETs*, Advanced Semiconductor Material Science, Philips Research Laboratories, Eindhoven, Nederland (10 April 1991).
153. *A New Method for Determining the Parasitic Effects in Narrow Width MOSFETs*, Electrical Engineering Department, Eindhoven University of Technology, Eindhoven, Nederland (9 April 1991).
154. *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).
155. *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).
156. *Edge Effects in Narrow Width MOSFETs*, Semiconductor Base Technology, General Technology Division, IBM Essex Junction, Vermont, USA (10 September 1990).
157. *DIBL in Short Channel MOS Devices*, Advanced Semiconductor Processing Division, IMEC (Inter-University Microelectronics Center), Kapeldreef, Leuven, Belgium (13 July, 1990).

158. *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).
159. *Low Temperature Electronics*, CTF Systems Inc, Port Coquitlam, B.C., Canada (27 February, 1990).
160. *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).
161. *Analyzing Short-Channel PMOS Devices for Cryo-CMOS Microelectronics*, Semiconductor Components Group, Northern Telecom Electronics Ltd., Ottawa, Ontario, Canada (3 August 1989).
162. *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).
163. *MOS Microelectronics at Low Temperatures*, Semiconductor Components Group, Northern Telecom Electronics Ltd., Ottawa, Ontario, Canada (30 August, 1988).
164. *Low Temperature MOS Microelectronics*, Process Development, SEEQ Tech. Inc, San Jose, CA, USA (15 April 1988).
165. *Low Temperature Operations of Si CCDs for Imaging Applications*, with B. Jaggi, Engineering Science, SFU, Burnaby, B.C., Canada (29 October 1987).
166. *Low Temperature Electronics*, Dominion Astrophys. Observatory, Nat. Res. Council, Victoria, B.C., (21 July, 1987).
167. *S-I-S Millimeter Wave Detectors*, Radio Astronomy, Herzberg Institute of Astrophysics, National Research Council, Ottawa, Ontario, Canada (15 July 1987).
168. *Superconductivity - Review of the Theory and Electronic Applications*, Microtel Pacific Research, Burnaby Mountain, B.C., Canada (23 March 1987).

SERVICE

Office Held in Professional Societies

1. Director, *Division of Applied Sciences and Engineering*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2011-2013).
2. Member, *Academy of Sciences 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).
3. 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).
4. 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).
5. 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).
6. 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).
7. Member, *IEEE Electron Devices Society Fellow Evaluation Review Committee* (2011).
8. 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).
9. 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).
10. Member, *Committee to Evaluate Fellow Nominations, IEEE Electron Devices Society* (2011).
11. Member, *Adcom, IEEE Electron Devices Society* (2006-2008, 2009-2011).
12. Chair, *Compact Modeling Committee, IEEE Electron Devices Society* (2009-2012).
13. Member, *Publications Committee, IEEE Electron Devices Society* (2009-2012).
14. Member, *VLSI Technology and Circuits, IEEE Electron Devices Society* (2006-present).
15. Member, *Educational Activities Committee, IEEE Electron Devices Society* (2002-2011).
16. Member, *Compact Modeling Committee, IEEE Electron Devices Society* (2004-2008).
17. Member, *Optoelectronic Devices Committee, IEEE Electron Devices Society* (2002-2007).
18. Member, *Education Awards Committee, IEEE* (2003-2006).
19. Member, *ICNF International Advisory Committee* (2003-).
20. 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).
21. Member, *Technical Affairs Committee, The Electrochemical Society* (2006-2010).
22. Member, *Fellow Evaluations Committee, The Electrochemical Society* (2006-2010).

23. Divisional Advisor, *Electronics and Photonics Division*, **The Electrochemical Society** (2006-2010).
24. Divisional Advisor, *Organic and Biological Electrochemistry Division*, **The Electrochemical Society** (2006-2010).
25. Member, *Board of Directors*, **The Electrochemical Society** (2004-2006).
26. Chair, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2004-2006).
27. Member, *New Technology Subcommittee*, **The Electrochemical Society** (2001-2004).
28. Member, *Nanotechnology Subcommittee*, **The Electrochemical Society** (2003-2005).
29. Member, *Governing Body*, *Dielectric Science and Technology Division*, **The Electrochemical Society** (1994-1996, 1996-1998, 1998-2000, 2000-2002, 2002-2004, 2004-2006).
30. Member-at-Large, *Electronics Division*, **The Electrochemical Society** (2003-2005, 2005-2007).
31. Vice-Chair, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2002-2004).
32. Secretary, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2000-2002).
33. Member, *Publication Committee*, **Electrochemical Society** (1999-2001).
34. Symposium Planning Chair, *Dielectric Science and Technology Division*, **Electrochemical Society** (1998- 2000).
35. Awards Chair, *Dielectric Science and Technology (DS&T) Division*, **Electrochemical Society** (1996-1998).
36. Awards Chair, *Vancouver Section*, **IEEE** (1995-1996).
37. Counselor, *SFU Student Branch*, **IEEE** (1993-1995).

Conferences – Organizer, Program Committee etc.

38. Co-Chair, *International Advisory Committee*, **International Conference on Computers and Devices for Communications (CODEC)**, Calcutta, India (17-19 December 2012).
39. Member, *Scientific Committee*, **International Conference on Electrical and Computer Systems (ICECS'12)**, Ottawa, Canada (22-24 August 2012).
40. Member, *Scientific Committee*, **18th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Warsaw, Poland (24-26 May 2012)
41. Lead-Organizer, *Sixth International Symposium on Integrated Optoelectronics*, **The 221st Meeting of the Electrochemical Society**, Seattle, Washington (6-11 May 2011).
42. Member, *Organizing Committee*, **Eight International Caribbean Conference on Circuits, Devices and Systems (ICCDCS 2012)**, Playa del Carmen, Mexico (14-17 March 2012).
43. Member, *International Advisory Committee*, **The International Conference on VLSI, MEMS & NEMS (VMN-2012)**, Amity University, Uttar Pradesh, India (24-25 January 2012).
44. General Chair, **Eight International Conference on Ubiquitous Intelligence and Computing (UIC 2011)**, Banff, Canada (2-4 September 2011).
45. 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).
46. Member, *Scientific Committee*, **18th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Gliwice, Poland (16-18 June 2011)
47. General Chair, **21st International Conference on Noise and Fluctuations (ICNF 2011)**, Toronto, Canada (12-16 June 2011).
48. Member, *Technical Program Committee*, **21st International Conference on Noise and Fluctuations (ICNF 2011)**, Toronto, Canada (12-16 June 2011).
49. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 3*, **219th Meeting of the Electrochemical Society**, Montreal, Canada (1-6 May 2011).
50. Co-Organizer, *Silicon Nitride, Silicon Dioxide and Emerging Dielectrics XI*, **219th Meeting of the Electrochemical Society**, Montreal, Canada (1-6 May 2011).
51. Member, *Technical Program Committee*, **3rd International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2010)**, Tarragona, Spain (2 July 2010).
52. Member, *Organizing Committee*, **First International Training Course in Compact Modeling - EU CoMoN Compact Modeling Network**, Tarragona, Spain (30 June – 1 July 2010).
53. Member, *Scientific Committee*, **17th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Wroclaw, Poland (24-26 June 2010)
54. 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).

55. Lead-Organizer, *Fifth International Symposium on Integrated Optoelectronics*, **The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada, (25-30 April 2010).
56. Co-Chair, *International Advisory Committee, IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC), Calcutta, India (14-16 December 2009).
57. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 2*, **216th Meeting of the Electrochemical Society**, Vienna, Austria (4-9 October 2009).
58. Member, *Program Committee, SBMicro*, Natal, Brazil (31 August – 3 September 2009).
59. Member, *Scientific Program Committee, 20th International Conference on Noise and Fluctuations* (ICNF 2009), Pisa, Italy (15-19 June 2009).
60. 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).
61. Member, *International Advisory Committee, IEEE International Conference on Electron Devices and Solid-State Circuits 2008* (EDSSC2008), Hong Kong (8-10 December 2008).
62. Lead-Organizer, *Fourth International Symposium on Integrated Optoelectronics*, **214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (12-17 October 2008).
63. Member, *North & South America Regional Technical Committee, The 12th International Meeting on Chemical Sensor* (IMCS-12), Columbus, Ohio (13-16 July 2008).
64. Member, *Organizing/Steering Committee, International Symposium on Flexible Electronics (ISFE)*, Tarragona, Spain (6-9 April 2008).
65. Member, *Technical Program Committee, International Symposium on Flexible Electronics (ISFE)*, Tarragona, Spain (6-9 April 2008).
66. 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).
67. Member, *Scientific Program Committee, 19th International Conference on Noise and Fluctuations (ICNF 2007)*, Tokyo, Japan (9-14 November 2007).
68. Lead-Organizer, *Organic and Polymeric Semiconductor Devices*, **212th Meeting of the Electrochemical Society**, Washington, DC (7-12 October 2007).
69. Member, *Program Committee, SPIE Conference on Noise and Fluctuations in Circuits, Devices and Materials*, Florence, Italy (20-24 May 2007).
70. 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).
71. Co-Organizer, *Sensors Based on Nanotechnology 3*, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (6-11 May 2007).
72. Member, *Organizing Committee, IEEE Int' Conference on RFID 2007*, Grapevine, Texas (26-28 March 2007).
73. 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).
74. Co-Chair, *International Advisory Committee, IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC), Calcutta, India (14-16 December 2009).
75. Member, *International Advisory Committee, IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC), Calcutta, India (18-20 December 2006).
76. Member, *Programme Committee, European Nano Systems 2006*, Paris, France (14-15 December 2006).
77. Member, *International Programme Committee, The Fourth IASTED International Conference on Circuits, Signals, and Systems*, San Francisco, California, (20-22 November 2006).
78. Co-Organizer, *Bioelectronics, Biointerfaces, and Biomedical Applications 2*, **210th Meeting of the Electrochemical Society**, Cancun, Mexico (29 October – 3 November 2006).
79. Lead-Organizer, *Third International Symposium on Integrated Optoelectronics*, **210th Meeting of the Electrochemical Society**, Cancun, Mexico (29 October – 3 November 2006).
80. Member, *Technical Program Committee, IEEE/IEE 8th International Conference on Solid-State and Integrated-Circuit Technology* (ICSICT 2006), Shanghai, China (23-26 October 2006).
81. Co-Organizer, *Solid-State Joint General Poster Session, The 209th Meeting of the Electrochemical Society*, Denver, Colorado (7-12 May 2006).
82. Co-Organizer, *New Sensor Materials, The 209th Meeting of the Electrochemical Society*, Denver, Colorado (7-12 May 2006).
83. Vice-Chair, *Circuits, Sixth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDs-*

- 2006), Mexico (26-28 April 2006).
84. Member, Programme Committee, **European Nano Systems 2005**, Paris, France (14-16 December 2005).
 85. 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).
 86. Member, Scientific Program Committee, **18th International Conference on Noise and Fluctuations (ICNF2005)**, Salamanca, Spain (19-23 September 2005).
 87. Member, *Program Committee*, **Twelfth Canadian Semiconductor Technology Conf.**, Ottawa (August 2005).
 88. 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)
 89. Co-Chair, **SPIE Conf. on Noise in Devices and Circuits**, Austin, Texas (May 2005).
 90. 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).
 91. Member, *Technical Program Committee – Solid State Devices*, **IEEE Int. Electron Devices Meeting** (2003-2005).
 92. Vice-Chair, *International*, **Fifth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDs-2004)**, Dominican Republic (3-5 November, 2004).
 93. Lead-Organizer, *Second International Symposium on Integrated Optoelectronics*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (3-8 October 2004).
 94. Co-Organizer, *Solid-State Joint General Poster Session*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (3-8 October 2004).
 95. Co-Chair, **SPIE Conf. on Noise in Devices and Circuits**, Maspalomas, Gran Canaria, Spain (26-28 May 2004).
 96. Advisory Chair, **IEEE/SPIE International Conference on Computers and Devices for Communications (CODEC)**, Calcutta, India (1-3 January, 2004).
 97. Member, *International Advisory Committee*, **International Conference on Noise and Fluctuations (ICNF)** (2003-).
 98. Member, *Technical Program Committee*, **3rd International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics**, Montreux, Switzerland (20-23 October, 2003).
 99. Co-Organizer, *Seventh International Symposium on Low Temperature Electronics*, **204th Meeting of the Electrochemical Society**, Orlando, Florida (12-17 October, 2003).
 100. Member, *Scientific Program Committee*, **17th ICNF Noise and Fluctuations**, Prague, Czech (August 18-22, 2003).
 101. Member, *Program Committee*, **Eleventh Canadian Semiconductor Technology Conf.**, Ottawa (August 2003).
 102. Member, *Int. Steering Committee*, **IEEE Conf. on Electron Devices and Solid-St. Cir.**, Hong Kong, (7-9 July, 2003).
 103. Member, *Technical Program Committee*, **IEEE Device Research Conference** (2003).
 104. Chair, **SPIE Conference on Noise in Devices and Circuits**, Santa Fe, New Mexico (1-4 June, 2003).
 105. Member, *Technical Committee*, **SPIE Conference on Noise and Information in Nanoelectronics, Sensors and Standards**, Santa Fe, New Mexico (1-4 June, 2003).
 106. 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).
 107. Co-Organizer, Solid State Joint General Poster Session, **203rd Meeting of the Electrochemical Society**, Paris, France (27 April - 2 May, 2003).
 108. Chair, *Commission D - Electronics and Photonics*, **International Union of Radio Scientists (URSI)**, Canadian National Committee (1996-1999, 1999-2002).
 109. Member, *International Scientific Advisory Committee*, **3rd International Conference on Unsolved Problems of Noise (UPON '02)**, Washington, DC (September, 2002).
 110. Member, *International Steering Committee - 6th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC 2002)*, Budapest, Hungary (26-29 May, 2002).
 111. Lead-Organizer, *First International Symposium on Integrated Optoelectronics*, **201st Meeting of the Electrochemical Society**, Philadelphia, Pennsylvania (12-17 May, 2002).
 112. 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).
 113. 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).
 114. Member, **Program Committee**, **Tenth Canadian Semiconductor Technology Conf.**, Ottawa (13-17 August, 2001).
 115. Member, *Scientific Program Committee*, **16th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Gainesville, Florida (22-25 October, 2001).
 116. 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).
117. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **199th Meeting of the Electrochemical Society**, Washington, DC (25-30 March, 2001).
 118. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **198th Meeting of the Electrochemical Society**, Phoenix, Arizona (22-27 October, 2000).
 119. Member, *International Steering Committee - 5th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC 2000)*, Crete, Greece (21-24 May, 2000).
 120. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **197th Meeting of the Electrochemical Society**, Toronto, Ontario (14-19 May, 2000).
 121. 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).
 122. Co-Organizer, *Fifth Symposium on Low Temperature Electronics*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October, 1999).
 123. Co-Organizer, *State-of-the-Art Program on Compound Semiconductors XXXI*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October, 1999).
 124. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October, 1999).
 125. Member, *Technical Program Committee*, **15th International Conference on Noise in Physical Systems and 1/f Fluctuations (ICNF '99)**, Hong Kong (23-26 August, 1999).
 126. Member, *Program Committee - Canadian Semiconductor Technology Conf.*, Ottawa (10-13 August, 1999).
 127. Member, *International Scientific Advisory Committee*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (11-15 July, 1999).
 128. 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).
 129. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **195th Meeting of the Electrochemical Society**, Seattle, Washington (2-7 May, 1999).
 130. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **194th Meeting of the Electrochemical Society**, Boston, Massachusetts (1-6 November, 1998).
 131. Co-Organizer, *Thin Film Transistor Technologies IV*, **194th Meeting of the Electrochemical Society**, Boston, Massachusetts (1-6 November, 1998).
 132. 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).
 133. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **191st Meeting of the Electrochemical Society**, San Diego, California (3-8 May, 1998).
 134. Member, *International Committee*, **Second International IEEE Caracas Conference on Devices, Circuits and Systems (ICCDs-98)**, Margarita Island, Venezuela (2-4 March, 1998).
 135. Member, *International Steering Committee - 4th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC '97)*, Cardiff, Wales (22-24 June, 1998).
 136. Member, *Program Committee*, **SPIE International Symposium on Microelectronics and Assembly - Automatic Inspection and Novel Instrumentation Symposium**, Singapore (23-27 June, 1997).
 137. Co-Organizer, *State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVI)*, **191st Meeting of the Electrochemical Society**, Montreal, Canada (4-9 May, 1997).
 138. 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).
 139. 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).
 140. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **191st Meeting of the Electrochemical Society**, Montreal, Canada (4-9 May, 1997).
 141. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **190th Meeting of the Electrochemical Society**, San Antonio, Texas (6-11 October, 1996).
 142. Member, *International Advisory Committee*, **International Conference on Unsolved Problems in Noise**, Szeged, Hungary (September 1996).
 143. 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).

144. Member, *Program Committee - Canadian Semiconductor Technology Conf.*, Ottawa (14-18 August, 1995).
145. Member, *Advisory Board*, Auburn University's NSF Program in **Extended Temperature Range Electronics**, Auburn, Alabama (1995-2000).
146. Member, *International Steering Committee - 2nd International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC '94)*, Parma, Italy (18-20 May, 1994).
147. Co-Organizer - **Second International Guyana Conference**, Georgetown, Guyana (2-3 September, 1993).
148. Co-Organizer - **First International Guyana Conference**, New York City, New York, USA (13-14 June, 1992).
149. 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).
150. Member, *Organization Committee - 1992 IEEE International Reliability Physics Symposium (IRPS)*, San Diego, California, USA (30 March - 2 April 1992).
151. Member, *Organization Committee - 1991 IEEE International Reliability Physics Symposium (IRPS)*, Las Vegas, Nevada, USA (8-11 April, 1991).
152. Moderator - *Workshop 9 on Cold Electronics and Instrumentation Session, Low Temperature Engineering and Cryogenics (LTEC 90) Conference*, Southampton, United Kingdom (17-19 July, 1990).
153. Member, *Technical Advisory Committee - First International Conference on Low Temperature Electronics*, Berkeley, California, USA (23-26 April, 1990)
154. Member, *Organization Committee - 1990 IEEE International Reliability Physics Symposium (IRPS)*, New Orleans, Louisiana, USA (26-29 March, 1990).
155. Member, *Organization Committee - 1989 IEEE International Reliability Physics Symposium (IRPS)*, Phoenix Arizona, USA (11-13 April, 1989).

Session Chair/Co-Chair at Conferences/Symposia

156. 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).
157. Co-Chair, *Optoelectronics - Clinical Applications, Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society*, Seattle, Washington (Monday 7 May 2012).
158. Session Chair, **Eight International Caribbean Conference on Circuits, Devices and Systems (ICCDCS 2012)**, Playa del Carmen, Mexico (Thursday 15 March 2012).
159. 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).
160. Co-Chair– *Poster Session, Silicon Nitride, Silicon Dioxide, and Emerging Dielectrics 11, 219th Meeting of the Electrochemical Society*, Montreal, Canada (Tuesday 3 May 2011).
161. Co-Chair– *Poster Session, Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society*, Montreal, Canada (Tuesday 3 May 2011).
162. Co-Chair– *Modeling and Design, Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society*, Montreal, Canada (Tuesday 3 May 2011).
163. Co-Chair– *Solar Cells, Photovoltaics, Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society*, Montreal, Canada (Monday 2 May 2011).
164. 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).
165. 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).
166. Co-Chair, *Optical Sensors I, IEEE-URSI 12th International Symposium on Microwave and Optical Technology - ISMOT 2009*, New Delhi, India (Thursday 17 December 2009).
167. Chair, *Valedictory Function and Award Distribution, IEEE/SPIE 4th International Conference on Computers and Devices for Communications (CODEC)*, Calcutta, India (Wednesday 16 December 2009).
168. Chair, *Plenary and Keynote Session, IEEE/SPIE 4th International Conference on Computers and Devices for Communications (CODEC)*, Calcutta, India (Monday 14 December 2009).
169. 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).
170. 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).
171. 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).

172. Chair, *Devices I*, **20th International Conference on Noise and Fluctuations (ICNF 2009)**, Pisa, Italy (Tuesday 16 June 2009).
173. Chair, *ADC Circuits*, **IEEE International Conference on Electron Devices and Solid-State Circuits 2008 (EDSSC2008)**, Hong Kong (Monday 8 December 2008).
174. Chair, *Advanced Photodetectors I*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Tuesday 14 October 2008).
175. Chair, *Biophotonics I*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 13 October 2008).
176. Chair, *Modeling*, **NanoTr IV – Nanoscience and Nanotechnology Conference**, Istanbul, Turkey, (Monday 9 June 2008).
177. Co-Chair, *Plenary Session*, **26th International Conference on Microelectronics**, Nis, Serbia (11-14 May 2008).
178. Chair, *Session 5 – Device Modeling*, **International Symposium on Flexible Electronics (ISFE)**, Tarragona, Spain (6-9 April 2008)
179. Co-Chair, *Special Session on Power Amplifiers*, **German Microwave Conference**, Hamburg-Harburg, Germany (10-12 March 2008).
180. Co-Chair, *Thin Film Transistors II*, **First Int. Symposium on Organic Semiconductor Materials and Devices, The 212th Meeting of the Electrochemical Society**, Washington, DC (Tuesday 9 October 2007).
181. Co-Chair, *Thin Film Transistors I*, **First Int. Symposium on Organic Semiconductor Materials and Devices, The 212th Meeting of the Electrochemical Society**, Washington, DC (Monday 8 October 2007).
182. Chair, *MOS-SiGe Session*, **19th International Conference on Noise and Fluctuations (ICNF2007)**, Tokyo, Japan (Monday 9 September 2007).
183. 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).
184. 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).
185. 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).
186. Co-Chair, *Sensing Materials and Devices*, **Sensors Based on Nanotechnology 3, 211th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 7 May 2007).
187. Chair, *Plenary Session*, **IEEE/SPIE International Conference on Computers and Devices for Communications (CODEC)**, Calcutta, India (18-20 December 2006).
188. Co-Chair, *Bioelectronics: Electrochemical Frontiers*, **Bioelectronics, Biointerfaces, and Biomedical Applications 2, 210th Meeting of the Electrochemical Society**, Cancun, Mexico (Thursday 2 November 2006).
189. Co-Chair, *Photodetectors and Optical Receivers*, **Third International Symposium on Integrated Optoelectronics, 210th Meeting of the Electrochemical Society**, Cancun, Mexico (Monday 30 October 2006).
190. Co-Chair, *Solid-State Joint General Poster Session*, **209th Meeting of the Electrochemical Society**, Denver, Colorado (Tuesday 9 May 2006).
191. Co-Chair, *Active and Passive Components in CMOS-Compatible Technologies*, **IEEE IEDM**, Washington, DC (Wednesday 7 December 2005).
192. Co-Chair, *Detection of Bio-Molecules*, **208th Meeting of the Electrochemical Society**, Los Angeles, California (Thursday 20 October 2005).
193. Co-Chair, *Bio-Functional Surfaces*, **208th Meeting of the Electrochemical Society**, Los Angeles, California (Tuesday 18 October 2005).
194. Chair, *Optoelectronic and Photonic Devices*, **18th International Conference on Noise and Fluctuations (ICNF 2005)**, Salamanca, Spain (Tuesday 20 September 2005).
195. Co-Chair, *Emerging Dielectrics II*, **207th Meeting of the Electrochemical Society**, Quebec City, PQ (19 May 2005).
196. Co-Chair, *Thin Film Photonics*, **207th Meeting of Electrochem. Soc.**, Quebec City, Quebec (Tues. 17 May 2005).
197. Co-Chair, *Defects/Plasma-Induced Damage*, **207th Meeting of the Electrochemical Society**, Quebec City, Quebec (Monday 16 May 2005).
198. Co-Chair, *Interface Characterization*, **207th Meeting of the Electrochemical Society**, Quebec City, Quebec (Monday 16 May 2005).
199. Chair, *WCM-1*, **Workshop on Compact Modeling – Nanotech 2005**, Anaheim, California (Tuesday 10 May 2005).
200. Chair, *Linearity, Distortion and Noise*, **Fifth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCD-2004)**, Dominican Republic (Thursday 4 November 2004).

201. Co-Chair, *Solid-State Joint General Poster Session*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Tuesday 5 October 2004).
202. Co-Chair, *Fabrication*, **Second International Symposium on Integrated Optoelectronics, 206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 4 October 2004).
203. 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).
204. Co-Chair, *Novel Photonic Structures*, **Second International Symposium on Integrated Optoelectronics, 206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 4 October 2004).
205. Chair, *Phase Noise in Oscillators and Related Circuits*, **SPIE Conference on Noise in Devices and Circuits**, Gran Canaria, Spain (Friday 28 June 2004).
206. Chair, *Noise in MOSFETs*, **SPIE Conf. on Noise in Devices and Circuits**, Gran Canaria, Spain (Wed. 26 June 2004).
207. Chair, *Modeling of Passives*, **Workshop on Compact Modeling – Nanotech 2004**, Boston, MA (10 March 2004).
208. 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).
209. 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).
210. Chair, *Electronic and Optoelectronic Devices 6*, **17th International Conference on Noise and Fluctuations (ICNF 2003)**, Prague, Czech (Wednesday 20 August, 2003).
211. Chair, *Mesoscopic Devices*, **17th International Conference on Noise and Fluctuations (ICNF 2003)**, Prague, Czech (Monday 18 August, 2003).
212. Chair, *Measurements and Limitations*, **SPIE Conference on Noise in Devices and Circuits**, Santa Fe, New Mexico (Wednesday 4 June, 2003).
213. Chair, *Noise in MOSFETs I*, **SPIE Conf. on Noise in Devices & Circuits**, Santa Fe, NM (Mon. 2 June, 2003).
214. 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).
215. 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).
216. Co-Chair, *Solid State Joint General Poster Session*, **203rd Meeting of the Electrochemical Society**, Paris, France (Tuesday 29 April, 2003).
217. 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).
218. 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).
219. 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).
220. Chair, *Session 6, Workshop on Compact Modeling*, **5th International Conference on Modeling and Simulation of Microsystems** (Wednesday 24 April, 2002).
221. Chair, *Solid-State Devices 3*, **Fourth International Caracas Conference on Devices, Circuits and Systems (ICCDs-2000)**, Aruba (Thursday 18 April, 2002).
222. Co-Chair, *SiO₂ 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).
223. 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).
224. 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).
225. 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).
226. Co-Chair, *Electronics/Dielectric Science and Technology Joint General Session*, **198th Meeting of the Electrochemical Society**, Phoenix, Arizona (Thursday 26 October, 2000).
227. Chair, *Optical Devices*, **30th European Solid-State Device Research Conf.**, Cork, Ireland (12 September, 2000).
228. 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).
229. Co-Chair, **State-of-the-Art Program on Compound Semiconductors XXXI**, 196th Meeting of the Electrochemical

- Society, Honolulu, Hawaii (Wednesday 20 October, 1999).
230. Co-Chair, *Cryogenic Application Aspects*, **Fifth Symposium on Low Temperature Electronics**, 196th Meeting of the Electrochemical Society, Honolulu, Hawaii (Thursday 21 October, 1999).
 231. 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).
 232. 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).
 233. Session Chair, *Measurement Technique*, **15th International Conference on Noise in Physical Systems and 1/f Fluctuations (ICNF '99)**, Hong Kong (Thursday 26 August, 1999).
 234. Chair, *CMOS Sensors*, **Canadian Semiconductor Technology Conf.**, Ottawa (Thursday 12 August, 1999).
 235. Chair, *Noise in Circuits*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (Thursday 15 July, 1999).
 236. Chair, *Noise Spectroscopy, Diagnostics and Measurements*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (Wednesday 14 July, 1999).
 237. 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).
 238. 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).
 239. Co-Chair, *Parameter Extraction*, **IEEE Int. Conf. on Microel. Test Structures (ICMTS 99)** (Thur. March 18, 1999).
 240. Chair, *Photodetectors Session*, **International Conference on Fiber Optics and Photonics (Photonics -98)**, New Delhi, India (Wednesday 16 December, 1998)
 241. 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).
 242. 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).
 243. 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).
 244. 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).
 245. Chair, *Solid State Devices II*, **Second International Caracas Conference on Devices, Circuits and Systems (ICCD-98)**, Margarita Island, Venezuela (Tuesday 2 March, 1998).
 246. Chair, *Transistors Session*, **Canadian Semiconductor Tech. Conf.**, Ottawa, Canada (Thursday 14 August, 1997)
 247. 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).
 248. 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).
 249. 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).
 250. 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).
 251. Session Chairman, *Noise in Microwave Semiconductor Devices*, **1996 Asia-Pacific Microwave Conference (APMC '96)**, New Delhi, India (17-20 December, 1996).
 252. 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).
 253. 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).
 254. Chairman, *Heterostructures and Alternative Devices Session*, **Electrochemical Society Spring Meeting**, Honolulu, Hawaii (16-21 May, 1993).
 255. 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).
 256. 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).
 257. Chairman, *Cold Electronics and Instrumentation*, **Low Temperature Engineering and Cryogenics (LTEC 90) Conference**, Southampton, United Kingdom (17-19 July, 1990).

258. Chairman, *Instrumentation and High Power Devices*, **First International Conference on Low Temperature Electronics**, Berkeley, California, USA (23-26 April, 1990)
259. Session Chairman - **1989 Canadian Conference on Very Large Scale Integration (CCVLSI 89)**, Vancouver, British Columbia, Canada (22-24 October, 1989).

Journals Reviewing

1. Analog Integrated Circuits and Signal Processing (1996 -).
2. Applied Optics (1989).
3. Applied Physics Letters (1996 -).
4. Arabian Journal for Science and Engineering (1993).
5. Canadian Journal of Physics (1992 -).
6. Cryogenics (1988 -).
7. Electrochemical and Solid-State Letters (ESL)
8. Fluctuations and Noise Letters (2001 -)
9. IEE Electronics Letters (1994 -).
10. IEE Proceedings (1995 -)
11. IEEE Electron Device Letters (1994 -).
12. IEEE Journal of Lightwave Technology (1996 -).
13. IEEE Journal of Quantum Electronics (1998 -).
14. IEEE Journal Solid State Circuits (1991 -).
15. IEEE Microwave and Guided Wave Letters (2000)
16. IEEE Photonics Technology Letters (2001 -)
17. IEEE Transactions on Biomedical Circuits and Systems (2009-)
18. IEEE Transactions on Circuits and Systems I (2010 -).
19. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (1994 -).
20. IEEE Transactions on Electron Devices (1995 -).
21. IEEE Trans. on Microwave Theory and Techniques (2002 -)
22. IEEE Microwave and Wireless Components Letters (2002 -)
23. IEEE Sensors Journal (2010 -).
24. IEEE Transactions on Nanotechnology (2009-)
25. IET Circuits, Devices and Systems(2009-)
26. International Journal of High Speed Electronics and Systems (2002).
27. Journal of Applied Physics (1995 -).
28. Journal of the Electrochemical Society (1994 -).
29. Materials Science and Engineering B (1992 -).
30. Microelectronic Engineering (2010 -).
31. Microelectronics Journal (2008 -)
32. Microelectronics Reliability (1997 -)
33. Nano Letters (2009 -)
34. Nanotechnology (2010 -)
35. Optics Communications (2006 -)
36. Optics Express (2005 -)
37. Organic Electronics (2009-)
38. Philosophical Magazine Letters (2009-)
39. Physica B (2009-)
40. Semiconductor Science and Technology (1999 -)
41. Sensors (2009-)
42. Sensors & Actuators: B. Chemical (2009-)
43. Solid State Electronics (1987 -).
44. Synthetic Metals (2009 -).
45. Thin Solid Films (2010 -)/

Conference Proceedings Reviewing

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* (ICCD-2004), Dominican Republic (3-5 November, 2004).
32. Fourth IEEE International *Caribbean Conference on Devices, Circuits and Systems* (ICCD-2000), Aruba (17-19 April, 2002).
33. Third IEEE International *Caracas Conference on Devices, Circuits and Systems* (ICCD-2000), Cancun, Mexico (15-17 March, 2000).
34. Second International IEEE *Caracas Conference on Devices, Circuits and Systems* (ICCD-98), Margarita Island, Venezuela (2-4 March, 1998).
35. Sixth International Workshop on *Expert Evaluation of Compound Semiconductor Material and Technologies* (EXMATEC 2002), Budapest, Hungary (26-29 May, 2002).
36. Fifth International Workshop on *Expert Evaluation of Compound Semiconductor Material and Technologies* (EXMATEC 2000), Crete, Greece (21-24 May, 2000).
37. Fourth International Workshop on *Expert Evaluation of Compound Semiconductor Material and Technologies* (EXMATEC '97), Cardiff, Wales (22-24 June, 1998).
38. Third Int'l Workshop on *Expert Evaluation of Compound Semiconductor Material and Technologies* (EXMATEC '96), Freiburg, Germany (12-15 May 1996).
39. Second International Workshop on *Expert Evaluation of Compound Semiconductor Material and Technologies* (EXMATEC '94), Parma, Italy (18-20 May, 1994).
40. 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).
41. *European Nano Systems* 2006, Paris, France (14-15 December 2006).
42. First International *Conference on Low Temperature Electronics*, Berkeley, California, USA (1990).
43. *IEEE Bipolar Circuits & Technology Meeting* (BCTM) (1993).
44. *IEEE Device Research Conference* (2003).
45. *IEEE Int'l Electron Device Meeting* (IEDM) (1994, 2003-2005).
46. *IEEE Int'l Conf. on Electron Devices and Solid-State Circuits* 2008 (EDSSC2008), Hong Kong (8-10 Dec. 2008).
47. *IEEE Conf. on Electron Devices and Solid-St. Cir.*, Hong Kong, (7-9 July, 2003).
48. *IEEE Device Research Conference* (2003-2004)
49. *IEEE International Conference on Electron Devices and Solid-State Circuits* 2007 (EDSSC2007), Southern Taiwan University, Tainan, Taiwan (20-22 December 2007).
50. Third *International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics*, Montreux, Switzerland (20-23 October, 2003).
51. *IEEE International Conference on RFID 2007*, Grapevine, Texas (26-28 March 2007).
52. *IEEE International Reliability Physics Symposium* (IRPS), San Diego, California, USA (30 March - 2 April 1992).
53. *IEEE International Reliability Physics Symposium* (IRPS), Las Vegas, Nevada, USA (8-11 April, 1991).
54. *IEEE International Reliability Physics Symposium* (IRPS), New Orleans, Louisiana, USA (26-29 March, 1990).
55. *IEEE International Reliability Physics Symposium* (IRPS), Phoenix Arizona, USA (11-13 April, 1989).
56. *IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC), Calcutta, India (18-20 December 2006).
57. *IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC), Calcutta, India (1-3 January, 2004).
58. Twentieth *International Conference on Noise and Fluctuations* (ICNF2009), Pisa, Italy (15-19 June 2009).
59. Nineteenth *International Conference on Noise and Fluctuations* (ICNF2007), Tokyo, Japan (September 2007).
60. Eighteenth *International Conf. on Noise and Fluctuations* (ICNF2005), Salamanca, Spain (19-23 September 2005).
61. Seventeenth *International Conference on Noise and Fluctuations*, Prague, Czech (August 18-22, 2003).
62. Sixteenth *International Conference on Noise in Physical Systems and 1/f Fluctuations*, Gainesville, Florida (22-25 October, 2001).
63. Fifteenth *International Conference on Noise in Physical Systems and 1/f Fluctuations* (ICNF '99), Hong Kong (23-26 August, 1999).
64. Fourteenth *International Conference on Noise in Physical Systems and 1/f Fluctuations* (ICNF) (1997 -)
65. *International Symposium on Flexible Electronics* (ISFE), Tarragona, Spain (6-9 April 2008).
66. *Polytronic 2007 – The 6th International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics*, Miraikan - Odaiba, Tokyo, Japan (16-18 January 2007).

67. *Low Temperature Engineering and Cryogenics* (LTEC 90) Conference, Southampton, United Kingdom (17-19 July, 1990).
68. *24th Symposium on Microelectronics Technology and Devices*, Natal, Brazil (August 31 - September 3, 2009).
69. *SIGGRAPH Conference*, USA (1991).
70. *SPIE Conf. on Noise in Devices and Circuits*, Maspalomas, Gran Canaria, Spain (26-28 May 2004).
71. *SPIE Conference on Noise and Information in Nanoelectronics*, Sensors and Standards, Santa Fe, New Mexico (1-4 June, 2003).
72. *SPIE International Symposium on Microelectronics and Assembly - Automatic Inspection and Novel Instrumentation Symposium*, Singapore (23-27 June, 1997).
73. The *Fourth IASTED International Conference on Circuits, Signals, and Systems*, San Francisco, California, (20-22 November 2006).
74. The 12th *International Meeting on Chemical Sensor* (IMCS-12), Columbus, Ohio (13-16 July 2008).
75. Fourth *International Conference on Unsolved Problems of Noise and Fluctuations in Physics, Biology & High Technology*, Gallipoli (Lecce), Italy (6-9 June, 2005)
76. Third *International Conference on Unsolved Problems of Noise* (UPON '02), Washington, DC (September, 2002).
77. Second *International Conf. on Unsolved Problems of Noise* (UPON '99), Adelaide, Australia (11-15 July, 1999).
78. First *International Conference on Unsolved Problems in Noise*, Szeged, Hungary (September 1996).

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 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).
- Reviewer of proposal, US Army Medical Research and Material Command (USAMRMC), USA (2009).
- 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, New Pioneer Awards Selection Committee, Skills For Change, Ontario, Canada (2010).

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).

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).

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).

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 2E14 Electronic Devices and Circuits-An Introduction
 ECE 3EJ4 Electronic Devices and Circuits II
 ECE 4EK3 Microelectronics

Graduate Courses

ECE 740 Semiconductor Device Theory and Modeling (Graduate Course)
 ECE 741 Analog Integrated Circuits (Graduate Course)

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 740 Semiconductor Device Theory and Modeling
(Graduate course, gave first course offering in Fall 2001).
2. ECE 741 Analog Integrated Circuits
(Graduate course, gave first course offering in Spring 2001).
3. ENSC 894 Advanced Microelectronic Devices
(Special Topics graduate course, gave first course offering in Spring 1987).
4. 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).
5. ENSC 853 Digital Semiconductor Devices and Circuits
(Graduate course, gave first course offering in Spring 1989).
6. ENSC 850 Semiconductor Device Theory
(Graduate course, gave first course offering in Fall 1997).
7. ENSC 461 Introduction to MOS Transistor Theory and Circuits
(Special Topics undergraduate course, gave first course offering in Spring 1988).
8. ENSC 461 Introduction to MOS Devices and Circuits
(Special Topics undergraduate course, gave first course offering in Spring 1990).
9. ENSC 453 Semiconductor Device Engineering
(Undergraduate course, gave first course offering in Spring 1991).
10. ECE 4EK3 Microelectronics
(Undergraduate course, gave first course offering in Fall 2000).
11. ECE 2EI4 Electronic Devices and Circuits
(Undergraduate course, gave first course offering in Spring 2000).

STUDENTS/RESEARCHERS SUPERVISED (Position after graduation)

Visiting Professors, Post-Doctoral Fellows and Research Associates

1. Dr. Matiar Howlader (Senior Research Associate), **Micro- & Nano-Systems Integration Technologies** (July 2010-).
2. Fangfang Zhang (Research Associate), **Micro- and Nano-Systems Integration Technologies** (July 2010-).
3. Dr. Mehdi Kazemeini (Visiting Professor), **Plastic Microelectronics** (February 2000 -). Research Associate, McMaster University.
4. Dr. Ognian Marinov (Senior Research Associate), **Low Frequency Noise and Reliability in Semiconductor Devices** (Oct. 1999 -).
5. Dr. Fei Xu (Visiting Scholar), **Impedance Spectroscopy of Biological Systems** (March 2011-March 2012).
6. Euiyoung Jeong (Visiting Researcher), **Static and Noise Modeling of Nanoscale Junctionless Transistors** (July – 2011-January 2012), PhD student, POSTECH, Pohang, South Korea.
7. Marcelo Macchi da Silva (Visiting Scholar), **High-speed, High-sensitivity CMOS Imaging Systems** (June 2010 - August 2010)
8. Dr. Yiqi Zhuang (Visiting Professor), **Low Frequency Noise and Reliability in Semiconductor Devices** (September – December 2009). Dean and Professor, Xidian University, Xi'an, China.
9. Dr. Abel García Barrientos (Post-Doctoral Fellow), **Noise Modeling in Advanced MOS Devices** (Jul-August and October-December 2009) , Researcher, Universidad Politécnica de Pachuca, Pachuca, Hidalgo, México.
10. Dr. Hamdy Abd El Hamid (Post-Doctoral Fellow), **Nanoscale Silicon Transistors** (October 2007-September 2009). Assistant Professor, The British University, Cairo, Egypt.
11. Dr. Akila Derardja, (Visiting Scholar), **Microfabricated Reference Electrodes for Biosensor Applications** (June-August 2009) Maitre de Conférences Faculté de Médecine, Université de Batna, Algeria.
12. Dr. P.K. Basu (Visiting Professor), **Planar Lightwave Circuits** (October 2001 - December 2001, Summer 2002, September-November 2008). Professor, Electronics Department, University of Calcutta, India.
13. Dr. Shadrokh Samavi (Visiting Professor), **FPGA Implementation of DNA Microarrays Electronic Detection Systems** (September 2002-August 2003 and September -2008-August 2009). Professor, Isfahan University, Iran.
14. Augusto Ximenes (Visiting Scholar), **Optical Detection Systems** (December 2007-August 2008). PhD Student, Brazil.
15. Nishil Gupta, (Visiting Scholar), **Statistical Processing of Biomedical Data** (May – July 2007).
16. Dr. Matiar Howlader (Research Associate), **Packaging of Semiconductor Components** (April 2005 – June 2007).

Assistant Professor, McMaster University.

17. Fernando de Souza Campos (Visiting Scholar), **Fluorescence Optical Detection Systems** (January – December 2006).
18. Dr. Benjamin Iniguez (Visiting Professor), **Compact Modeling of Semiconductor Devices** (October 2006, November 2009).
19. Dr. Faycal Saffih (Research Engineer), **Wireless Sensor Systems for In-Vivo Applications** (October 2005- September 2006). Pixel Architecture Designer, Voxtel, Beaverton, Oregon.
20. Dr. Guennadi Kouzaev, (Research Associate), **Modeling of Passive Microwave Components** (Oct. 2001 – August 2005). Professor, Norwegian Science and Technology University – NTNU, Trondheim, Norway.
21. Yogesh Ramadass (Research Assistant), **Broadband Circuits** (Summer 2004), Ph.D. student MIT.
22. Dr. Kamal Ghosh (Visiting Professor), **L.F. Noise Modeling** (Summer 2002). Professor, Calcutta, India.
23. Dr. Nikhil R. Das (Post-Doctoral Fellow), **Physics and Modeling of Photodetectors** (Sept. 1999 - August 2002). Professor, University of Calcutta, India.
24. Dr. C.X. Peng (Visiting Professor), **Computerized Instrumentation** (September 2001-December 2001). Professor, University of Central Michigan, Michigan, USA.
25. Dr. Yves Audet (Post-Doctoral Fellow), **Polymer Transistors** (June 2001-August 2001), Assistant Professor, Ecole Polytechnique de Montreal, Montreal, Quebec.
26. Dr. Subhananda Chakravarti (Post-Doctoral Fellow), **Polymer Transistors** (September 2000 - May 2001). Research Associate, University of Michigan, USA.
27. Dr. Jiansheng Xu (Post-Doctoral Fellow), **Noise in Semiconductor Devices and Circuits** (May 2000 -May 2001) Engineer, IBM, Burlington, USA.
28. 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.
29. Dr. Plamen Kolev (Post-Doctoral Fellow), **Characterization of Semiconductor Devices** (May 98 - August 1999), Engineer, Silicon Wave, San Diego, California.
30. Dr. Winnie Chu (Post-Doctoral Fellow), **Fabrication and Characterization of Chemical Sensors** (May 1998 - May 1999), Patent Scientist, UBC, Canada.
31. Dr. Xu-Yuan Chen (Post-Doctoral Fellow), **Noise in Semiconductor Devices** (May '97- November 1997), Professor, University of Tromso, Norway.
32. Dr. S. Rumyantsev (Visiting Senior Scientist), **Noise in Semiconductor Devices** (Dec. 1996 - June 1997, Spring 1998, Spring 1999). Professor, IOFFE Institute, St. Petersburg, Russia.
33. Dr. Anirban Bandyopadhyay (Post-Doctoral Fellow), **Physics and Modeling of Photodiodes** (Oct. '96 - July 1997), Photonic Design Engineer, Intel Corp., California.
34. Dr. M. Aoki (Visiting Senior Scientist) **Ultra-Low Power CMOS Devices and Circuits** (Summer 1996). Manager, Texas Instruments Research Labs, Tsukuba, Japan.
35. Dr. Edmundo Gutierrez (Visiting Professor), **Low Temperature Electronics** (Jan. 1996 - Dec. 1996), Titular Professor, INAOE, Puebla, Mexico.
36. 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.
37. 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.
38. Z.P. Zuo (Research Associate) **Semiconductor Device Parameter Extraction and Modeling** (May 1988 - May 1990) - Software Engineer, Cisco Ltd., California

Ph.D. Students

39. Hytham A. Afifi (Ph.D.) **Theoretical Modeling of Nanoscale Semiconductor Devices** (Sep. 2010 -).
40. Tianyi Guo (Ph.D.) **Microfluidic Optoelectronics Devices** (September 2010 -). Co-supervised with Profs. Qiyin Fang and Chang-Qing Xu.
41. Zhiyun Li (Ph.D.) **Micro-Raman Integrated Spectrometer** (September 2010 -). Co-supervised with Profs. Ravi Selvaganapathy and Qiyin Fang.
42. Darek Palubiak (Ph.D.), **High-speed, High-sensitivity CMOS Image Sensing** (Sep. 2009 -).
43. Mohammadreza Dadkhah (Ph.D.), **Compressive Image Sensing** (Sep. 2008 -). Co-supervised with Prof. S. Shirani.
44. Waleed Shinwari (Ph.D.), **Static and Dynamic Modeling of DNA Biosensors for Biomedical Applications**, (May 2007 – September 2011). Post-doctoral Fellow, Sunnybrook Medical Center, Toronto.

45. Hossein Kassiri Bidhendi (Ph.D.) **High-speed, High-sensitivity CMOS Image Sensing** (Sep. 2010 -). Left the PhD program for employment in February 2011
46. 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, King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia.
47. Mohamed Naser (Ph.D.) **Theoretical Modeling of Quantum Dot Infrared Photodetectors** (September 2005 – April 2010). Co-supervised with Prof. D.A. Thompson. MRI PDF at Juravinski Cancer Center, Hamilton (Sep. 2009 -).
48. Pablo Lara Bullesos, **Modeling of Physical Mechanisms in Organic Thin-Film Transistors and Related Structures** (September 2006-October 2009). Co-supervised with Prof. JA. Jimenez-Tejada. Researcher, Universidad de Granada, Granada, Spain.
49. 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. Assistant Professor, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.
50. 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.
51. Hamed Mazhab Jafari (Ph.D.) **Ultra-wideband Systems for Medical Imaging** (September 2006-August 2007). Transferred to Toronto.
52. 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.
53. 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.
54. 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.
55. Rizwan Murji (Ph.D.) **Low-Power CMOS Radio Frequency Integrated Circuits for Frequency Synthesis** (September 2002-August 2005), Senior Electronics Engineer, Motorola Inc., Schaumburg, Illinois, USA.
56. Yasser El-Batawy (Ph.D.) **Modeling of Advanced Photodiodes** (January 2001-April 2005). Assistant Professor Engineering Physics Department, Cairo University, Egypt.
57. S. Naseh (Ph.D.) **Investigation of Hot-Carrier Effects on RF CMOS Integrated Circuits** (Jan. 1999 – March 2005). Assistant Professor, Ferdowsi University, Mashad, Iran.
58. 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.
59. Mathieu Marin (Ph.D.), **Etude Experimentale du Bruit en 1/f Dans Les Composants CMOS Issus de Technologie Sub-0.18 μm** (December 2003). Co-supervised with Mario DeMurcia, Université de Montpellier II, France. Engineer, ST Microelectronics, Grenoble, France.
60. Mojammel Al-Hakim, (Ph.D.), **Modeling of Ultra-small MOSFETs** (May 2003-August 2003), left program for personal reasons, Assistant Professor, BUET, Bangladesh.
61. C.H. Chen (Ph.D.) **Noise Characterization and Modeling of MOSFETs for RFIC Applications** (September 1998 - September 2002). Assistant Professor, McMaster University, Hamilton, Ontario.
62. 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.
63. 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.
64. W. Zhong (Ph.D.) **Modeling of Active and Passive Microwave Structures** (Jan. 1998 - May 1999, Ph.D. not completed), RF Engineer, Sierra Wireless, Vancouver.
65. 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.
66. 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.
67. 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.
68. 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.
69. Xiaojun Zhao (Ph.D.) **Physics and Modeling of Photodiodes** (September 1994 -January 1995, Ph.D. not completed), Systems Engineer, JDS Uniphase, Ottawa.

70. 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.
71. 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

72. Anton Knigavko (M.Eng.), **Optical Grating for Micro-Raman Spectrometer** (September 2010 – Dec 2011). Co-supervised with Qiyin Fang.
73. Feng Cong (M.A.Sc), **Integrated Circuits for Biosensor Applications** (September 2009 -).
74. Peter Lee (M.A.Sc), **Microfluidic Preprocessing System for Biosensors** (September 2010 -). Co-supervised with Prof. Ravi Selvaganapathy.
75. Ebrahim Nemati (M.A.Sc), **Integrated Circuits for Biosensor Applications** (September 2010 -).
76. Tamnun E Mursalin (Ph.D.) **Biomedical Signal Processing** (Sep. 2010 -). Co-supervised with Prof. Qiyin Fang, Alexander Jeremic and David Andrews.
77. Sumit Majumdar (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).
78. Kajan Kanagaratnam (M.Eng.), **High-speed Digital Microscope** (September 2010- August 2011). Engineer, IBM Canada, Markham.
79. Salman Safari, (M.A.Sc.) **Microfluidic Reference Electrodes for use in BioFETs Sensorg System** (September 2008 – November 2010). Co-supervised with Prof. R. Selvaganapathy.
80. Roy Wang (M.A.Sc) **Dual-view Catadioptric Objective Lens Design for Endoscopic Fluorescence Imaging Applications** (September 2008 – September 2010). Co-supervised with Qiyin Fang. Ph.D. student, University of Toronto.
81. 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
82. Hossein Kassiri Bidhendi (M.A.Sc.) **Design of Ultra-Wideband RFICs for Medical Imaging Applications** (Sep. 2008 – September 2010). Ph.D. student, McMaster University.
83. 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.
84. Wei Zhou, (M.A.Sc.) **A Wireless Sensor System and Application of Traditional Chinese Pulse Diagnosis for Individual Healthcare Monitoring** (August 2007 – November 2009).
85. E. Malick Gaye, (M.A.Sc.) **Wireless Sensor Systems for In-Vivo Applications** (September 2008 - April 2009) Engineer, Crone Geophysics.
86. 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
87. Gefei Zhou, (M.A.Sc.) **Narrow-Band Receiver and Ultra-Wideband Low Noise Amplifier** (September 2007 – September 2009). Research Assistant, McMaster University.
88. 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.
89. Moussa Kfoury (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.
90. Kurt Huang (M.A.Sc.) **Wireless Sensor Systems for In-Vivo Applications** (September 2005-April 2008). Entrepreneur, China.
91. 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
92. Waleed Shinwari (M.A.Sc.), **Modeling and Simulation of Electrochemical DNA Sensors in CMOS Technology** (September 2005 – April 2007). Ph.D. student, McMaster University.
93. Wei Liu (M.A.Sc.) **Electronic Systems for Biomedical Applications** (September 2004 -). Co-supervised with Prof. S. Hranilovic. Systems Engineer, Nortel, Ottawa.
94. 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.
95. Samar Mikhail Abdelsayed (M.A.Sc.) **Power Amplifiers and Antennas for Implantable Biomedical Transceivers**

- (January 2004 – April 2006). Co-supervised with Prof. N. Nikolova. Engineer, RIM, Waterloo, Canada.
96. 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.
 97. 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
 98. Nabeel Jafferli (M.A.Sc.) **Low-Voltage, Low-Power CMOS Downconversion Mixers** (September 2002 –September 2005). President, X2 Networks Inc., Toronto, Canada.
 99. 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.
 100. 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.
 101. 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.
 102. 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.
 103. 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.
 104. 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.
 105. 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., Schaumburg, Illinois, USA.
 106. Zhenwen Wang (M.A.Sc.) **Modeling of Passive Microwave Circuit Elements** (January 00 -September 02). Engineer, Faculty of Science, University of Waterloo, Waterloo, Ontario.
 107. A K M Mollah (M.Eng.) **Lateral BJT Circuits** (Jan. 2002 -Aug. 2002) Transferred to UBC.
 108. Tarek Sadek (M.Eng.) **Characterization and Modeling of Varactors in Silicon CMOS Technology** (September 2001 -January 2002), transferred to another group.
 109. Rami Al-Idrissi (M.Eng.) **Modeling of Passive Microwave Circuit Elements** (September 1999 -April 2001), Engineer, Saudi Arabia.
 110. 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.
 111. 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.
 112. M. Oulmane (Engineer's Diploma Thesis) **Noise Studies in MOSFETs** (Spring 1997 and 1998), Graduate student, McGill University.
 113. C.H. Chen (M.A.Sc.) **High Frequency Noise Modelling of MOSFETs** (September 1994-December 1997).
 114. Tim Hardy (M.A.Sc.) **Charge-Coupled Device Systems** (September 1994-August 1997), Engineer, NRC, Victoria.
 115. 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.
 116. 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).
 117. Yu Zhu (M.A.Sc.) **Low Frequency Noise in MOSFETs: Theory and Experiments** (January 1991 - July 1992) - Manager, Microsoft Corporation, Seattle, Washington.
 118. 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.
 119. 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.
 120. 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.
 121. X.M. Li (M.A.Sc.) **Hot Carrier Degradation Studies at the Si-SiO₂ Interface in Short Channel MOSFETs** (September 1989-May 1991) - Process Engineer, Rockwell International, Newport Beach, California.
 122. 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.
 123. 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

124. Jason Paquette, **Dissolved Oxygen Potentiostat System** (May – August 2011).
125. Ogonna Igwebe, **Dissolved Oxygen Potentiostat System** (May – August 2011).
126. Eric Monteiro, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
127. Steve Petryschuk, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
128. Josh Wellstood, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
129. Mehran Reza, **Electrotaxis – Experimental Studies** (September 2010- April 2011), co-supervised with Prof. Ravi Selvaganapathy.
130. Adeel Alam, **Integrated Temperature, Light and Humidity Monitoring System for the Hospital Environment** (Sep 2009 - April 2010).
131. Mohammad N. Arabi, **Towards a Non-Intrusive Pulse Oximeter System with Long-term Mobile Monitoring**, (Sep 2009 - April 2010).
132. Hanseul Choi, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the “c-shirt”**, (Sep 2009 - April 2010).
133. Winston De Armas, **Design of a Wireless, Non-invasive Long-term ECG Monitoring System for At-risk Patients**, (Sep 2009 - April 2010).
134. Sandra Escandor, **Applying Multivariate Normal Analysis in a Personal Vital Stats Monitor**, (Sep 2009 - April 2010).
135. Christoph Larndorfer, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the “c-shirt”**, (Sep 2009 - April 2010).
136. Emily Lukes, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the “c-shirt”**, (Sep 2009 - April 2010).
137. Dhvani Parekh, **Designing Heart rate, Blood Pressure and Body temperature Sensors for Mobile-On-call System**, (Sep 2009 - April 2010).
138. Reinhard Peer, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the “c-shirt”**, (Sep 2009 - April 2010).
139. Christina Tan, **Integrated Temperature, Light and Humidity Monitoring System for the Hospital Environment** (Sep 2009 - April 2010).
140. Kirsten Zernask-Cebek, **Mobile On-call: Design of a Non-invasive, Non-intrusive Personal Vital Signs Monitor**, (Sep 2009 - April 2010).
141. Adeel Alam, **Statistical Processing of Biomedical Data** (May – August 2009), co-supervised with Prof. Qiyin Fang.
142. Timea Maxim, **Biophotonics** (May – August 2009), co-supervised with Prof. Qiyin Fang.
143. David Zhitomirsky, **Reference Electrodes for Biosensors** (Summer 2008), co-supervised with Prof. Ravi Selvaganapathy.
144. Paul Quevado, **Biosensing Circuits** (Summer 2007).
145. Muayad Tarabain, **Ultra-wideband Circuits** (Summer 2007).
146. Mojtaba Hodjat-Shamami, **RF Integrated Circuits** (Summer 2007).
147. Siyan Tan, **Ultra-wideband Circuits** (Summer 2006).
148. James Mondry, **Fluorescence Imaging System** (Spring 2006).
149. Hamed Mazhab-Jaffari, **Wireless Imaging Circuits** (Summer 2004).
150. Omar Laldin, **Wireless Imaging Circuits** (Summer 2004).
151. Anirood Mehta, **Hearing-Aid Integrated Circuit** (Spring 2004).
152. Alan Chik, **Hearing-Aid Integrated Circuit** (Spring 2004), Engineer, Hong Kong.
153. Lyn Khine, **Radio Frequency Integrated Circuits** (Summer 2002, Summer 2003), Engineer, Singapore.
154. Wai Ngan, **Radio Frequency Integrated Circuits** (Summer 2001, Summer 2002, Summer 2003), Graduate Student, McMaster University..
155. Suzanne Cheng, **Parameter Extraction of MOSFETs** (Summer 2002), Engineer, Boeing Corp., Seattle, Washington.
156. Tim Norman (B.A.Sc.) **Modeling of Gated Lateral Bipolar Transistors** (May 1999 - December 1999), Engineer, MPR, Vancouver.
157. Miguel Urteaga (B.A.Sc.) **Modeling of Passive Microwave Circuit Elements** (May 1998-May 1999). Graduate Student, University of California, Santa Barbara.

158. 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.
159. Lalit Nathawad (B.A.Sc.) **Direct Extraction of AC Equivalent Circuit Parameters of Polysilicon Emitter Bipolar Transistors** (1996-1997), Ph.D. student, Stanford University.
160. Lonnell Peters (B.A.Sc.) **Circuit Applications Using the Gate-Controlled Lateral PNP Transistor** (1996-1997), Ph.D. student, University of Michigan, Ann Arbor.
161. V. Van (B.A.Sc.) **SPICE Modelling of Lateral PNP Bipolar Junction Transistors**, thesis completed in Summer 1995 - Assistant Professor, University of Alberta.
162. D. Liew (B.A.Sc.) **Implementation of a Two-Dimensional Lateral PNP Transistor Model in TSUPREM-4 and MEDICI**, Engineer, NRC, Vancouver.
163. W. Dall (B.A.Sc.) **Developing a High Speed Linear CCD Imaging System**, thesis completed in Summer 1995 - Electronic Engineer, CREO Products, Vancouver.
164. 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.
165. Nick Toth (B.A.Sc.) **Design of a Wide-Band IF Amplifier** (graduated in Summer 1994) - Design Engineer, Photon Systems Inc., Vancouver.
166. Anthony Ng (B.A.Sc.) **Methods for Measuring Electromigration Performance in VLSI Devices** (graduated in Spring 1991), Electron Systems Manager, Texas Instruments, Tustin, California.
167. 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.
168. 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.
169. 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.
170. Errol Samuelson (B.A.Sc.) **A Solid State Imaging System for Quantitative Microscopy** (graduated in Fall 1989) - Electronic Engineer, MPR Teletech, Burnaby, B.C.
171. 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.
172. 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 (from 1993 to present)

a) Support currently held			
Name of Investigator(s)	Title of Proposal, Funding Source and Program	Total Amount	Years
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)	<i>“Water Quality Research Platform in Urban and Urbanizing Watersheds”</i> , Ontario Research Fund.	\$8,853,561	2011-2017
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)	<i>“Southern Ontario Water Consortium”</i> , Federal Economic Development (FedDev) Agency for Southern Ontario.	\$19,580,000	2011-2014
Schellhorn (PI), Deen (Co-PI), Edge, Gupta, Selvaganapathy,	<i>“Integrated Low-cost, Real-time Monitoring of Ontario Recreational and Municipal Water Sources”</i> , Ontario	\$2,800,276	2011-2015

Fang, Howlader, Xu, Kirubarajan, Sekerinski, Wassying, Maibaum, Gregori	Research Fund.		
Deen, M.J.	<i>Advanced, High-performance Photodetectors and Imaging Systems</i> , Canada Research Chair (CRC), Govt. of Canada.	\$1,400,000	2008-2015
Deen, M.J.	<i>High Performance Optical Detectors and Imaging Systems for Emerging Applications</i> , NSERC Discovery Grant.	\$300,000	2010-2015
Selvaganapathy (PI), Deen and Schellhorn	<i>Portable Real-time Water Monitoring System</i> , 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	<i>Bioimaging Technologies for Enhanced Healthcare</i> , Canada-California Strategic Innovation Partnership (CCSIP) Grant	\$100,000 (US)	2009-2012
Deen (PI), Aitchison, Collins, Fang, Hranilovic, Karanassios, Karmali, LaPierre, Liu, Zhu	<i>Micro- and Nano-systems Laboratory</i> , CFI Institutional Operating Funds	\$1,277,017	2009-2014
Deen (PI), Aitchison, Collins, Fang, Hranilovic, Karanassios, Karmali, LaPierre, Liu, Zhu	<i>Micro- and Nano-systems Laboratory</i> , CFI, OMRI, Industries and McMaster Univ., Infrastructure Grant	\$13,119,817	2007-2011
b) Support held in the recent past			
Chen (PI), Deen, Nikolova, Li and Bakr	<i>Infrastructure For Noise Characterization of Sub-100nm MOSFETs at Microwave Frequencies</i> , NSERC Research Tools and Instruments Grant.	\$131,051	2010
Huang (PI), Li, Kumar, Deen and Chen	<i>Enabling Optoelectronic Technologies for Optical Access Applications</i> , NSERC Strategic Projects Grant	\$284,000 \$256,000 \$256,000	2009-2010 2008-2009 2007-2008
Deen, M.J.	<i>Advanced Photodetector Systems for Emerging Applications</i> , NSERC Discovery Grant.	\$355,000	2005-2010
Deen (PI) and Selvaganapathy	<i>BioFET Sensor System</i> , NRC-GHI Research Contract.	\$32,840	2009-2010
Iniguez (PI - Spain), Deen (Canada) and Estrada (Mexico)	<i>Techniques of Characterization and Modeling of Organic and Polymeric Devices for Plastic Microcircuits</i> , International Complementary Action Grant Number PCI2005-A7-0492, Spanish Ministry of Science	20,000 Euros	2006-2009
Deen (PI) and Selvaganapathy	<i>BioFET Sensor System</i> , NRC-GHI Research Contract.	\$50,000	2008-2009
Deen, M.J.	<i>Intelligent Multiple Antenna Structures for Adaptive Wireless Systems</i> , OMRI, ORF-RE Research Grant	\$112,000	2005-2009
Kleiman (PI), Thompson, Jessop, Haugen, Cassidy, Deen, Mascher, Preston, LaPierre, Xu, Knights	<i>Centre for Electrophotonic Materials and Devices</i> , NSERC Major Facilities Access Infrastructure Grant.	\$390,000	2005-2008
Deen, M.J.	<i>BioFET Sensor System</i> , NRC-GHI Research Contract.	\$72,300	2005-2008
Nikolova (PI), Chen and Deen	<i>Multi-Port 20-GHz Vector Network Analyzer</i> , NSERC Research Tools and Instruments Grant.	\$126,544	2007
Chen (PI), Deen, Li, Nikolova and Bakr	<i>Infrastructure For High-Frequency Noise Measurements of Sub-100nm MOSFETs</i> , NSERC Research Tools and Instruments Grant.	\$147,051	2007
LaPierre (PI), Thompson, Deen, Mascher, Kruse, Saravanamuttu and Knights	<i>Photoluminescence Equipment for Nanophotonic Systems</i> , NSERC Research Tools and Instruments Grant.	\$150,000	2007

Deen (PI) and Chen	<i>High Frequency Noise Characterization MOSFETs</i> , Sony Corporation Research Contract.	\$59,000	2005-2007
Deen, M.J.	<i>Optoelectronics Receivers</i> , Ontario Research and Development Challenge Fund (ORDCF).	\$290,000	2003-2007
Deen, M.J.	<i>Optical Detectors and Receivers</i> , Canada Research Chair (CRC), Govt. of Canada.	\$1,400,000	2001-2008
Knights (PI), Adronov, Deen, Kleiman, LaPierre, Thompson	<i>Low Temperature Hall Effect Measurement System</i> , NSERC Research Tools and Instruments Grant.	\$139,309	2006
Deen (PI) and Chen	<i>RF Noise Modeling and Design of Benchmark RFIC (LNA)</i> , RFMD Research Contract.	\$60,000	2005-2006
Deen (PI), Fang, Aitchison and Karanassios	<i>Towards a Miniaturized Fluorescence Based Diagnostic Imaging System</i> , OCE/CMM Grant.	\$200,000	2005-2006
Haddara (PI), Deen	<i>Improving Mobility and Reliability in Polymer FETs Through Control of Interface Properties and Morphology</i> , Materials and Manufacturing Ontario - Emerging Materials Knowledge	\$90,000	2004-2006
Deen, M.J.	<i>Radio Frequency Integrated Circuits for Transceiver Applications</i> , National Center of Excellence Micronet, NSERC eMPower, Gennum Research Grants.	\$99,000	2004-2005
Zhu (PI), Botton, Deen and Xu	<i>Studies of Materials Compatibility and Interfacial Interactions for Fabricating Low-Cost Plastic Thin Film Transistors</i> , NSERC CRD.	\$180,000	2003-2006
Deen, M.J.	<i>Radio Frequency Integrated Circuits for Transceiver Applications</i> , 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	<i>Centre for Electrophotonic Materials and Devices</i> , NSERC Major Facilities Access Infrastructure Grant	\$276,000	2002-2005
Deen, M.J.	<i>Radio Frequency Integrated Circuits for Transceiver Applications</i> , Micronet - National Center of Excellence, NSERC eMPower, Gennum, Philsar, RIM and Zarlink Research Grants.	\$188,000	2002-2003
Waterloo - Nathan (PI), Hayward, Karanassios, Mansour, Penlidis, Sazonov, Sivoththaman, Strong, McMaster - Deen, Toronto - Rowlands	<i>Giga-to-Nano Electronics Fabrication Facility for Wireless, Bio, Environment, and Medical Applications</i> , Canadian Foundation for Innovation (CFI), Ontario Innovation Trust (OIT) and Industry, Infrastructure Grant	\$14,796,358	2002
Deen, M.J.	<i>High Performance Photodetectors and Photoreceivers for Fiber Communications</i> , NSERC Research Grant.	\$210,000	2001-2005
Wong (PI), Bandler, Deen, Luo, Gershman, Huang and Szymanski	<i>Communications Technology Research Center</i> , Canadian Foundation for Innovation (CFI), Ontario Innovation Trust (OIT) and Industry, Infrastructure Grant	\$5,459,957	2001-2004
Deen, M.J.	<i>Optoelectronics Research Laboratory</i> , CFI, OIT, Industries and McMaster Univ., Infrastructure Grant	\$1,117,865	2001-2004
Deen, M.J.	<i>High Frequency Noise Modelling and the Design of High Frequency Circuits</i> , National Center of Excellence (NCE) Micronet and Mitel Research Grant.	\$34,500	2001-2002
Deen, M.J.	<i>High Frequency Noise Modeling and the Design of High Frequency Circuits</i> , Gennum Research Grant.	\$10,000	2000-2001
Deen, M.J.	<i>Microelectronic Low Frequency Noise and Reliability Characterization System</i> , NSERC Equipment Grant.	\$104,174	2000-2001
Deen	<i>Simulator for Advanced Optical Detectors Used in Telecommunications</i> , NSERC Strategic Grant.	\$160,500	1999-2002

Holdcroft (PI) and Deen	<i>Towards Plastic Field-Effect Transistors</i> , NSERC Strategic Grant.	\$309,000	1999-2002
Deen, M.J.	<i>Noise in Power Semiconductor Diodes</i> , D&V Electronics Research Grant.	\$27,000	1999-2000
Deen, M.J.	<i>Modeling and Applications of High Performance Semiconductor Devices and ICs</i> , NSERC Research Grant.	\$93,555	1998-2001
Deen, M.J.	<i>Characterization & Modeling of Passive & Active Components for Microwave Applications</i> , NSERC CRD Grant.	\$150,000	1998-2001
Deen, M.J.	<i>Characterization and Modeling of Passive and Active Components for Microwave Applications</i> , Nanowave Technology Grant to go with NSERC CRD grant.	\$75,000	1998-2001
Deen, M.J.	<i>High Frequency Modeling of MOS Transistors</i> , Rockwell Semiconductor Corporation Grant.	\$150,000	1997-2002
Deen, M.J.	<i>Characterization & Modeling of SAGCM APDs</i> , NSERC CRD Grant.	\$33,000 \$57,000	1996-1997 1997-1999
Deen, M.J.	<i>Characterization and Modeling of SAGCM APDs</i> , BNR Grant to go with NSERC CRD grant.	\$45,000	1996-1999
Deen, M.J.	<i>Low Frequency Noise in BJTs</i> , National Semiconductor Corporation Grant.	\$14,000	1997
Deen, M.J. (PI), Bolognesi, Stapleton and Watkins.	<i>Materials and Device Reliability Analysis System</i> , NSERC Equipment Grant.	\$73,736	1996-1997
Deen, M.J.	<i>High Frequency Noise Modelling and the Design of High Frequency Circuits</i> , NCE Micronet Research Grant.	\$196,000	1996-2001
Deen, M.J.	<i>High Frequency Noise Modeling and the Design of High Frequency Circuits</i> , Mitel Research Grants.	\$100,000	1996-2001
Hill, R. (PI) Deen, M.J.	<i>Chemical Vapor Deposition</i> , NSERC Strategic Grant.	\$259,500	1995-1998
Deen, M.J.	<i>Characterization, Modelling and Applications of Semiconductor Devices and Circuits</i> , Natural Science and Engineering Research Council (NSERC) Research Grant.	\$96,000	1993-1997

OTHER INFORMATION

Memberships - Engineering, Science or Professional Organizations:

Fellow (Foreign)	INAE, The Indian National Academy of Engineering
Fellow	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 - American Physical Society
Honorary Member	WIF – The World Innovation Foundation
Member	Eta Kappa Nu, Electrical Engineering Honor Society