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

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

Distinguished University Professor – McMaster University

Vice-President – North (Developed World), The World Academy of Sciences (2023-2026)

Director, Micro- & Nano-Systems Lab.; Canada Research Chair in Information Tech. (2001-22)

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

Department of Electrical and Computer Engineering, School of Biomedical Engineering

McMaster University, 1280 Main St. West, Hamilton, ON L8S 4K1, CANADA

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Personal Vision

As an educator, engineering scientist and lifelong student, I value creativity, focus and passion in teaching, research and service to accelerate my growth as a professor. Using my personal attributes of kindness and generosity embedded in a culture of inclusivity, professionalism and teamwork, I strive to help students, colleagues and collaborators achieve greater fulfilment in a balanced work-life framework. I believe that education, respect and perseverance are some of the key ingredients for a rewarding, happy and productive life.

EDUCATION - QUALIFICATIONS

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

ACADEMIC EXPERIENCE

Distinguished Univ. Prof.	2015 - present	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Canada Research Chair	2001 - 2022	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Professor	1999 - present	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Dist. Visiting Prof.	2017 - 2018	EEE Department	SUSTech, Shenzhen, China.
Senior Fellow	2014 - 2016	Institute for Advanced Studies	Hong Kong Univ Science and Technology.
Visiting Professor	Jun 14 - Jan15	Electronic & Computer Eng	Hong Kong Univ Science and Technology.
Dist. Visiting Prof.	2008 - 2013	Division of ITCE, WCU Program	POSTECH, Pohang, South Korea.
Guest Professor	Jan - July 2008	Fachgebiet Mikrowellentechnik	Technische Universitaet Berlin, Germany.
Associate Chair	2000 - 2003	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Associate Director	1995 - 1998	Engineering Science	Simon Fraser University, Vancouver, BC.
Visiting Professor	Summer 1997	Electrical Engineering	Delft Univ. of Technology, Nederland.
Professor	1993 - 2002	Engineering Science	Simon Fraser University, Vancouver, BC.
Associate Professor	1989 - 1993	Engineering Science	Simon Fraser University, Vancouver, BC.
Assistant Professor	1986 - 1989	Engineering Science	Simon Fraser University, Vancouver, BC.
Assistant Professor	1985 - 1986	Comp. Sci. & Elect. Eng.	Lehigh University, Bethlehem, PA, USA.

INDUSTRIAL OR NON-ACADEMIC EXPERIENCE

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

AWARDS/HONORS

Honorary Degrees & Fellowships/Membership in National Academies or Societies

Doctor Honoris Causa (DHC)	Institut National de la Recherche Scientifique (INRS), Québec, 13 May 2023.
Doctor - Honoris Causa (Dr-hc)	El Instituto Nacional de Astrofísica, Óptica y Electrónica, Puebla, Mexico, 11 Nov 16.
Doctor - Honoris Causa (Dr-hc)	Universitat Rovira i Virgili, Tarragona, Spain, 7 March 2014.
Doctor - Honoris Causa (Dr-hc)	Universdad de Granada, Granada, Spain, 25 May 2012.
Doctor of Engineering - Honoris Causa	University of Waterloo, Waterloo, Ontario, Canada, 18 June 2011.
Fellow	CSSE, The Canadian Society of Senior Engineers, 29 January 2023.
Fellow	TWAS, The World Academy of Sciences, 10 December 2019.
Academician (Foreign Member)	CAS, Chinese Academy of Sciences, 22 Nov 2019. **China's highest national honor in the area of science and technology and highest academic title.**
Academician (Member)	EASA, European Academy of Sciences and Arts, 10 July 2014.
Fellow (Foreign)	NASI, The National Academy of Sciences, India, October 2012.
Fellow (Foreign)	INAE, The Indian National Academy of Engineering, September 2007.
Fellow	CAE, The Canadian Academy of Engineering, April 2007.
Fellow	RSC, The Royal Society of Canada - The Academies of Arts, Humanities & Sciences of Canada, 2006. **Highest honor for scholars, artists & scientists in Canada**.
Fellow	APS, The American Physical Society, November 2008.
Fellow	AAAS, The American Assoc. for the Advancement of Science, Oct 2005.
Fellow	ECS, The Electrochemical Society, May 2004.
Fellow	EIC, The Engineering Institute of Canada, December 2003.
Fellow	IEEE, The Institute of Electrical and Electronic Engineers, November 2002.
Honorary Member	WIF, The World Innovation Foundation, May 2006. **Highest honor from WIF**.

International and National Awards and Honors

King Charles III Coronation Medal	Chancellery of Honours at Rideau Hall, Government of Canada
Simon M. Sze Education Award	IEEE Electron Devices Society, 14 November 2024.
Julian C. Smith Medal	EIC - Engineering Institute of Canada, 22 April 2023.
Technical Achievement Award	IEEE Technical Committee on Scalable Computing, 2022 – **Top award.**
C.C. Gotlieb Computer Award	IEEE Canada, 15 March 2022.
Technical Achievement Award	IEEE Technical Committee on Cyber-Physical Systems, 2020 – **Top award.**
Member	Order of Canada - 29 June 2018. **Highest Civilian Honor in Canada.**
Distinguished Visiting Fellowship Award	Royal Academy of Engineering, UK (University of Exeter), 2017.
PIFI Distinguished Scientist Award	Chinese Academy of Sciences, Beijing, 2017.
Overseas Academic Masters Scholar Award	Dalian University of Technology, Dalian, China, 2017.
Ham Outstanding Engineering Educator Award	IEEE Canada, 5 May 2014 – **Top award for Education & Teaching.**
Vice-Chancellor's Award	The University of the West Indies, 11 May 2013.
AGL McNaughton Gold Medal	IEEE Canada, 6 May 2013 **– Top Award for Engineers**.
Fessenden Silver Medal	IEEE Canada, 9 May 2011.
Electronics and Photonics Division Award	Electrochemical Society, 1 May 2011.
Science and Technology Award	New Pioneers Awards, Toronto, Canada, 25 February 2010.
Eadie Medal	The Royal Society of Canada, July 2008 **– RSC only Engineering Award**.
Technology Achievement Award	ICCC – Indo-Canada Chamber of Commerce, June 2009.

Guyana Award – Academic Excellence	Guyana Awards Council - Canada, May 2008.
Humboldt Research Award	Alexander von Humboldt Foundation, April 2006.
IBM Faculty Award	IBM Corporation, USA, 2006.
Distinguished Lecturer	IEEE - Electron Device Society, 2002 - present.
Thomas D. Callinan Award	Electrochemical Soc. – Dielectric Science & Technology Div., 2002.
Canada Research Chair	Government of Canada, 2001 - 2022.

Scholastic Awards

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

Other Competitive Awards for Research, Education and Service

Instructor Award	Electrical & Computer Eng. Department, McMaster University, May 2024.
Service Award	Electrical & Computer Eng. Department, McMaster University, 14 April 2023.
MUFA Award for Outstanding Service	McMaster University Faculty Association (MUFA), 20 March 2023.
MSU Macademics' Lifetime Achievement Award	McMaster Student Union (MSU), McMaster University, 7 April 2022.
President's Award for Excellence in Graduate Supervision	Graduate Student Recognition Awards (Engineering Winner), McMaster University, 10 December 2021.
Honorary Professor	Huazhong University of Science and Technology, Wuhan China, January 2019, Lifetime appointment.
Honorary Professor	Beihang University, Beijing, China, June 2018, Lifetime appointment.
National Distinguished Professor	Univ of Electronic Sci & Tech of China, Chengdu, China, Oct '18 – Sep '21.
Honorary Professor	Xidian University, Xi'an, China, September 2017 -August 2020.
Distinguished Visiting Professor	Huazhong Univ. Science & Technology, Wuhan, China, April-May 2019, April-May 2018, April - May 2017, April - May 2016.
Honorary Professor	Shanghai University, Shanghai, China, 2015 - 2018.
Càtedres d'Excellència	Universitat Rovira I Virgili (URV), Tarragona, Spain, Feb - March 2016.
Distinguished Visiting Professor	Univ of Electronic Science & Tech, Chengdu, China, Dec 2015 – Dec 2018.
Guest Professor	Jiang Nan University, Wuxi, China, 2014 - 2016.
Winegard Lecturer	University of Guelph, 10 May 2013.
Engineering Research Award	McMaster University, 8 May 2013.
Royal Soc. of Canada Keynote Lecturer	Canadian Congress of Applied Mechanics – CANCAM, 6 June 2011.
Càtedres d'Excellència	Universitat Rovira I Virgili (URV), Tarragona, Spain, Jan - March 2011.
Bao Yu-gang Chair Professorship	Zhejiang University, Zhejiang, China, August 2009 – for 9 years.
NSERC Senior Industrial Fellow	Device Technology (P813), Northern Telecom, Ottawa, 1993.
Listed in	Canadian Who's Who, from '07, Academic Keys Who's Who in Higher Educ. Eng., from '06. & Amer Men & Women of Sc, from Feb 1989.
Distinguished Researcher Award	Province of Ontario, July 2001.

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

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

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

Best Paper/Poster/Presentation Awards

Best Presentation Award	The 2024 IEEE AI+ Congress, Sanya, Hainan, China, 18 December 2024.
Best Paper Award	IEEE Global Communications Conference, 4-8 Dec 2023, Kuala Lumpur, Malaysia.
Best Presentation Award	The 29th Int. Conf. on Computational & Experimental Engineering and Sciences, Shenzhen, China, 28 May 2023.
2021 Best Paper Award	IEEE Transactions on Sustainable Computing, IEEE Computer Society
Best Presentation Award	2022 IEEE Hyper-Intelligence Congress, Chengdu, China, 18 December 2022.
Best Presentation Award	2019 IEEE HPCC/Smart City/DSS 2019 - 21st Int'l Conf on High Performance Computing and Communications / 17th Int' Conf. on Smart City / 5th Int'l Conf. on Data Science and Systems), Zhangjiajie, China, 10 Aug 2019.
Best Presentation Award	2019 APEC Innovation Dialog Forum, Huzhou, China, 14 May 2019.
Best Presentation Award	IEEE Int'l Congress on Cybermatics, Halifax, NS, Canada, 30 Jul – 3 Aug 2018.
Best Presentation Award	The 2017 Int'l Conf. on Computer, Information and Telecommunication Systems (CITS - 2017), Dalian, China, 21 - 23 July 2017.
Best Congress Keynote Speech Award	The 2017 World Cybermatics Congress, Chengdu, China, 16 - 19 Dec 2016.
Best Presentation Award	The 2016 Int'l Conf. on Smart X, Dalian, China, 29 - 31 July 2016.
Best Presentation Award	IEEE Int. Conf. on Smart City – IEEE Smart City 2015, 19 - 21 Dec 2015.
Best Presentation Award	IEEE Int. Sym. Future Inf & Com Tech for U-Healthcare, 28-30 May 2015.
Best Keynote Speech Award	17th IEEE Int'l Conf. on Computational Sci. & Eng., 19 - 21 Dec 2014.
Best Poster Award - Autonomics	4th Int. Symposium on IT Convergence Engineering, 12 - 13 July 2012.
Best Poster Award – Nanosensors	4th Int. Symposium on IT Convergence Engineering, 12 - 13 July 2012.
Best Poster Award - Autonomics	3rd Int. Symposium on IT Convergence Engineering, 14 - 15 July 2011.
Best Poster Award – Nanosensors	3rd Int. Symposium on IT Convergence Engineering, 14 - 15 July 2011.
Best Poster Award - Autonomics	2nd Int. Symposium on IT Convergence Engineering, 19 - 20 Aug. 2010.
Outstanding Student Paper Award	IEEE Electron Devices Society's 2006-07 Region 9 Competition, 2008.
Premium Award	The Institution of Engineering Technology (formerly IEE), 2007.
Best Student Poster Paper Award	Annual Micronet Workshop, Ottawa, Canada, May 2005.
Best Paper Award	The Institution of Engineering Technology (formerly IEE), 2004.
Best Student Paper Award	IEEE Canadian Conf. on Electrical & Computer Engineering, 2004.
Best Student Paper Award	SPIE Conference on Noise in Devices and Circuits, 2003.
Best Invited Paper Award	IEEE Custom Integrated Circuits Conference, 2002.

Citation for Order of Canada – Highest Civilian Honor in Canada

► Member, Order of Canada – 29 June 2018.

https://www.eng.mcmaster.ca/news/engineering-distinguished-university-professor-recognized-as-a-member-of-the-order-of-canada/

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

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

Citations for Honorary Degrees and Fellowships

►Doctor Honoris Causa, Institut National de la Recherche Scientifique (INRS), Université de Québec, 13 May 2023.

Criterion: In recognition of his high degree of excellence in his academic career.

Short Citation: "In recognition of his outstanding contribution both in his teaching activities and in the high degree of excellence of his scientific career." https://inrs.ca/en/news/inrs-celebrates-the-careers-of-two-eminent-researchers/

Partial Long Citation from Directeur Générale de l'INRS (Dr. Luc-Alain Giraldeau): "Dr. Deen is one of those people whose journey is so vast and rich that it is hard to believe that it fits in a single existence. ... A world leader in the fields of nanoelectronics, optoelectronics, nanotechnology, data analysis and their emerging applications, this exceptional being stands out as a scientist, an educator and a citizen. His formidable career, driven by an insatiable thirst for learning, is the basis of decisive breakthroughs in the areas of research that fascinate him. In addition, Professor Deen's willingness to act at all times by prioritizing the well-being of those around him makes him a rare source of inspiration. …

The list of scientific and technological advances attributable to Professor Deen's pioneering experiments is staggering. Some of his findings relate more to the theoretical aspects of basic science in the analysis, modeling and applications of high-performance semiconductor devices and integrated circuits. Others translate into very concrete applications in areas that affect health and medical care, telecommunications, the environment and personal safety. …

The kindness, generosity and integrity of Jamal Deen make him a teacher, a colleague and an expert greatly respected by all. His sure opinion serves as a reference in all the circles in which he gravitates. He has also acted as a key resource within several organizations that oversee education and the world of knowledge, other government or related to the industry that affects his field of expertise. Thus, Professor Deen has chaired some national grant committees as well as funding committees for research purposes. He was also President of the Academy of Sciences of the Royal Society of Canada. In addition, he was a visiting scientist at the Herzberg Institute of Astrophysics of the National Research Center of Canada and Director of Research at the French National Center for Scientific Research (CNRS) in Grenoble and at the CNRS in Montpellier.

He is also the prolific author of a vast number of articles, reference works and book chapters. Not to mention an impressive number of presentations and conference talks with often award-winning presentations and papers.

That said, all of these accomplishments would mean nothing to Jamal Deen if they didn't have a positive impact on others. The usefulness of his work begins with the doors he opens for others. The altruism that characterizes Professor Deen primarily benefits his students and the researchers in his team, whom he supervises with exceptional dedication and attention. Having their professional development as much as their personal well-being at heart, he continues to follow their journey as many in turn embrace prolific careers.

A champion of equity, diversity and inclusion, Professor Deen also sets up mentoring programs that support accessibility to knowledge and education, particularly among minorities and disadvantaged people. . An ardent promoter of values such as empathy, justice, respect and gratitude, he does not fail to call upon them as a citizen as well. Thus, the volunteer involvements through which he demonstrates constant support for his community are abundant.

Jamal Deen's breathtaking journey has been recognized by an untold amount of academic and civic honours. Among a few are the Thomas D. Callinan Award and the Electronics and Photonics Division of the Electrochemical Society, a Research Award from the Alexander von Humboldt Foundation, the Thomas W. Eadie Medal from the Royal Society of Canada, the A.G.L. McNaughton Gold Medal, the R.A. Fessenden Medal and the Ham Medal for being an Outstanding Engineering Educator, all from the Institute of Electrical and Electronic Engineers of Canada. Additionally, Jamal Deen was elected by his peers from thirteen national academies and learned societies including the Royal Society of Canada, Chinese Academy of Sciences, World Academy of Sciences, Canadian Academy of Engineering and Indian National Academy of Engineering, in addition to being an honorary member of the World Innovation Forum and a member of the Order of Canada.

Finally, a particularly touching reward was offered to Jamal Deen in 2022 at the INRS graduation ceremony when, following in his footsteps, his son Imran, obtained his doctoral degree in Materials Engineering.

For the masterful way in which he has pushed back the boundaries in his field of expertise and for the exemplary model he represents, INRS is delighted to pay tribute to Jamal Deen by awarding him this honorary doctorate. Congratulations!"

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

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

The nominator of Dr. Deen for this award, Prof. Edmundo Gutierrez, El Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), stated that "Dr. Deen is a dynamic and very wide open-minded researcher who has taught me the importance of establishing international research collaboration and strengthen a team-working strategy. One of the invaluable aspects of his

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

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

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

The Rector (equivalent to University President in Canada), Professor Frances Xavier Grau Vidal stated "The investiture ceremony of an honorary degree is the highest solemnity to the university community. With this event we integrate into our faculty those who have distinguished themselves by their activity in favor of the arts, culture, science, or simply, humanity, and this event also preserves the liturgy that evokes the crucial role that for centuries the university has had in society, the development of which preserves and advances knowledge and transmits it to new generations. Through this recognition, which is selective and judicious, the University is also defined. … Professor Benjamin Iñíguez has revealed in his laudatio all the academic and scientific merits that make Prof. Jamal Deen deserving of the highest academic distinction awarded by the University and that we have seen in the lectio magistralis that Dr. Deen has delivered. It is an honor and a privilege to welcome Prof. Jamal Deen into our Faculty, and I do it with pleasure, both personally and on behalf of all members of the University."

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

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

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

Short Citation: Jamal Deen, a McMaster University professor and senior Canada research chair in information technology, will receive a Doctor of Engineering degree and address convocation. A highly accomplished researcher, inventor and scholar, Deen's prolific research has helped McMaster become a major centre for innovation and cutting-edge research in opto-

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

► Fellow, The Canadian Society of Senior Engineers (CSSE), 29 January 2023.

Citation: "In recognition of excellence in engineering and for services rendered to the profession and to Canada".

Longer Citation: After his studies at various Universities around the world he set out to pursue his roles as a researcher and educator of science and engineering students. Dr Deen is a Distinguished University Professor at McMaster University where he is currently the Director of the Micro- and Nano Systems Lab. Dr Deen has been widely acclaimed for his outstanding research and as a global leader in the fields of electrical engineering and applied physics. Throughout his career he has received numerous awards, including his 2018 Order of Canada Award. Dr Deen has held numerous academic and professional leadership positions in electrical engineering institutions, notably as President of the Academy of Science of the Royal Society of Canada. Dr Deen is well known for his inspired teaching as well his outreach and contributions to industrial laboratories for the benefit of Canadian society. http://www.indocaribbeanworld.com/archives/ICWMay03-23.pdf (page 5).

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

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

► Academician (Foreign Member), Chinese Academy of Sciences, November 2019 (China's highest national honor in the area of science and technology and highest academic title).

https://www.eng.mcmaster.ca/news/jamal-deen-receives-chinas-highest-academic-honour-in-science-and-technology/

Partial Citation: Dr. MJ Deen is a Distinguished University Professor (**highest rank of a Professor in a Canadian University**), Senior Canada Research Chair in Information Technology, and Director of the Micro- and Nano-Systems Laboratory, McMaster University. He received the Ph.D. degree in electrical engineering and applied physics from Case Western Reserve University, USA. His Ph.D. dissertation was on the design and modeling of a new CARS spectrometer for dynamic temperature measurements and combustion optimization in rocket and jet engines, and was sponsored and used by NASA, Cleveland, USA. … As an undergraduate student at the University of Guyana, he was the top ranked mathematics and physics student and the second ranked student at the university, winning the Chancellor's gold medal and the Irving Adler prize. As a graduate student, he was a Fulbright-Laspau Scholar and an American Vacuum Society Scholar. He is a Distinguished Lecturer of the IEEE Electron Devices Society for more than a decade and a half. His awards and honours include the Callinan Award as well as the Electronics and Photonics Award from the Electrochemical Society; the Distinguished Researcher Award from the Province of Ontario; a Humboldt Research Award from the Alexander von Humboldt Foundation; the Eadie Medal from the Royal Society of Canada; the McNaughton Gold Medal (**highest award for engineers**), the Fessenden Medal and the Ham Education Medal, all from IEEE Canada. In addition, he was awarded four honorary doctorate degrees in recognition of his exceptional research and scholarly accomplishments, professionalism and service. He is elected by his peers to Fellow status in ten national academies and professional societies including The Royal Society of Canada - The Academies of Arts, Humanities and Sciences (**the highest honour for academics, scholars and artists in Canada**), Institute of Electrical and Electronic Engineers (largest professional society in the world), American Physical Society and Electrochemical Society. Most recently, he was appointed to the Order of Canada, the **highest civilian honor in Canada from the National Government**. He served as the elected **President of the Academy of Science**, The Royal Society of Canada from 2015 to 2017 and is now serving as the Past President (2017-2019). As a research scholar, three examples of Dr. Deen's major research accomplishments are given.

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

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

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

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

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

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

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

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

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

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

Citation: Professor MJ Deen, McMaster University, is internationally recognized for his outstanding and seminal

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

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

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

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

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

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

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

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

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

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

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

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

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

Citations/Details for Some Other Awards

► King Charles III Coronation Medal, Chancellery of Honours at Rideau Hall, Government of Canada, 27 Jan 2025.

Citation: "In recognition of your exceptional and sustained contributions to the mission and goals of the Royal Society of Canada." **Criteria:** Eligible candidates must have made a significant contribution to Canada or to a particular province, territory, region or community of Canada, or have made an outstanding achievement abroad that brings credit to Canada.

https://www.eng.mcmaster.ca/ece/news/distinguished-university-professor-jamal-deen-recognized-with-two-prestigious-honours/

► Simon M. Sze Education Award, IEEE Electron Devices Society, 14 November 2024.

Citation: "For impactful leadership and global dissemination of biosensor education in underprivileged regions."

Details: This is the Society's highest honor to recognize distinguished contributions to education within the field of interest of the IEEE Electron Devices Society. **Basis for judging:** Teaching awards, evaluations by students, curriculum and course development, effectiveness as an educator supported by a list of students who have become recognized for their contributions to electron devices, innovative undergraduate, graduate, industrial and government programs, textbooks, innovative continuing education programs, innovative industrial and government education programs, and participation and contributions to the EDS Distinguished Lecturer program. http://indocaribbeanworld.com/latest/ICWJan22-2025.pdf (page 5) and https://www.eng.mcmaster.ca/ece/news/distinguished-university-professor-jamal-deen-recognized-with-two-prestigious-honours/

► MUFA Award for Outstanding Service, McMaster University Faculty Association (MUFA), 26 April 2023.

Award - Purpose: The purpose of the MUFA Award for Outstanding Service is to provide annual recognition1 for faculty and professional librarians who have made an outstanding contribution to the mission of the University through the provision of exceptional service to faculty, librarians, staff and/or students. **Criteria:** The Awards Committee, comprised of faculty,

staff, librarians, and students, considered how much the nominated candidate had affected the University, enhanced its reputation, provided excellent service, and demonstrated innovation. They also considered the breadth and depth of the candidate's impact on the University, and the strength of support expressed in the nomination and reference letters.

https://macfaculty.mcmaster.ca/app/uploads/2023/05/202305Newsletter.pdf (page 7)

http://www.indocaribbeanworld.com/archives/ICWMay03-23.pdf (page 5).

Citation: "Dr Jamal Deen has made impressively deep, broad, and sustained service contributions throughout McMaster and beyond since he joined McMaster's Department of Electrical & Computer Engineering in 1999. His service to the scientific community includes participation on grant committees for NSERC Discovery, RTI and Major Facilities awards and building and directing the Micro/Nano -Systems Labs, which hosts around 70 faculty and students each year.

In addition to being a stellar researcher and role model, Dr Deen has devoted much of his time to supporting the careers of colleagues and students. He has served as Honorary Co-Chair of the African Caribbean Faculty Association of McMaster (ACFAM) and Chair of the ACFAM Mentoring Program. Dr Deen has been an inspiring mentor to many Black and racialized students at McMaster, and throughout Canada as a Mentor in the Canadian Black Scientists Network. He co-authored the proposal leading to McMaster's successful Black Academic Excellence Cohort Hiring Initiative. His mentoring of graduate students was recognized by the 2022 MSU Macademics' Lifetime Achievement Award and by the 2021 President's Award for Excellence in Graduate Supervision.

Collectively, his contributions demonstrate that Jamal has enriched the McMaster community far beyond his own research discipline and department. He exemplifies the contributions the MUFA Outstanding Service Award is intended to recognize. On behalf of the 2023 MUFA Service Award Committee, it is a great honour to present this award to Dr Jamal

Deen in recognition of his distinguished record of service to the University."

► Julian C. Smith Medal, EIC - Engineering Institute of Canada, 22 April 2023

Citation: "For his remarkable achievements in the development of Canada."

https://eic-ici.ca/wp-content/uploads/2022/12/EIC-News-Release-re-2023-Award-Recipients-15-Dec-2022.pdf

http://www.indocaribbeanworld.com/archives/ICWMay03-23.pdf (page 5).

Longer citation: "Dr. Jamal Deen is Distinguished University Professor and Director of the Micro- and Nano Systems Laboratory at McMaster University. His award-winning, world-class research in nano-/opto-electronics and data analytics in partnership with over 20 Canadian R8D companies has paved the way for high-performance devices and systems in information and communication technologies, and healthcare and environmental sciences.

This research and development is crucial for Canada's future as a world leader in technologies for information and communication systems, and low-cost, user-friendly systems for health and environmental monitoring. His research leadership has raised McMaster's national and international visibility reputation and recognition to an unprecedented level.

At the national level. his impact is highlighted through peer recognitions including his induction as Fellow of the Engineering Institute of Canada, the Canadian Academy of Engineering, the Roval Society of Canada, and the receipt of numerous awards and honors such as the Eadie Meda(Royal Society of Canada), the lEEE McNaughton Gold Medal, IEEE Fessenden Silver Medal, IEEE Gotlieb Computer Award and Doctor of Engineering - Honoris Causa from University of Waterloo. alongside many international awards."

► Technical Achievement Award, IEEE Technical Committee on Scalable Computing (TCSC), 2022.

Citation: This award is "for significant and sustained contributions to the scalable computing community through the IEEE Technical Committee on Scalable Computing (TCSC), coupled with an outstanding record of high quality and high impact research." The award citation: "For contributions on efficient scalable computing technologies for cyber-physical systems". http://www.ieee-tcsc.org/achievement.php

► MSU Macademics' Lifetime Achievement Award, McMaster University, 7 April 2022.

Criterion: At McMaster University, the Lifetime Achievement Award is one award that may be awarded annually "to a professor who has demonstrated an exceptional dedication to teaching at McMaster for a minimum of ten (10) years, as well as significant contribution to student life, the community at large, and/or academia".

Quote from Director of Biomedical Engineering "Dr. Deen is currently a Distinguished University Professor and a Senior Canada Research Chair in information technology and a world-class researcher. Even though he has an incredibly busy schedule with diverse range of education, research and service activities world-wide, he places primary importance on his teaching and interactions with students, devoting considerable time, effort and knowledge in motivating them to excel in their areas of studies, research and life. He is one of the few professors I know who regards his primary function as educating the next generation of talents to become valued contributors for the betterment of society. He does this through his inspirational and engaging teaching and learning; world-class societally relevant research – some of which he incorporates into teaching; and his valued exemplary services to academia, the profession and society." https://www.eng.mcmaster.ca/news/meet-two-

mac-eng-recipients-msu-teaching-awards-jamal-deen-and-anna-korol

► C.C. Gotlieb Computer Award, IEEE Canada, 15 March 2022.

Citation: "For exceptional contributions to foundational technologies for cyber physical systems and data analytics." https://www.eng.mcmaster.ca/news/prestigious-ieee-canada-medal-awarded-jamal-deen, https://dailynews.mcmaster.ca/articles/engineering-professor-jamal-deen-awarded-prestigious-ieee-canada-medal/ and https://www.ieee.ca/en/awards/member-awards/recipients-c-c-gotlieb-computer-award/

► President's Award for Excellence in Graduate Supervision, McMaster University, 10 December 2021.

Citation: The award citation: "In recognition of the inspiration, guidance and motivation they have provided to graduate students." **Quote from Nominator** "Dr. Deen is among the few professors who is a coach, mentor and role model, all rolled in one person. His open-door policy and accessibility, constructive and timely feedback in a polite and respectful manner are qualities that we, his students, really treasure. As a guide, Dr. Deen mentors his students to excel not only as researchers, but also as moral and ethical human beings." https://www.eng.mcmaster.ca/news/celebrating-mac-eng-recipients-2021-graduate-student-recognition-awards and https://mcmaster.kudoboard.com/boards/FED3JGzw/gradsupervision

► Technical Achievement Award, IEEE Technical Committee on Cyber-Physical Systems (TCCPS), 2020.

Citation: This award is "For exceptional contributions to foundational technologies for cyber physical systems." The award citation: "Recognizes significant and sustained contributions to the **c**yber-**p**hysical **s**ystem (CPS) based on the impact of high-quality research made by the awardee throughout the lifetime." http://www.cse.cuhk.edu.hk/~byu/TC-CCPS/award.html

► Honorary Professor, XiDian University, China, September 2017 – August 2020.

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

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

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

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

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

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

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

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

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

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

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

► Distinguished University Professor, McMaster University, April 2015.

Criteria: "This title will be conferred only on faculty members who have demonstrated distinction and impact well beyond McMaster in one or more fields of endeavour, sustained over a period time, with a particular emphasis on success achieved while on faculty at the university. In keeping with McMaster's position as a research-intensive university of global repute those holding the title of Distinguished University Professor must have demonstrated an outstanding and sustained research record that demonstrates international impact and recognition. However, this award is also meant to recognize the complete scholar. Thus, the ideal candidate will have additionally demonstrated a sustained record of excellence and/or innovation in teaching and learning, including the supervision of emerging scholars along with a demonstrated history of service that has had an impact on the community, whether within or without the university."
https://secretariat.mcmaster.ca/app/uploads/2019/02/Distinguished-University-Professor.pdf
https://dailynews.mcmaster.ca/articles/five-faculty-members-earn-universitys-highest-honour/

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

Conference Details: The 17th IEEE International Conference on Computational Science & Engineering (CSE 2014) was held together with three other international conferences – 13th IEEE International Conference Ubiquitous Computing and Communications (*IUCC* 2014), 13th International Symposium on Pervasive Systems, Algorithms, and Networks (*I-SPAN* 2014) and 8th International Conference on Frontier of Computer Science and Technology (*FCST* 2014). The 2014 conference

covered bio-inspired computing, scientific and engineering computing, big data, cloud computing, mobile computing, embedded and ubiquitous computing, distributed and parallel computing, and the use of technologies of computing and communications to improve the quality of human life. The conferences had 1079 submissions, of which 335 papers were accepted, including 8 keynote papers for the four conferences. The best keynote speech award was for my presentation on ***"Smart Home Technologies Towards Better Healthcare."***

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

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

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

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

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

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

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

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

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

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

https://dailynews.mcmaster.ca/articles/engineering-professor-honoured-four-times-in-one-week/

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

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

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

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

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

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

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

Full Citation: "Dr. Jamal Deen immigrated to Canada in 1986 with his wife and a 4-month old son, accepting a demanding job as an Assistant Professor at Simon Fraser University, shortly after completing his graduate studies. Originally from Guyana, Dr. Deen felt alone in Vancouver as there was only a small Guyanese community. Fortunately, since multiculturalism is encouraged and valued in Canada, Dr. Deen handled these challenges well by linking with other communities, but without losing his identity. Professionally, Dr. Deen faced challenges in attracting funding to establish a high-quality research program since he did not have a track-record in Canada. As well, it was difficult recruiting students for a new graduate engineering program. Dr. Deen's remarkable successes in overcoming these challenges, coupled with his exceptional teaching and research credentials, led to his early promotion through the professional ranks to Full Professor in record time – just after his sixth year of appointment.

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

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

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

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

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

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

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

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

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

Award Criteria: In recognition of his record as "a Technology Achiever who has demonstrated achievements in business product, a record of innovation, established a high profile in the Canadian and the global business community; has strong leadership skills and has contributed to the community." https://dailynews.mcmaster.ca/articles/professors-recognized-by-indo-canada-community/

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

Citation: "Dr. MJ 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." https://acfam.mcmaster.ca/engineering-professor-receives-academic-excellence-award/

► 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).

RESEARCH

Research and Technology Development

Vision: Develop low-cost, environmentally-friendly and societally-relevant engineered solutions to pressing problems, thus empowering all people to achieve their full potential and become valued contributors to our global society.

Mission: Use biotechnology, information technology, nanotechnology and smart data analytics to develop better imaging and sensing systems for improved healthcare, and safe drinking water and packaged food. Recognize that research success and top-ranking require skills in both solving major problems and in timely and effectively communicating the results.

Five Guiding Principles in Coaching Researchers for Fulfilling Futures

Guide towards becoming leaders engaged in fruitful and fulfilling knowledge creation and discoveries.

Inspire so they maintain their passion, enthusiasm and perseverance.

Encourage and coach to become effective, honest communicators – written and oral to various types of audiences.

Teach respect, compassion and humility.

Create an environment to grow intellectually as well as personally.

Research Interests and One Measure

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

A Measure of Research Impact: H-index ~ 85, Citations ~ 30,700 (Google Scholar, Jan '25)

Career Publication Record

Books, Edited Books/Conference Proceedings, & Book Chapters: 50

- Authored/Edited Books or Conference Proceedings 25
- Invited Book Chapters 19
- Contributed Book Chapters 6

Patents (six have been extensively used in industry): 13

Refereed Journal Publications: 449

- Invited Journal Papers – 48; Journal Papers - 401

Refereed Conference Publications: 502

- Plenary, Keynote or Invited Refereed Conference Publications 226
- Contributed Conference Papers 276

Commissioned Technical Reports: 64

Authored/Edited Books and Conference Proceedings

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

1. S Kumar and MJ Deen, **Fiber Optic Communications: Fundamentals and Applications**, John Wiley and Sons Ltd.,

ISBN: 978-0-470-51867-0, 552 pages (April 2014).

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

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

Key Features:

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

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

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

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

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

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

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

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

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

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

   Contents: RF MOS Measurements; MOSFET Modeling and Parameter Extraction for RF IC's; MOSFET Modeling for

RF IC Design; RF CMOS Noise Characterization and Modeling; SOI CMOS Transistors for RF and Microwave Applications; and RF CMOS Reliability.

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

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

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

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

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

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Keynote, Plenary or Invited Conference Papers

- **Total Plenary, Keynote, Invited Refereed and Contributed Conference Publications – 272**
- **Total Plenary, Keynote, Invited Refereed Conference Publications – 111**

1. **Keynote Paper**, MJ Deen, "*Brain-inspired Cognitive Dynamic Systems for Engineering and Health Applications*," **The 1st International Symposium on Frontier Simulation Technologies**, 2 pages, Hangzhou, China, (22 Dec 2024).
2. **Best Presentation Award - Opening Keynote Paper**, MJ Deen, "*Brain-inspired Cognitive Dynamic Systems for Engineering and Health Applications*," **The 2024 IEEE AI+ Congress**, 2 pages, Sanya, China, (18 Dec 2024). https://ieee-aiplus.org/2024/keynotes.php
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5. **Opening Keynote Paper**, MJ Deen, "*High-performance Nano-Optoelectronic Systems for Healthcare Applications*," **10th IEEE Int'l Conference on Next Generation Electronics** (ISNE2023), Wuxi, China, 2 pages (12-14 May 2023).
6. **Keynote Paper**, MJ Deen, "*Smart Software-Enabled Sensing Systems for Ubiquitous-Healthcare*," **2023 IEEE Cybermatics Congress**, 2 pages, Ocean Flower Island, Hainan, China (18 Dec 2023). https://ieee-cybermatics.org/2023/keynotes.php
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13. **Keynote Paper,** T Mondal (Part I) and MJ Deen (Part II), "*Wearable Sensors and Systems with CVD Applications*," **The 14th IEEE Int Summer School and Symposium on Medical Devices and Biosensors** in conjunction with **The 12th Int School and Symposium on Biomedical and Health Engineering** and **The 1st Int Summit on Cerebro-Cardiovascular Health Engineering** (**MDBS-CHE' 2021**) **Hong Kong**, 2 pages (18-21 November 2021).
14. **Opening Keynote Paper,** MJ Deen, "*High-performance Nano-Optoelectronic Systems for Healthcare Applications*," **The 9th IEEE Int. Symp. on Next-Generation Electronics (ISNE 2021),** Changsha, China, 2 pages (10-11 July 2021).
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16. **Invited Paper,** MJ Deen, "*Smart Systems for Ubiquitous-Healthcare – AI is a Key Enabler*," **The 4th IEEE International Conference on Industrial Cyber-Physical Systems (ICPS) – *Industry Forum on "Digital Health"*,** Victoria, BC, Canada, 2 pages (10-12 May 2021).
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19. **Keynote Paper**, MJ Deen and AU Alam, "*Flexible Sensors – Materials, Interfaces and Surfaces*", Digest of **2019 6th International Workshop on Low Temperature Bonding for 3D Integration (LTB-3D 2019)**, pp. 108-115, Kanazawa, Ishikawa-Prefecture, Japan (May 21-25, 2019)

20. **Best Presentation Award - Opening Keynote Paper**, MJ Deen, "*Smart Sensors, IoT and Data Analytics – Research, Trends and Opportunities*," **The 2018 International Congress on Cybermatics** p. 9, Halifax, Nova Scotia, Canada (30 July – 3 August 2018).
21. **Opening Keynote Paper,** MJ Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities*," **IEEE Fifth International Conference on Enterprise Systems (ES 2017) – Industry 4.0 and Made in China 2025,** Tsinghua University, Beijing, China, p. 5 (22-24 September 2017).
22. **Opening Keynote Paper,** MJ Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities*," **International Academicians Forum - Made in China 2025 and Industry 4.0,** Yiwu, China, 1 page (19 Sep 2017).
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24. **Opening Plenary Paper,** MJ Deen, "*Low Frequency Noise in Semiconductor Devices – State-of-the-art and Future Perspectives*," **24th International Conference on Noise and Fluctuations (ICNF 2017)**, Vilnius, Lithuania, IEEE Conference Proceedings, 4 pages (20-23 June 2017).
25. **Best Presentation Award - Keynote Paper**, MJ Deen, *"Smart Sensors and Smart Home*: *State-of-the-Art and Future Perspectives*," **The 2016 World Cybermatics Congress (Cybermatics X 2016)**, Chengdu, China 2 pages (16-19 December 2016).
26. **Plenary Paper**, MJ Deen, "*Compact Modeling of Organic/Polymeric Thin Film Transistors - Past, Present and Future*", **7th International Conference on Computer Aided Design for Thin-Film Transistor Technologies (CAD-TFT),** Beijing, China, 2 pages (26-28 October 2016).
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30. **Plenary Paper**, MJ Deen, *"Unprecedented Vision: From Quantum Dots to Silicon Imagers*," **The 5th IEEE Int Conf on Computers and Devices for Communications** (**CODEC'15**), Kolkata, India, pp 4-5, (16-18 December 2015).
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32. **Keynote Paper**, MJ Deen, "*Smart Home Technologies for Smart Cities*," **The Twelfth International Conference on Ubiquitous Intelligence and Computing** (**UIC 2015**), Beijing, China, 2 pages (10-14 August 2015).
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38. **Keynote Paper**, MJ Deen, "*High-performance Integrated Circuits for Environmental and Biomedical Applications*," **IEEE TENCON 2014 – Leveraging Technology for a Better Tomorrow (IEEE Region 10 International Technical Conference)**, Bangkok, Thailand, 2 pages (22-25 October 2014).
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51. **Plenary Paper**, MJ Deen, "*CMOS Photodetectors and Imaging Systems for Biomedical Applications*,**" IEEE/SPIE 4th Int'l Conf. on Computers & Devices for Communications** (**CODEC**), Calcutta, India, 5 pages (14-16 Dec. 2009).
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Plenary, Keynote or Invited Conference Abstracts

- **Total Plenary, Keynote, Invited Refereed and Contributed Conference Abstracts – 230**
- **Total Plenary, Keynote, Invited Refereed Conference Abstracts – 115**

1. **Opening Invited Presentation,** MJ Deen, "*Social Computing – Convergence of Intelligent Technologies and Complex Social Systems*," **2023 Workshop on Social Intelligence,** Fudan University, Shanghai, China (12 September 2023).
2. **Invited Presentation,** MJ Deen and JAJ Tejada, "*Versatile Compact Modeling of Organic Thin-Film Transistors*," **13th IEEE International Conference on Computer-Aided Design for Thin Film Transistor (IEEE CAD-TFT 2022),** Qingdao, China, 1 page (19-20 August 2022).
3. **Opening Keynote Speech,** MJ Deen, "*Wearable Sensors for Ubiquitous-Healthcare and Active Aging*," **SMAP Public Symposium 2022,** McMaster University, Hamilton, Canada, 1 page (28 July 2022).
4. **Opening Keynote Presentation,** MJ Deen, "*High-performance Nano-Optoelectronic Systems for Healthcare Applications*," **XiDian University 111 Base Academic Workshop,** School of Microelectronics, XiDian University, Xian, China, 2 pages (22, 23, 26 & 26 November 2021).
5. **Opening Invited Presentation**, H Shanthanna, **MJ Deen** and A Nelson, "*Studying Aging, Mobility and Chronic Low Back Pain in Older Adults using Remote Monitoring*," **MIRA (McMaster Institute for Research on Aging) 2021 Labarge Catalyst Grant Symposium,** 1 page, McMasster University, Hamilton, Canada (Friday 29 October 2021).
6. **Opening Keynote Paper**, MJ Deen, "*Smart Sensors and Smart Homes for Ubiquitous-Healthcare*," **8th International Conference on Digital Home (ICDH 2020),** page 1, Dalian, China (Monday 21 September 2020).
7. **Invited Paper**, MJ Deen, "*Cyber Science and Technology – Some Trends and Opportunities*," **Workshop at Institute of Cyber Science and Technology (ICST)**, Shanghai Jiaotong University, 3 pages, China (Fri 3 Jan 2020).
8. **Opening Keynote Paper**, MJ Deen, "*Sensing Technologies for Ubiquitous Healthcare*," **7th International Conf. on Computers and Devices for Communication (CODEC 2019),** page 1, Kolkata, India (Thur 19 December 2019).
9. **Opening Keynote Paper**, MJ Deen, "*Smart Sensors and Smart Homes for Ubiquitous Healthcare – AI is a Key Enabler*," **2019 Guangdong-Hong Kong-Macao Greater Bay Area International Summit – "Focusing on EDA & Modeling Initiative Program",** 1 page, Shenzhen, China (Sunday 15 December 2019).
10. **Opening Keynote Paper**, MJ Deen, "*Bioimagers – Having Fun at the Intersection of Engineering and Sciences*," **2019 International Academicians Summit,** 1 page, Chengdu, China (Tuesday 15 October 2019).
11. **Keynote Paper**, MJ Deen, "*Smart Sensors for Water Quality Monitoring Applications*," **2019 Smart China Expo –**

"Smart Agriculture Forum", 1 page, Chongqing, China (27 August 2019).

12. **Best Presentation Award - Opening Keynote Paper**, MJ Deen, "*Smart Sensors and Data Analytics for Ubiquitous Healthcare*," **2019 IEEE HPCC/Smart City/DSS 2019 (21st International Conference High Performance Computing and Communications / 17th International Conference on Smart City / 5th International Conference on Data Science and Systems)**, p. 11, Zhangjiajie, China, (10 August 2019).
13. **Invited Paper**, MMR Howlader and MJ Deen, "*Nanomaterials Based Low-cost Sensors*," **19th Canadian Semiconductor Science and Technology Conference (CSSTC 2019)**, 1 page, Saskatoon, Saskatchewan, Canada (28 July – 1 August 2019).
14. **Keynote Paper**, MJ Deen, "*Cognitive Decision Making – A Case Study for Fiber Optic Communication Systems*," **2019 Huawei Future Network Frontiers Workshop,** 1 page Montreal, Canada (18-19 July 2019).
15. **Keynote Paper**, MJ Deen, "*Smart Sensors for Environmental Applications*," **"2019 Inspiring ICT" Int'l Summer School on Information and Communication Technology**, Xidian University, pp. 20-21, Xian, China (6 July 2019).
16. **Best Presentation Award - Opening Keynote Paper**, MJ Deen, "*Smart Sensors and Data Analytics for U-Healthcare – AI is a Key Enabler*," **2019 APEC Innovation Dialog Forum,** 1 page, Huzhou, China, (14 May 2019).
17. **Plenary Paper**, MJ Deen, "*Smart Sensors, IoT and Data Analytics – Research, Trends and Opportunities*," **The Humboldt Association of Canada "Kolleg: Transitions",** 1 page, Ottawa, Canada, (11 May 2019).
18. **Keynote Paper**, MJ Deen, "*Integrating Nano-/Optoelectronics in Bioimagers for Healthcare Applications*," **"2018 Innovative ICT" International Summer School on Information and Communication Technology**, Xidian University, 1 page, Xian, China (25 July 2018).
19. **Invited Paper**, MMR. Howlader and MJ Deen, "*Nanomaterials for sensing devices and systems for environmental applications*", **26th Int. Symp. "Nanostructures: Physics and Technology**, Minsk, Belarus, 18–24 June 2018.
20. **Keynote Paper**, MJ Deen, "*Smart Sensors and Smart Homes for Ubiquitous Healthcare*," **2018 The Second International Duke Kunshan University Innovation Forum "AI: Recent Development Emerging Applications,"** p. 6, Kunshan, China (21-22 May 2018).
21. **Keynote Paper**, MJ Deen, "*Smart Sensors – Having Fun at the Intersection of Engineering & Sciences*," **Nanotech Malaysia 2018,** p. 8P-1-2, Kuala Lumpur, Malaysia (7-9 May 2018).
22. **Keynote Paper**, MJ Deen, "*Smart Sensors and Smart Homes for Elderly Ubiquitous Healthcare*," **2017 International Conference on Security, Pattern Analysis and Cybermatics,** pp11-13, Shenzhen, China (15-17 December 2017).
23. **Opening Keynote Paper**, MJ Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities*," **Proceedings of ES 2017. IEEE Fifth International Conference on Enterprise Systems (ES 2017) – Industry 4.0 and Made in China 2025,** 12page, Tsinghua University, Beijing, China (September 2017).
24. **Opening Keynote Paper**, MJ Deen, "*Smart Sensors and IoT – Research, Trends and Opportunities. Conference* **Proc. International Academicians Forum - Made in China 2025 and Industry 4.0,** 1 page, Yiwu, China (Sep 2017).
25. **Keynote Paper**, MJ Deen, "*Smart Sensors – Research, Trends and Opportunities*," **Chip on the Sands - SB-Micro 2017,** Fortaleza, Brazil, 2 pages (Wednesday 30 August 2017).
26. **Keynote Paper**, MJ Deen, "*Nano-Optoelectronic Systems for Health Applications*," **NTU-MediaTek IC Design Workshop,** Nanyang Technological University, Singapore (16 August 2017).
27. **Opening Keynote Paper**, MJ Deen, "*Unprecedented Vision*: *From Quantum Dots to Silicon Imagers*," **Annual Workshop – 111 Project Base of Wide Band-gap Semiconductor and Micro-Nano-Electronics,** Xidian University, Xian, China, p 1 (19 July 2017).
28. **Keynote Paper**, MJ Deen, "*Smart Sensors for Ubiquitous Healthcare*: *Trends & State-of-the-Art*," **Int Summer School on Information & Communication Tech (16-25 July 2017),** Xidian Univ, Xian, China, p 11 (18 July 2017).
29. **Invited Paper,** JA Jiminez Tejada, P Lopez Varo, O Marinov, CH Chen and MJ Deen, "*Effect of Metal-Organic Interfaces in Analytical Modeling of Organic Solar Cells*," **231st Meeting of the Electrochemical Society**, 2 pages, New Orleans, LA (26 May – 1 June 2017).
30. **Opening Keynote Paper**, MJ Deen, "*Nano-Optoelectronic Systems for Health Applications*," **BIT's 3rd Annual World Congress of Smart Materials – 2017, Theme: *Step Towards a Ubiquitous Smart Future***, Bangkok, Thailand, p. 42, (16-18 March 2017).
31. **Opening Keynote Paper**, MJ Deen, "*Smart Sensors for Health Applications – Research, Trends and Opportunities*," **Second Generation of Information Technology, Technology Innovation Shenzhen-Hong Kong Cooperation, Shenzhen-Hong Kong Cooperation High-Level Forum**, Shenzhen Research Institute, Key Laboratory of Shenzhen System Chip Design, Peking University, Shenzhen, China, 1 page (Saturday 18 February 2017).
32. **Invited Paper,** AU Alam, N-X Hu., MMR. Howlader, and MJ Deen, "*Pharmaceutical contaminants and pH sensing using MWCNTs based electrodes*", **International Conf on Solid State Devices and Materials**, Sendai, Japan (2017).
33. **Opening Keynote Paper,** MJ Deen, "*Smart Sensors for the Grand Challenges in Health and Environmental Applications*, **38th Annual Scientific Meeting of the National Academy of Science and Technology "*Looking Back***

***and Looking Forward*", Manila, Philippines, 2 pages, (Wednesday 13 July 2016).**

34. **Invited Paper,** MJ Deen, "*Engineering Education and Economic Development - Fact or Fiction*", Graduate Students Meeting on Electronics Engineering, Universitat Rovira i Virgili (URV), Tarragna, Spain, 2 pages (Friday 1 July 2016).
35. **Invited Paper,** MJ Deen, "*Flexible Electronics*: *Opportunities and Challenges*", **International Workshop on Flexible Electronics (WFE),** Universitat Rovira i Virgili, Tarragona, Spain, 2 pages (Wednesday 29 June 2016).
36. **Invited Paper,** MJ Deen, "*Low-cost Bio-imagers for Healthcare Screening and Diagnostics*," **King Khalid University Medical City (KKUMC) International Conference -University Healthcare Systems: Identity and Mission,** King Khalid University, Abha, Saudi Arabia, 2 pages (30-31 March 2016).
37. **Opening Keynote Paper,** MJ Deen, "*Smart Sensors for the Grand Challenge in Health Applications*", **Philippine Council for Health Research and Development (PCHRD) Conference: Going Global: Increasing International Partnerships in Research and Innovation for Health,** Manila, Philippines, 2 pages (17 March 2016).
38. **McMaster Plenary Paper,** MJ Deen, "*Smart Home Technologies Towards Elderly Ubiquitous Healthcare*," **McMaster University and The McMaster Institute of Geroscience Symposium on the Plasticity of Aging – Living Long … Living Well,** Hamilton, Canada, 1 page (29 September – 1 October 2015).
39. **Invited Paper,** MJ Deen, "*Smart Home Technologies for Smart Cities*," **International Workshop on Big Data for Petroleum Engineering,** China University of Petroleum, Qingdao, China, 1 page (16 August 2015).
40. **Invited Paper,** JA Jiminez Tejada, P Lopez Varo, O Marinov and MJ Deen, "*Role of Metal-Organic Intefaces in the Dark Current Characteristics of Organic Solar Cells*," **227th Meeting of the Electrochemical Society**, 2 pages, Chicago, Illinois (24-28 May 2015).
41. **Invited Paper,** MJ Deen, "*IoT, Smart City and U-Health, U-Environment Smart Home*," Walter Booth School of Engineering Practice "**Policy Matters in a Connected World**" Specialty Workshop, McMaster University, Hamilton, Canada, 1 page (5 May 2015).
42. **Keynote Paper,** MJ Deen, "*Smart Home Technologies Towards Better Healthcare*," **5th Saudi eHealth Conference,** Riyadh, Saudi Arabia, 1 page (18-20 November 2014).
43. **Keynote Paper,** MJ Deen, "*Ubiquitous-Healthcare Smart Homes for the Elderly*," **IEEE International Humanitarian Technology Conference (IHTC 2014)**, Montreal, Canada, 1 page (Sunday 1 June 2014).
44. **Invited Paper,** Q Fang, MJ Deen and PR Selvaganapathy, "*Applications of Optoelectronics Sensor Technology in Environmental and Personal Health Monitoring*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Tuesday 13 May 2014).
45. **Invited Paper,** D Palubiak and MJ Deen, "*Single Photon Avalanche Diode Imaging Systems for Biomedical Applications*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Monday 12 May 2014).
46. **Keynote Paper,** MJ Deen, "*Biosensors – Having Fun with Engineering and the Sciences*," **IX Workshop on Semiconductors & Micro & Nano Technology** (**SEMINATEC 2014**), Sao Paolo, Brazil, 1 page (Fri 25 April 2014).
47. **Invited Paper,** MJ Deen, "*Smarter Homes Towards Better Healthcare for the Elderly*," **Canadian Conference on Electrical and Computer Engineering** (**CCECE 2014**), Toronto, Ontario, 1 page (Tuesday 6 May 2014).
48. **Invited Paper,** MJ Deen, "*Smart Cities – ICT and Transportation*," **APEC Smart City Innovation & Technology Cooperative Forum – Academician Sub-Forum**, Changzhou, China, 1 page (Wednesday 9April 2014).
49. **Keynote Paper,** MJ Deen, "*Information and Communications Technologies for Ubiquitous-Healthcare*," **APEC (Asia-Pacific Economic Cooperation) Smart City Innovation & Technology Cooperative Forum**, Changzhou, China, 1 page (Tuesday 8April 2014).
50. **Invited Paper,** MJ Deen, "*Imaging and Sensing Devices for Medical and Environmental Applications*," **Workshop for International Research Core for Advanced Manufacturing Science for Future Systems, International Symposium on Advanced Manufacturing Science for Future Systems**, University of Tokyo, Tokyo, 1 page (Thursday 20 March 2014).
51. **Invited Paper,** MJ Deen and MR Howlader, "*Future Nano- and Micro-Systems Using Nanobonding Technologies*," **International Conference on Nanomaterials 2013**, London, Ontario, Canada, 1 page (Monday 12 August 2013).
52. **Invited Paper,** JAJ Tejada, P López Varo, K Awawdeh and MJ Deen, "*Modeling of Charge Injection in Organic/Polymeric Diodes*," **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada, 1 page (Tuesday14 May 2013).
53. **Invited Paper,** O Marinov, C Feng, and MJ Deen, "*Precise Parameter Extraction for Organic Thin-Film Transistors Operating in the Linear Regime*," **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada, 1 page (Tuesday 14 May 2013).
54. **Invited Paper**, MJ Deen, *"Nanotechnology - Nanobonding a Key Enabling Technology Emerging Applications*," **The 1st Int. Workshop on Advanced Materials and Devices** (**WAMD '13**), Havana, Cuba, 1 page (13-15 March 2013).
55. **Invited Paper**, M. Deen and Q Fang, *Bioimagers – Life at the Intersection of Engineering and Sciences*, **The 4th**

International Symposium on IT Convergence Engineering (ISITCE), Seoul, Korea, 1 page (12-13 July 2012).

56. **Invited Paper**, M. Deen, *Compact Modeling of Organic Thin Film Transistors*, **The 8th International Conference on Organic Electronics,** Tarragona, Spain, 1 page (25-27 June 2012).
57. **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).
58. **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).
59. **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).
60. **Keynote Paper – Royal Society of Canada Keynote Address**, MJ 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).
61. **Invited Paper**, O Marinov and MJ Deen, *Transient Behavior of Variable Range Hopping*, **Organic Semiconductor Materials, Devices & Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (3 May 2011).
62. **Invited Paper – Electronics and Photonics Division Award Talk**, MJ 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).
63. **Invited Paper**, J Jiménez Tejada, K Awawdeh, P López Varo, A Ray, and MJ 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).
64. **Invited Paper**, R Datars, J Tajik, and MJ Deen, *Modeling of Organic Solar Cells*, **Organic Semiconductor Materials, Devices & Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (3 May 2011).
65. **Plenary Paper**, MJ 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).
66. **Keynote Paper** MJ Deen, MMR Howlader, PR Selvaganapthy, and T Suga, "*Nanobonding technologies for emerging applications*", **International Conference on Electronics Packaging ICEP**, Nara, Japan (13-15April 2011).
67. **Invited Paper**, MJ Deen, *Compact and Numerical Modeling of OTFTs*, **3rd Int Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2010),** Tarragona, Spain, 1 page abstract (2 July 2010).
68. **Invited Paper**, JA Jiménez Tejada, J.A. López Villanueva, J. E. Carceller, MJ 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).
69. **Invited Paper**, MA Naser, MJ 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).
70. **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).
71. **Invited Paper**, LM Resendiz Mendoza, M Estrada, A Cerdeira, B Iniguez and MJ Deen, *Influence of P3HT Active Layer Thickness on the Electrical Characteristics of PTFTs*, **Second Int. Sym on Organic Semiconductor Materials and Devices, The 216th Meeting of the Electrochemical Society**, Vienna, Austria,1 page (Tuesday 6 Oct 2009).
72. **Invited Paper**, J Jiménez Tejada, P Lara Bullejos, MJ 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).
73. **Invited Paper**, O Marinov, MJ 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).
74. **Invited Paper**, MJ Deen, *CMOS-based Photodetection Systems for Biological/Medical Application*, **2009 CMOS Emerging Technologies**, Vancouver, Canada, 1 page (23-25 September 2009).
75. **Invited Paper**, N Faramarzpour, MJ 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).

76. **Invited Paper**, MA Naser, MJ 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).
77. **Invited Paper**, M Eldesouki, MJ Deen, Q Fang, F Tse and LW 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).
78. **Invited Paper,** Q Fang, M Kfouri, T Huang, F Tse, L W Liu and MJ 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).
79. **Invited Paper**, MJ Deen, *Compact Modeling of Silicon-based, Low-cost, Highly Integrated Biosensors*, **IEEE EDS Mini-Colloquium on Advanced Electron Devices Technology and Modeling**, The Møller Centre, Cambridge, UK, 1 page (Friday 12 September 2008).
80. **Invited Paper**, MJ Deen, *Modeling Organic/Polymeric Thin-film Transistors*, **First IEEE EDS International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation**, The Møller Centre, Cambridge, UK, 1 page (Thursday 11 September 2008).
81. **Invited Paper,** MJ Deen, *Silicon-based High-sensitivity Integrated Biosensors*, **NanoTr IV – Nanoscience and Nanotechnology Conference**, Istanbul, Turkey, page 87 (9-13 June 2008).
82. **Invited Paper**, MJ 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).
83. **Invited Paper**, JA Jiménez Tejada, P Lara Bullejos MJ 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).
84. **Invited Paper**, MJ 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).
85. **Plenary Paper**, MJ 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).
86. **Tutorial Paper**, MJ 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).
87. **Invited Paper,** MJ 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).
88. **Plenary Paper**, MJ 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).
89. **Invited Paper**, Q Fang, MJ 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).
90. **Invited Paper**, MJ Deen, N Faramarzpour, F Campos, S Shirani, Q Fang, L Liu and JW 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).
91. **Invited Paper**, MJ Deen, *Integrated Biosensors,* **The IEEE EDS International Electron Device and Materials Colloquium,** Orlando, Florida, 1 page (24-25 February 2006).
92. **Invited Paper**, JC Ranuarez and MJ 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).
93. **Invited Paper**, NR Das and MJ 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).
94. **Invited Paper**, MJ 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).
95. **Invited Paper**, MJ 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).
96. **Invited Paper**, Y Ardeshirpour and MJ 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).
97. **Invited Paper**, Y El-Batawy and MJ 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).

98. **Plenary Paper**, MJ Deen, *Low Power RFICs for Transceiver Applications*, **IEEE Nanoelectronic and Photonic Systems Workshop**, Tarragona, Spain (21-22 June 2004).
99. **Invited Paper**, N Faramarzpour, S Shirani, MJ 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).
100. **Invited Paper**, FJ De la Hidalga-W., FJ Cortes-P and MJ 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).
101. **Plenary Paper**, MJ 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).
102. **Keynote Paper**, MJ Deen, *Electrical Characterization of Si-SiO_2 and Semiconducting Polymer- SiO_2 Interfaces*, **The 203rd Meeting of the Electrochemical Society**, Paris, France, p. 452 (27 April-2 May 2003).
103. **Invited Paper – T.D. Callinan Award Talk**, MJ 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).
104. **Invited Paper**, N Das, Y El-Batawy, and MJ 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).
105. **Invited Paper**, FJ De la Hidalga-W. and MJ 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).
106. **Invited Paper**, FJ De la Hidalga-W., MJ Deen and EA 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).
107. **Invited Paper**, S An, MJ Deen, A. Bandyopadhyay, WR Clark, AS Vetter, J Yu, JP 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).
108. **Invited Paper**, A Raychaudhuri, WS Kwan, MJ Deen and MIH 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).
109. **Invited Paper**, EA Gutierrez-D., MJ 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).
110. **Invited Paper**, MJ Deen, *Modeling of Avalanche Photodiodes*, **Progress in Electromagnetics Research Symposium (PIERS 1997)**, Kowloon, Hong Kong, Proc. PIERS '97, p. 117 (6-9 January 1997).
111. **Invited Paper**, MJ Deen and ZX 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).
112. **Invited Paper**, RM Murowinski and MJ 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).
113. **Invited Paper**, MJ Deen and A Raychaudhuri, *Charge Pumping, Low Frequency Noise and Floating Gate Characterization Techniques of SiO_2 gate Insulators in MOSFETs*, **The Electrochemical Society Spring Meeting**, San Francisco, California, Vol. 94-1, pp. 245-6 (22-27 May 1994).
114. **Invited Paper**, MJ 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).
115. **Invited Paper**, MJ Deen, *Low Temperature Microelectronics: Opportunities and Challenges*, **Electrochemical Society**, Vol. 91-1, pp. 384-385, (May 1991).

Contributed Conference Abstracts

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116. Z Cheng, H Peng, MJ Deen, "*Performance Integrated Circuits for Biomedical Imaging Applications*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Wed 13 May 2014).
117. X. Zheng, MJ Deen, and H Peng, "*Performance Characteristics of CZT Detectors for PET Imaging Applications*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochem Soc**, Orlando, Florida, 1 page (Wed 13 May 2014).
118. H Alhemsi and MJ Deen, "*MOS Time-Domain Imager for Functional Brain Imaging Using Gated Near-Infrared Spectroscopy*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Tuesday 13 May 2014).
119. T Guo, MJ Deen, C Xu, and Q Fang, "*In-Line Monitoring of Bacteria in Drinking Water By Infrared Spectroscopy and Micro-Flow Cytometry*," **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida, 1 page (Tuesday 13 May 2014).
120. C Feng, MJ Deen and PR Selvaganapathy, "*Polymeric Thin-Film Transistors and Microfluidics for Sensing Applications*," **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada, 1 page (Tuesday 14 May 2013).
121. **Best Poster Award – Nanosensors** Unsang Lee, Taiuk Rim, Sungho Kim, Kihyun Kim, Nanki Hong, Jeong-Soo Lee and MJ Deen, "*Nanowire Biosensors for Uric Acid and Helicobacter-pylori Detection*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
122. T Rim, S Kim, K Kim, U Lee, E Baek, N Hong, MJ Deen, M Meyyappan, Y-H Jeong, J-S Lee, "Low *Power Consumption and High Sensitivity of Silicon-Nanowire Bio-Field-Effect Transistors*", **Fourth Int'l Symp. on IT Convergence Engineering (ISITCE 2012)**, Seoul, S. Korea, 1 page (12-13 July 2012).
123. **Best Poster Award – Autonomics** Jimin Kwon, Donghyeok Ho, Jongjin Park, Jin Xiao and MJ Deen, "*Noise Signature Based Energy Management*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
124. Jonghyun Lee, Jihye Hwang, Yunsik Park and MJ Deen, "*Smart Sleep at Home*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012)**, Seoul, S. Korea, 1 page (12-13 July 2012).
125. Jaehook Lee, Chenglong Yao, Murat Artan and MJ Deen, "*Smart Knee*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
126. Hyo-Ryun Lee, Seung-Eun Cho, Linh Tran, Jin Bo and MJ Deen, "*Walking Pattern Analysis and Prediction of Falling Risk*", **Fourth Int Symp on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
127. BJ Park, BM Kim and MJ Deen, "*CMOS Power Amplifier for Wireless Sensor Systems*", **Fourth International Symposium on IT Convergence Engineering (ISITCE 2012),** Seoul, S. Korea, 1 page (12-13 July 2012).
128. MR Dadkhah, MJ Deen, S Shirani, *CMOS Sensors for Compressive Sensing*, **Sixth Int'l Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington, 1 page (6-12 May 2012).
129. E Nemati, MJ 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).
130. **Best Poster Award – Autonomics** Hamid Faryabi, Do Quoc Le, Yong Feng, Duc Minh Le, MJ Deen and Hong June Park, *Developing Smart Garments for Monitoring Vital Signs*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
131. Tran Hoai Thu, Bo Jin, Eunhye Baek, Le Thi Thanh Huyen, Sunghwan Sakong, Hui Wang and MJ Deen, *Age-based Walking Patter Analyzer*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
132. Yunmin Go, Unsang Lee, Taehyun Kim, Seokyoung Lee and MJ Deen, *Sleeping Environment in Smart Home Using Sensors, Actuators, Computer and Smart Phone*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
133. J-H Kim, MJ Deen and H-J Park, *ECG Sensors with Motion Artifact Removal Feature*, **Third International Symposium on IT Cnvergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
134. **Best Poster Award – Nanosensors** Taiuk Rim, Sungho Kim, Kihyun Kim, Eunhye Baek, Un-Sang Lee, Ho-Joon Lee, Chang-Ki Baek, Meyya Meyyappan, MJ Deen, Yoon-Ha Jeong and Jeong-Soo Lee, *pH Responses and Cancer Marker Sensing of Si-Nanowire Bio-FET*, **Third International Symposium on IT Convergence Engineering (ISITCE 2011),** Pohang, S. Korea, 1 page (14-15 July 2011).
135. Yeongrak Choi, Sangwook Bak, Sungbae Cho, Changsuk Yoon, John Strassner, MJ Deen and James Won-Ki Hong, *Knee Rehabilitation Using Range of Motion Exercise Feedback*, **Second International Symposium on IT Convergence Engineering (ISITCE 2010),** Pohang, S. Korea, 1 page (19-20 August 2010).

136. **Best Poster Award – Autonomics** Hui Wang, Hyeok-soo Choi, Nazim Agoulmine, MJ Deen and James Won-Ki Hong, *POSTECH's U-Health Monitoring and Support Smart Home for the Elderly*, **Second International Symposium on IT Convergence Engineering (ISITCE 2010),** Pohang, S. Korea, 1 page (19-20 August 2010).
137. KH Kim, T Rim, SH Kim, SH Kim, SH Sakong, DH Cho, SB Jeong, MJ Deen, YH Jeong, M Meyyappan, and JS Lee, *Fabrication and Electrical Characteristics of Si-Nanowire BioFETs*, **Second International Symposium on IT Convergence Engineering (ISITCE 2010),** Pohang, S. Korea, 1 page (19-20 August 2010).
138. S Safari-Mohsenabad, PR Selvaganapathy and MJ Deen, *Microfluidic Reference Electrode for Lab-on-Chip Sensing Application*, **Ontario-on-a-Chip[5] Symposium**, Toronto, Canada, 1 page (20-21 May 2010).
139. MW Shinwari, MJ Deen and PR 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).
140. S Majumder, MM El-Desouki, O Marinov and MJ 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).
141. MM 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).
142. D Palubiak and MJ 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).
143. S Safari-Mohsenabad, PR Selvaganapathy, A Derardja and MJ 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).
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37 MJ Deen, *Some Conclusions on Preliminary Experiments on Noise in MOSFETs,* **Technical Report to Mitel Corporation (Dr. J Orchard-Webb)**, Kanata, 13 pages (29 April 1997).

38 S An, A Bandyopadhyay, MJ Deen, LE Tarof, W Clark and AS Vetter, *Low Temperature Studies of the Breakdown Voltage in Separate Absorption Grading Charge and Multiplication InP/InGaAs Avalanche Photodiodes,* **Nortel Technology Internal Report**, 24 pages (1997).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

60 MJ Deen, *Electrical, Chemical & Structural Characterization of NbN Thin Films Reactively Sputtered with a High Field DC Magnetron,* **Tech Report to Herzberg Inst of Astrophys, Nat Res Council**, Ottawa, 24 pages (Apr 1987).

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

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

63 MJ Deen, *The Design and Simulated Performance of a CARS Spectrometer Using Solid State Detectors,* **Final Technical Report to NASA Lewis Research Center**, Cleveland, Ohio, 175 pages (July 1985).

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

External Collaborations (Several Projects in Some Cases)

Current Collaborations

- Environmental Bio-Detection Products Inc (EBPI), Burlington, Canada - **Development of a Handheld Water Quality Monitoring Platform Incorporating a Low-cost Electrochemical Sensor Array** (2019 -). www.biotoxicity.com
- Orthobiomed Inc., Vaughan, Ontario, Canada - **A Low-cost Wearable Tele-Health Monitoring System for Chronic and Infectious Diseases** (2019 -). www.orthobiomed.ca
- Dominion Astrophysical Observatory, National Research Council, Victoria, Canada – Tim Hardy and Rick Murowinski, **Large array charge coupled devices and CMOS imaging systems** (1989 -).
- Hamilton Health Sciences – David Armstrong and Frances Tse, **Ultra-violet (UV) fluorescence imaging for medical applications** (2006 -).
- Hamilton Health Sciences – Tapas Mondal, **Cardiologic health monitoring systems for long term applications** (2011-).

- Six Nations Grand River Communities, Ontario – **User friendly drinking water quality monitor systems** (2020 – present). www.ontario.ca/page/six-nations-grand-river (Michelle Jamieson, Community Educator, Six Nations Health Services, Health Promotion, White Pines Wellness Centre, 1745 Chiefswood Road, Ohsweken, ON N0A 1M0; Tel: (519)445-2809; Fax: (519)445-1907; michellejamieson@sixnations.ca)
- CINVESTAV, Mexico City, Mexico – Magali Estrada and Antonio Cerdeira, **Emerging semiconductor devices and modeling** (1996 -)
- INAOE, Puebla, Mexico –Edmundo Gutierrez, **Semiconductor device physics and applications** (1996 -).
- Calcutta University – Nikhil R. Das and Prasanta K. Basu, **Modeling of photonic components** (1999-).
- Peking University – SHRIME, Shanghai, China, **Electronic Systems for Biomedical Applications** (2012 -).
- Pohang University of Science and Technology POSTECH), Pohang, South Korea – Bumman Kim, Jeong-Soo Lee and James Hong, **Information and communications technologies** (**ICT) for U-health and U-environment** (2009 -).
- Universidade Estadual de Campinas, Campinas (UNICAMP, SP – Brasil – Jacobus Swart, **Optical sensors and their applications** (2006 -).
- Universidad de Granada, Granada Spain – Juan Antonio Jiminez Tejada, **Physics and Modeling of Emerging Semiconductor Devices** (2007 -).
- Universite de Montpellier II (CEM2), France – Fabien Pascal, **Noise studies in nanoelectronic components** (2002-).
- Universitat Rovira I Virgili, Tarragona, Spain – Benjamin Iniguez and Lluis Marsal, **Compact modeling of inorganic and organic semiconductor devices** and **Nanotechnology** (2002 -).
- University of Toronto, Toronto – J. Stewart Aitchison, B**iosensors and system integration** (2005-).
- University of Waterloo, Waterloo – Vassili Karanassios, **UV fluorescence imaging system** (2005-).
- Zhejiang University, Zhejiang, China – Shurong Dong, Hao Jin and Tao Wang, **Nanoscale devices and applications** (2011 -).

Previous Collaborations

- Bell Northern Research, Ottawa, Canada - Larry Tarof, Tony Vetter and Bill Clark, **Modeling and characterization of advanced avalanche photodiodes for opto-electronic communications applications** (1991-1999).
- Celestica, Toronto, Canada - Dr. T. Berdinskikh, **Capacitive ECG Systems for Heart Monitoring** (2013-2014).
- 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, ZX 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 - HC Liu, **RTDs and infrared detectors for electronic and infrared applications** (1993-1999).
- INAOE, Puebla, Mexico – Javier De La Hidalga-W., Roberto Murphy, **Semiconductor device physics and applications** (1996 - 2021).
- 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).
- Nanowave Technology, Etobicoke, Ontario, Canada - Justin Miller and Ali Rahal, **Modeling of active and passive microwave components** (1998-2015).
- Nat'l Semiconductor Corp, Santa Clara, CA - R. Bashir, R. Taylor, **Low freq noise in bipolar transistor** (1997 - 2000).
- Nortel Networks, Ottawa, Canada - S. McGarry, **Plastic transistors** (1998-2002).
- Northern Telecom Electronics, Ottawa - M. Doan, R. Hadaway, J Ilowski, A. Naem, A. Ng, **Low and high frequency noise, high field effects and parameter extraction in MOSFETs, BJTs and BiCMOS circuits** (1987-1995).
- Perkin Elmer, Montreal - R. Henderson, **Modeling of advanced photodetectors for fiber communications** (1998- 2002).
- Public Health Agency of Canada – Mohamed Karmali, **Micro- and nano-systems for health and environmental**

applications (2006 - 2019).

- RFMD, California - A 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).
- Siborg, Waterloo, Canada - Dr. M. Obrecht, **Organic Photovoltaic Device Simulator** (2013-2014).
- 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 Corp, Japan – Yukihiro Kiyota, **High freq noise, parameter extraction & modeling of MOSFETs** (2004-07).
- Texas Instruments, Dallas, U.S.A. - A.C. Seabaugh, **Noise studies and multi-valued memory applications of InP-based RTDs** (1990-92).
- University Health Network, Toronto – Louis Liu, **UV fluorescence imaging for medical applications** (2005 - 2021).
- University of Tromso, Tromso, Norway - Xuyuan Chen, **Noise studies in advanced bipolar transistors** (1999-2004).
- Xerox, Mississauga, Canada – Nan-Xing Hu, **Plastic microelectronics for sensing applications** (2014 - 2024).
- Xerox, Mississauga, Canada – Yiliang Wu, **Plastic microelectronics for sensing applications** (2011 - 2018).
- Xerox, Mississauga, Canada – Beng Ong and Yiliang Wu, **Plastic microelectronics** (2003-2006).
- Voltek Energy, Los Angeles, California, USA – Dr. Juzer Jangbarwala, **Free chlorine sensor system** (2019-2021). linkedin.com/in/juzer-jangbarwala.
- Zarlink, Kanata, Ottawa, Ontario, Canada – Brendon Manning, **RFICs for transceiver applications** (2002-2003).

RESEARCH GRANTS

- **Total Research Grants starting from 2001 to present** **$103,194,629**
- **Sole Investigator or Principal Investigator (PI) from 2001 to present** **$23,406,894**
- **Co-investigator from 2001 to present** **$79,787,735**

a) Support currently held

Name of Investigator(s)	Title of Proposal, Funding Source and Program	Total Amount	Years
MJ Deen	*High-performance Imaging and Sensing Systems Enabled Using Smart Software*, NSERC Discovery Grant.	$320,000	2024-2029
M Head (NPI), L Carlesso, MJ Deen, B Detlor, A Innes, S Mosser, (co-PIs); S Boamah, N Dalmer, C Dupuis, Q Fang, D Geiskkovitch, K Hassanein, T La Rose, PJ White (co-Is).	*Aging, Mobility & the Digital Divide*: *Bridging Digital Divides for Older Adults Through Design*, McMaster Institute for Research on Aging (MIRA) Digital Divide Major Program of Research (MPR) Grant	$1,192,654	2024-2027
A. Abebe (Co-PI), S. Mudavanhu, (Co-PI), B. Ibahwoh, J. Daniel, J. Deen, L. Kapiriri, F. Ogunkoya	*McMaster African and Caribbean Leadership Exchange* (*MACLeads*), Employment and Social Development Canada and Universities Canada, Global Skills Opportunity Program	$500,000	2021-2025
R. Zheng (PI), H. Ashtiani, T. Carmichael, F. Chiang. J. Deen, M. Eskicioglu, Q Fang, P. Gardner, C. Latulipe, A. Papaioannou, J. Wilson	*NSERC CREATE for Smart Mobility for the Aging Population*, NSERC CREATE – Collaborative Research and Training Experience Program	$1,650,000	2020-2026
J Daniel (Co-PI), L Kapiriri (Co-PI), A Abebe (Co-PI), J Deen, B Ibhawoh, S Mudavanhu and L Mbuagbaw	"*Supporting Black Excellence at McMaster: THRIVE, ABLDs, MACLeads, and Black HQPs Training Program Initiatives*", STEER/R (Strategic Excellence and Equity in Recruitment and Retention) Fund, Provst & VP Academic, McMaster University.	$952,220	2022-2024
Deen (PI), Aitchison, Collins, Fang, Hranilovic, Karanassios, Karmali, LaPierre, Liu, Zhu	*Micro- and Nano-systems Laboratory*, CFI Institutional Operating Funds	$1,277,017	2013-2027
MJ Deen	"*Radio Frequency Integrated Circuits – RFICs*", IBM	$16,000	2006-2025

	Faculty Grant		
b) Support held in the past (from 1994)			
MJ Deen	*High Performance Optical Detectors and Imagers for Emerging Applications*, NSERC Discovery Grant.	$456,000	2018-2024
M. Leclerc (PI), A. Adronov, H. Aziz, C. Bois, T. Carmichael, E. Cretu, J. Deen, I. Hill, R. Izquierdo, L. Kaake. B. Lessard, Y. Li, J-F Morin, R. Martel,S. Rondeau-Gagné, C. Santato, T. Szkopek, K. Walus, G. Welch.	*NSERC Green Electronics Network* (*GreEN*), NSERC Strategic Partnership Grants for Network	$5,500,000	2018-2024
George Dixon (PI, Waterloo), Jim Barker, Dave Rudolph, Mark Servos (Waterloo), Deb McLatchy (WLU), Ed McBean (Guelph), Jamal Deen (McMaster), (Susan Andrews (Toronto), David Tweddell (Western Ontario)	"*Southern Ontario Water Consortium*", Federal Economic Development (FedDev) Agency for Southern Ontario.	$19,580,000	2011-2023
MJ Deen	*A Low-cost Wearable Tele-Health Monitoring System for Chronic and Infectious Diseases*, Mitacs Accelerate PDF Grant with Ortho Biomed Inc.	$120,000	2021-2023
MJ Deen	*Advanced Optical Detectors and Imaging Systems*, Canada Research Chair (CRC), Govt. of Canada.	$1,400,000	2015-2022
MJ Deen	*Sensors for Water Quality Monitoring*, CFREF Grant	$90,000	2018-2022
MJ Deen	*Development of a Handheld Water Quality Monitoring Platform Incorporating a Low-cost Electrochemical Sensor Array*, Mitacs Accelerate PDF Grant with Environmental Bio-Detection Products Inc (EBPI), Burlington, Canada	$110,000	2020-2022
S. Kumar (PI) and MJ Deen	*Design of Highly Sensitive SPAD-based Detection System and Kramers-Kronig-based Optical Receiver for Free Space Optical Systems*, NRC Collaborative Research and Development Grant	$125,000	2020-2022
H Shantanna (PI), MJ Deen (co-PI), A. Nelson (Co-PI)	"*Studying Aging, Mobility and Chronic Low Back Pain in Older Adults using Remote Monitoring*", McMaster Institute for Research on Aging/Labarge Centre for Mobility in Aging Catalyst Grant.	$40,000	2021-2022
MJ Deen	*High Performance Optical Detectors and Imagers for Emerging Applications*, DGDND – DND/NSERC Discovery Grant Supplement	$120,000	2018-2020
MJ Deen	*Advanced Optical Detectors and Imagers*, NSERC Discovery Grant.	$355,000	2013-2018
MJ Deen (PI), K. Hassanein and T.K. Mondal	"*Assessing and Improving Mobility in the Elderly with a Smart Knee Monitoring System*", McMaster Institute for Research on Aging/Labarge Centre for Mobility in Aging Catalyst Grant.	$40,000	2017-2018
N Banthia (Scientific Director & PI - UBC), SK Mitra (Assoc Dir – UA), L Kotra (Assoc Dir - UT), Bindiganavile (UA), Brett (UA), Cheng (UA), Cowen (UT), De Silva (UBC), Deen (McMaster), Farrell (UT), Goh (UT), Goss (UA), Hooton (UT), Kain (UT), Kronstad (UBC), Mohseni (UBC), Panesar (UT), Richardson (UT), Sain (UT), Sargent (UT), Sheikh (UT),	"*India/Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability* (*IC-IMPACTS*)", Networks of Centres of Excellence (NCE) - Canada-India Research Centre of Excellence (CIRCE)	$13,800,000	2013-2018

Sinton (UT), Thundat (UA), Tyrrell (UA), Vecchio (UT), Ventura (UBC), Wijewickreme (UBC), Zu (UT)			
M Mohseni (PI), H. Langford, A Mcbean, MJ Deen, JL Isaac-Renton, A. Mazumder, GA Gagnon, CA Haynes, KJ Bakker, BB Barbeau, MJ Rodriguez, G Achari, MHI Dore, RS Saddiq, NA Prystajecky, P Wilkinson, P. Selvaganapathy, H Brumer and L Harris	"*RES'EAU-WATERNET: An NSERC Strategic Network on Small, Rural and First Nations Water Systems*", NSERC Strategic Networks Grants Program.	$4,790,750	2013-2018
Jim Barker (PI, Waterloo), Robert Andrews (Toronto), MJ Deen (McMaster), Shaun Frape (Waterloo), Peter Huck (Waterloo), Deborah MacLatchy (WLU), Chris Metcalfe (Trent), David Rudolph (Waterloo), Mark Servos (Waterloo), Hongde Zhou (Guelph)	"*Water Quality Research Platform in Urban and Urbanizing Watersheds*", Ontario Research Fund.	$8,853,561	2011-2018
Fang (PI), Deen, Du, Armstrong, Tse	*Colon mapping and colonoscopic localization using near infrared imaging of vascular patterns*, Canadian Cancer Society, Innovation Grant	$194,000	2013-2016
MJ Deen	*Advanced, High-performance Photodetectors and Imaging Systems*, Canada Research Chair (CRC), Govt. of Canada.	$1,400,000	2008-2015
MJ Deen	*Implementation of Physical Models and Algorithms for Organic Photovoltaic Device Simulator*, NSERC Engage Grant with Siborg, Waterloo.	$25,000	2014-2015
MJ Deen	*Long-term ECG monitoring system*, NSERC Engage Grant with Celestica, Toronto.	$25,000	2013
MJ Deen	*High Performance Optical Detectors and Imaging Systems for Emerging Applications*, NSERC Discovery Grant.	$180,000	2010-2013
Selvaganapathy (PI), Deen and Schellhorn	*Portable Real-time Water Monitoring System*, NSERC Strategic Grant	$158,500 $162,500 $163,500	2011-2012 2010-2011 2009-2010
Deen (PI), Grundfest, Fang, Armstrong, Aitchison, Chodaparavu, Karanassios, Liu, Tse, Williams, Tromberg, Brown, Carmen, Culjat, Dutson, Hein, Holmes, Chien, Singh	*Bioimaging Technologies for Enhanced Healthcare*, Canada-California Strategic Innovation Partnership (CCSIP) Grant	$100,000 (US)	2009-2012
Deen (PI), Aitchison, Collins, Fang, Hranilovic, Karanassios, Karmali, LaPierre, Liu, Zhu	*Micro- and Nano-systems Laboratory*, CFI, OMRI, Industries and McMaster Univ., Infrastructure Grant	$13,119,817	2007-2012
Chen (PI), Deen, Nikolova, Li and Bakr	*Infrastructure For Noise Characterization of Sub-100nm MOSFETs at Microwave Frequencies*, NSERC Research Tools and Instruments Grant.	$131,051	2010
Huang (PI), Li, Kumar, Deen and Chen	*Enabling Optoelectronic Technologies for Optical Access Applications*, NSERC Strategic Projects Grant	$284,000 $256,000 $256,000	2009-2010 2008-2009 2007-2008
MJ Deen	*Advanced Photodetector Systems for Emerging Applications*, NSERC Discovery Grant.	$355,000	2005-2010
Deen (PI) and Selvaganapathy	*BioFET Sensor System*, NRC-GHI Research Contract.	$32,840	2009-2010
Iniguez (PI - Spain), Deen (Canada) and Estrada (Mexico)	*Techniques of Characterization and Modeling of Organic and Polymeric Devices for Plastic*	20,000 Euros	2006-2009

	Microcircuits, Int'l Complementary Action Grant No. PCI2005-A7-0492, Spanish Ministry of Science		
Deen (PI) and Selvaganapathy	*BioFET Sensor System*, NRC-GHI Research Contract.	$50,000	2008-2009
MJ Deen	*Intelligent Multiple Antenna Structures for Adaptive Wireless Systems*, OMRI, ORF-RE Research Grant	$112,000	2005-2009
Kleiman (PI), Thompson, Jessop, Haugen, Cassidy, Deen, Mascher, Preston, LaPierre, Xu, Knights	*Centre for Electrophotonic Materials and Devices*, NSERC Major Facilities Access Infrastructure Grant.	$390,000	2005-2008
MJ Deen	*BioFET Sensor System*, NRC-GHI Research Contract.	$72,300	2005-2008
Nikolova (PI), Chen and Deen	*Multi-Port 20-GHz Vector Network Analyzer*, NSERC Research Tools and Instruments Grant.	$126,544	2007
Chen (PI), Deen, Li, Nikolova and Bakr	*Infrastructure For High-Frequency Noise Measurements of Sub-100nm MOSFETs*, NSERC Research Tools and Instruments Grant.	$147,051	2007
LaPierre (PI), Thompson, Deen, Mascher, Kruse, Saravanamuttu and Knights	*Photoluminescence Equipment for Nanophotonic Systems*, NSERC Research Tools & Instruments Grant.	$150,000	2007
Deen (PI) and Chen	*High Frequency Noise Characterization MOSFETs*, Sony Corporation Research Contract.	$59,000	2005-2007
MJ Deen	*Optoelectronics Receivers*, Ontario Research and Development Challenge Fund (ORDCF).	$290,000	2003-2007
MJ Deen	*Optical Detectors and Receivers*, Canada Research Chair (CRC), Govt. of Canada.	$1,400,000	2001-2008
Knights (PI), Adronov, Deen, Kleiman, LaPierre, Thompson	*Low Temperature Hall Effect Measurement System*, NSERC Research Tools and Instruments Grant.	$139,309	2006
Deen (PI) and Chen	*RF Noise Modeling and Design of Benchmark RFIC* (*LNA*), RFMD Research Contract.	$60,000	2005-2006
Deen (PI), Fang, Aitchison and Karanassios	*Towards a Miniaturized Fluorescence Based Diagnostic Imaging System*, OCE/CMM Grant.	$200,000	2005-2006
Haddara (PI), Deen	*Improving Mobility and Reliability in Polymer FETs Through Control of Interface Properties and Morphology*, Materials and Manufacturing Ontario - Emerging Materials Knowledge	$90,000	2004-2006
MJ Deen	*Radio Frequency Integrated Circuits for Transceiver Applications*, National Center of Excellence Micronet, NSERC eMPOWER, Gennum Research Grants.	$99,000	2004-2005
Zhu (PI), Botton, Deen and Xu	*Studies of Materials Compatibility and Interfacial Interactions for Fabricating Low-Cost Plastic Thin Film Transistors*, NSERC CRD.	$180,000	2003-2006
MJ Deen	*Radio Frequency Integrated Circuits for Transceiver Applications*, Micronet – Nat'l Center of Excellence, NSERC eMPOWER, Gennum Research Grants.	$118,000	2003-2004
Thompson (PI), Cassidy, Deen, Haugen, Jessop, Maciejko, Mascher, Preston, Sergeant, Simmons, Tennyson, Weatherly	*Centre for Electrophotonic Materials and Devices*, NSERC Major Facilities Access Infrastructure Grant	$276,000	2002-2005
MJ Deen	*Radio Frequency Integrated Circuits for Transceiver Applications*, 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** -	*Giga-to-Nano Electronics Fabrication Facility for Wireless, Bio, Environment, and Medical Applications*, Canadian Foundation for Innovation (CFI), Ontario Innovation Trust (OIT) & Industry, Infrastructure	$14,796,358	2002

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

EDUCATION - TEACHING and MENTORSHIP

Personal Vision and Mission; Roles and Responsibilities

Summary: My primary function as a University Professor is to be the best educator possible. This is achieved through inspirational and engaging teaching and learning, world-class societally-relevant research that is incorporated into teaching, and valued and exemplary services to academia, the profession and society that include educational activities such as seminars, tutorials and conference presentations.

Vision: Educating the next generation of talents to be valued contributors for the betterment of society.

Mission: Support the education of students by offering information technology related courses, grounded in basics and with industrially relevant and practical examples, through inspirational and engaging teaching and experiential learning. Create a welcoming learning environment in class where teaching is based on the principles of active learning that put students at the center of education, critical thinking skills for problem solving, and teamwork among students. Use simple analogies to explain complex concepts, and to bring the material alive for students. Deliver lectures to inculcate a culture of inquiry and self-learning. Use active and experiential learning strategies in which students are central to the learning process to enhance student engagement and build their knowledge and skills. Be a life-long learner to build knowledge of the subject matter with practical examples, and continually look for ways to improve methods of educating students and learning.

Pedagogy: Over my career as a university professor, I have found that there are some key principles that guide how I design, deliver and evaluate learning with the goal to educate the *complete* student consistent with my *vision*.

Subject authority and lifelong learning: As a lifelong student, I am continually educating myself to be a top authority in the material for the courses I teach. I believe that students are inspired and motivated by experts with excellent communication skills able to connect with and engage them in their learning process. Being a top authority in the material I teach also leads to students' confidence in me as an instructor, and in welcoming and being able to respond to challenging questions and problems that go beyond the course material, oftentimes stretching my own knowledge. This allows me to appreciate that I should not only teach the material, but more importantly, ***teach the student***.

Organized and punctual: While these two aspects may seem obvious, for me, it indicates respect for the students' time and tuition fees. Being organized allows me to show how educational material translated into knowledge is built up in a coherent, systematic and goal-oriented way. It also provides students with the needed information of what to expect next and how the different parts of the course relate to each other. In addition, it forms the basis for learner-oriented instruction that is purposeful and enduring.

Clarity and connections: Being organized allows me to plan and deliver my lectures with clarity and show connections not only to other material in my course, but also to other courses taken and still to take. In fact, I am a firm believer that clarity in delivery feeds heavily on being an authority in the material, being organized, and honing my communication skills (speaking, writing and most importantly, listening) to convey the material effectively and efficiently in a variety of ways.

Imagination and inquisitiveness: In my courses, I strive to push the boundaries of the course material to give students a taste of what is yet to be discovered. This forms the spark that ignites within them, their active and unbounded imagination and inquisitiveness, two essential characteristics as they transition from being a student to a contributor for the betterment of our society. This also shows that knowledge is dynamic, continually evolving and pushing the boundaries ever further outwards.

Passion and engagement: I love teaching and I convey this love in my lectures to motivate and engage students, and to make learning fun. In fact, I have found that the better a subject authority I become with a deeper and deeper understanding of the material, the easier it is for me to share this passion with students and make it infectious. This also allows me to provide context, and showcase the bigger picture of the material.

Respect and environment: In all my classes, I create an environment for an excellent learning experience through respect of each student by being kind, patient and humble. I also show genuine care and concern for their learning and education.

A special feature of my teaching is the roles and responsibilities of both the Instructor and the Students that are embedded in every course.

Professor's Role and Responsibility

- **Course & Lecture Materials –** Diligent, meticulous, careful preparation to achieve course objectives.
- **Objective –** Enhance students' mastery of the subject and equip them with tools to improve learning.
- **Impart Knowledge & Skills –** Enhance students' education through active learning, and problem-based and project-based learning approaches; Encourage students to learn from each other & to teach each other – **Peer instruction**; Stop often to allow time for questions and ask many questions to gauge understanding – **Dynamic testing**.

- **Concern –** For students' learning & education; Resolve immediately any impediment(s) to learning; Available to provide assistance.
- **Class Atmosphere** – Warm, welcoming and interesting; Teach with enthusiasm & passion; I love teaching.
- **Method –** Teach to facilitate students' mastery of subject; Show linkages to other courses; Convince students of the importance and beauty of the subject; Provide real-world examples and current applications.
- **Facilitate –** Students' acquisition of life-long learning skills; Do some things by themselves; I am life-long learner.
- **Learning –** Make it fun & enjoyable; The more students learn and master their subjects, the happier they become since it is a positive feedback cycle.

Student's Role and Responsibility

- **Review/Read –** Previous class notes & assigned reading; Do suggested practice problems and questions.
- **Feedback –** Ask questions; Participate; I value all questions.
- **Practice & Peer Collaboration –** Do in-class exercises with neighbor(s); Learn from each other; Teach each other.
- **Role –** Pay attention; Think critically during class lectures and when reviewing course materials; Make a note of any question or topic that needs clarifications or more explanations; Be on time.
- **Active learning –** You are responsible for your learning and education; I will facilitate and structure your learning.
- **Respect –** Always practice mutual respect for fellow students, TAs and Instructors; Be aware of heterogeneous nature of class and practice equity, diversity and inclusiveness; Will be important in your transition from an undergraduate or graduate student.

Teaching

Regular Courses at McMaster University (1999 -)

Undergraduate Courses (Most recent listed first) – One example of course information is provided

ECE 4EK4 Microelectronics

For my senior undergraduate (CE 4EK4) and entry-level graduate course (ECE 6EK4) in "***Microelectronics***", I prepared a complete set of PowerPoint slides using the problem-based and project-based learning approaches. The course package contains twelve sets of lecture slides, three assignments, three labs, two projects, and sample quizzes and final exams from previous years (**315 pages course package**). Initially, the slides are given to the students without solutions/answers to the problems/questions. After each set is taught in class, a second set of slides with solutions and answers is given to students so they can check their work. Videos of tutorials teaching students how to use Cadence (the same chip design software package used in the semiconductor industry) and with several chip design examples, and all lectures are uploaded to the course website in McMaster's Avenue to Learn environment. Also, recently, all lectures were recorded and uploaded to Avenue to Learn. By the end of this course, the measured outcomes from assignments, exams, labs and project, means that students will be competent to:

- Analyze the circuit performance (e.g., gain, frequency response) based on the equivalent circuit models of active devices (e.g., transistors) and passive components (e.g., resistors).
- Apply the physics of semiconductor devices and the operation principle of analog circuits to determine the dimension of active and passive devices in an analog circuit to meet the specifications such as gain, bandwidth, stability, etc.
- Use specialized computer-aided simulation tools to evaluate the effects of altering parameters in the design of analog integrated circuits such as voltage/current sources, differential amplifiers, buffers, and operational amplifiers.
- Design and evaluate complex open-ended analog circuits using a triple bottom line of sustainability dimensions: social, economic and environmental. An awareness of the wide range of engineering societies, literature, conferences, and other information sources.
- Develop partnership, leadership, time management, and communication skills practiced through in-class activities, assignments and the final project.

Finally, after the grades are submitted and anonymous course evaluations are received, the evaluations are sent to all TAs (Teaching Assistants) and students who are kindly requested to provide additional written or oral feedback on any aspects of the course. These are collected and combined with evaluations for a "***course autopsy***" with the TAs, and the findings recorded for implementation in the next offering of the course.

ECE 3EJ4 Electronic Devices and Circuits II (No longer teaching for many years).

ECE 2EI4 Electronic Devices and Circuits- I (No longer teaching for many years).

Graduate Courses (Most recent listed first)

ECE 742 Sensor Technology (Previously ECE 748)

Introduction to the fundamental principles of various state-of-the-art sensors and sensor technologies, their practical performance characteristics and design issues for specific applications of high societal importance. The course will cover measurement, theory,

design and performance of state-of-the art sensors using micro and non-fabrication technologies. Emphasis will be on sensors that are small, consume little power, and are inexpensive. Also, discussions will be conducted on how to construct practical sensing systems including the sensor interface and display devices. The slides are given to the students without solutions/answers to the problems/questions, all of which are solved in class. A second set of slides with solutions & answers is available to all students. By the end of this course, student will

- Have a basic understanding of the fundamental principles various sensors used for health and environmental applications
- Understand how to design and measure key performance parameters of common sensors and how to report results using statistical analyses
- Be able to use sensor systems for practical applications according to targeted design specifications
- Appreciate different material systems and technologies used in sensor systems

Finally, after the grades are submitted and anonymous course evaluations received, the evaluations are sent to all students who are kindly requested to provide additional written or oral feedback on any aspects of the course. These are collected and combined with evaluations for a "***course autopsy***", and the findings recorded for implementation in the next offering of the course.

ECE 711 Silicon Photonics – Fundamentals and Devices

For this "***Silicon Photonics***" course, prepared a complete set of powerpoint slides using the problem-based and project-based learning approaches. The course package contains thirteen sets of lecture slides (one set for each week), three assignments with one having a presentation, and one final exam project with a presentation (**518 pages course package**). The slides are given to the students without solutions/answers to the problems/questions, all of which are solved in class. A second set of slides with solutions and answers is available to all students. In the last offering, lectures were recorded and uploaded to the course website in McMaster's Avenue to Learn environment. By the end of this course, the measured outcomes from assignments, presentations and project, means that students will:

- Have a basic understanding of silicon photonic active and passive components and devices.
- Understand how to design active and passive silicon photonic components and devices.
- Use silicon photonic components in practical systems for applications such as telecommunications and information processing, imaging and sensing.
- Appreciate different material systems and technologies used in silicon photonics.

Finally, after the grades are submitted and anonymous course evaluations received, the evaluations are sent to all students who are kindly requested to provide additional written or oral feedback on any aspects of the course. These are collected and combined with evaluations for a "***course autopsy***", and the findings recorded for implementation in the next offering of the course.

ECE 6EK4 Microelectronics (See description of ECE 4EK4 above).

ECE 740 Semiconductor Device Theory and Modeling (Now taught by another professor)

ECE 741 Analog Integrated Circuits (Course changed to one focusing on higher frequency circuits)

Courses Developed at McMaster University (1999 -)

1. **ECE 748 Sensor Technology** (Graduate course, gave first course offering in Fall 2018).
2. **ECE 711 Silicon Photonics – Fundamentals and Devices** (Graduate course, gave first offering in Fall 2012).
3. **ECE 741 Analog Integrated Circuits** (Graduate course, gave first course offering in Spring 2001).
4. **ECE 740 Semiconductor Device Theory and Modeling** (Graduate course, gave first offering in Fall 2001).
5. **ECE 6EK4 Microelectronics** (Entry-level graduate course, gave first course offering in Fall 2000).
6. **ECE 4EK4 Microelectronics** (Undergraduate course, gave first course offering in Fall 2000).
7. **ECE 2EI4 Electronic Devices and Circuits** (Undergraduate course, gave first course offering in Spring 2000).

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

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

ELEC6910M Sensor Technology for Environmental Applications

Regular Courses at Simon Fraser University (1986-2000)

Undergraduate Courses

ENSC 125 Basic Electrical Engineering
ENSC 225 Microelectronics I
ENSC 330 Engineering Materials
ENSC 425 Electronic System Design

ENSC 453 Semiconductor Device Engineering.

Graduate Courses

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

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 at Simon Fraser University (1986-2000)

1. ENSC 894 Advanced Microelectronic Devices (Special Topics graduate course, gave first offering in Spring 1987).
2. 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).
3. ENSC 853 Digital Semiconductor Devices and Circuits (Graduate course, gave first course offering in Spring 1989).
4. ENSC 850 Semiconductor Device Theory (Graduate course, gave first course offering in Fall 1997).
5. ENSC 461 Introduction to MOS Transistor Theory and Circuits (Special Topics undergraduate course, gave first course offering in Spring 1988).
6. ENSC 461 Introduction to MOS Devices and Circuits (Special Topics undergraduate course, gave first course offering in Spring 1990).
7. ENSC 453 Semiconductor Device Engineering (Undergraduate course, gave first course offering in Spring 1991).

Mentorship - Students/Researchers (and Position after graduation)

Personal Vision and Mission for Highly Qualified Personnel (HQP)

Vision: Support the development of students, researchers, colleagues/collaborators for thriving careers.

Mission: Create a nurturing environment to advance scholarly, educational and personal goals, and coach to efficiently navigate the academic and professional environment for fulfilling futures and careers.

- **Total HQP (Highly Qualified Personnel) 295**
- **Visiting Professors, Post-Doctoral Fellows and Other Researchers 72**
- **Ph.D. Students 56**
- **M.A.Sc. and M. Eng. Students 84**
- **B.A.Sc. Students 83**

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

1. Dr. Ognian Marinov (Senior Research Associate), **Smart Systems** (January 2020 -).
2. Dr. Akila Derardja (Visiting Scholar), **Nanomaterials-based Sensors** (May – August 2023). Professor, University of Batna II, Batna, Algeria.
3. Dr. Mahdi Naghshvarianjahromi (Postdoctoral Fellow) **Cognitive Dynamic Systems for ICT** (Sep 2020 – Aug 2025). Co-supervised with Dr. S. Kumar. Co-founder & CTO of PBS Intelligent Optical Networks, Hamilton, ON, Canada.
4. Dr. Wei Jiang (Visiting Researcher), **Bioimaging and Wearable Sensing Systems for Healthcare Applications** (September 2022 – May 2024).
5. Dr. Jun Feng (Postdoctoral Fellow), **Deep Learning and Big Data** (September 2021 – August 2022). Assistant Professor, Dalian University of Technology, China.
6. Dr. Wei Jiang (Mitacs Elevate Postdoctoral Fellow), **Bioimaging and Wearable Sensing Systems for Healthcare Applications** (Sep 2021 – Aug 2022). Senior II Analog & Mixed-Signal Engineer, Synopsys, Mississauga, ON, Canada.
7. Dr. Sumit Majumder (Mitacs Elevate Postdoctoral Fellow), **Sensing Systems for Ubiquitous Healthcare** (Jan 2021 – Dec 2021). Assistant Professor of Biomedical Engineering, Chittagong Univ. of Engineering Technology, Bangladesh.
8. Dr. Xiaokang Wang (Postdoctoral Fellow), **Big Data Analytics** (January 2018 – December 2021). Co-supervised with Prof. Laurence T. Yang. Professor, Hainan University, Hainan, China.
9. Dr. Arif Alam (Mitacs Elevate Postdoctoral Fellow) **Smart Sensors for Water Quality Monitoring System** (Feb 2019 – October 2021). Senior Silicon Design Engineer, Advanced Micro Devices, Thornhill, ON, Canada.
10. Cheng Dai (Visiting Scholar), **Human Behavior Analysis and Applications Based on Deep Learning** (December 2019 – December 2020). Professor, Sichuan University, Chengdu, China.
11. Dr. Shupeng Chen (Visiting Scholar), **Information Technology** (September 2019 – August 2020), Lecturer, School of Microelectronics, Xidian University, Xi'an, China.
12. Dr. Sheng Xie (Visiting Scholar), **Information Technology** (March 2019 – March 2020), Associate Professor, School of Microelectronics, Tianjin University, Tianjin, China.
13. Dr. Kuntao Ye (Visiting Scholar), **Information Technology** (September 2019 – March 2020), Associate Professor, JiangXi University of Science and Technology, Ganzhou, Jiangxi, China.
14. Dr. Mohamed Naser (Visiting Scholar), **Theoretical Modeling of Functional Brain Imaging** (September – December 2019). Assistant Professor, King Faisal University, Ahsaa, Kingdom of Saudi Arabia.
15. Dr. Shulong Wang (Visiting Scholar), **Information Technology** (December 2018 – December 2019), Associate Professor, School of Microelectronics, Xidian University, Xi'an, China.
16. Dr. Honghai Deng (Visiting Scholar), **Sensors for Environmental Applications** (December 2018 – November 2019), Assistant Professor of Electrical Engineering, School Electronics and Information, Nantong University, Nantong, China.
17. Dr. Lixue Zhou (Visiting Scholar), **Bioimaging Circuits** (October 2018 – September 2019), Senior Engineer, Xi'an Electronic Engineering Research Institute, Xidian University, Xi'an, China.
18. Dr. Qingling Liu (Visiting Scholar), **Information Security and Artificial Intelligence for Smart Medical Home** (September 201 8- September 2019), Assistant Professor, College of Information and Communication Engineering, Harbin Engineering University, Harbin, China.
19. Dr. Si Pan (Postdoctoral Fellow), **Sensors for Water Quality Monitoring** (September 2018 – January 2020). Research Associate, Jilin University.
20. Li Peng (Visiting Scholar), **Smart Software (Deep Convolutional Computation Models) for Big Data Applications** (October 2018 – September 2019), Postdoctoral Fellow, School of Software Technology, Dalian University of Technology, Dalian, China.
21. Xuanjie Ye (Visiting Scholar), **Silicon-based Photodetection Systems for Biomedical Applications** (August 2017-July 2018), Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China.
22. Dr. Hao Jin (Visiting Associate Professor), **Sensor Interface and Processing Electronics and Sensor Systems** (January 2017 – January 2018), Associate Professor, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China.
23. Dr. Sasan Naseh (Research Engineer), **Wearable Sensors for Health Monitoring** (Dec 2016 to Nov 2017), Professor, Ferdowsi University, Mashad, Iran.
24. Dr. Akila Derardja (Visiting Scholar), **Mechanical Properties of Cells** (July – August 2017). Professor, University of Batna II, Batna, Algeria.
25. Dr. Khedidja Benseddik (Visiting Scholar), **Mechanical Properties of Cells** (July – August 2017), Maitre de Conference, University of Batna II, Batna, Algeria.
26. Ramez Mebrouk (Visiting Student), **Mechanical Properties of Cells** (July – August 2017), Medical Student,

University of Batna II, Batna, Algeria.

27. Besma Beloucif (Visiting Student), **Mechanical Properties of Cells** (July – August 2017), Medical Student, University of Batna II, Batna, Algeria.
28. Navita Dayal (Research Assistant), **Health Aspects of Walking Signals** (January-April 2017), Founder and President, GLITR, Hamilton, Ontario, Canada.
29. Mozhgan Salimi Parsa (Visiting Student from University of Tehran), **Wearable Sensors for Health Monitoring** (May 2016 to August 2017). Ph.D. Student, Western University, London, Canada.
30. Dr. Kashif Nisar (Visiting Assistant Professor), **ICT for Elderly Healthcare** (Mar 2017 - Feb 2018; Jan - Dec 2016), Associate Professor, Faculty of Computing and Informatics, University Malaysia Sabah, Malaysia.
31. Dr. Mehdi Kazemeini (Visiting Professor), **Plastic Microelectronics** (February 2000 – December 2016). Research Associate, McMaster University.
32. Dr. Hyuck Jin Kwon (Postdoctoral Fellow), **Sensors for Water Quality Monitoring** (October 2013 – Nov 2015). Research Engineer, York University, York, Ontario, Canada.
33. Dr. Lluis Marsal (Visiting Professor), **Nanotechnology** (May-August 2015), Vice-Rector and Professor, URV, Tarragona, Spain.
34. Dr. Mohamed Naser (Visiting Assistant Professor), **Theoretical Modeling of Functional Brain Imaging** (September – October 2016, July - August 2014). Assistant Professor, King Faisal University, Ahsaa, Kingdom of Saudi Arabia.
35. Dr. Matiar Howlader (Senior Research Associate), **Micro- & Nano-Systems Integration Technologies** (July 2010-December 2017). Assistant Professor, McMaster University.
36. Dr. Ognian Marinov (Senior Research Associate), **Low Frequency Noise and Reliability in Semiconductor Devices** (Oct. 1999 – December 2016). Test Engineer, D&V Electronics, Woodbridge, Ontario, Canada.
37. Fangfang Zhang (Research Associate), **System Integration Technologies** (July 2010- March 2014).
38. Dr. Jianjun Gao (Visiting Professor), **RF Noise** (July – August 2012), Professor, East China Normal University, Shanghai, China.
39. Dr. Shadrokh Samavi (Visiting Professor), **FPGA Implementation of DNA Microarrays Electronic Detection Systems** (July – August 2012; Sep 2002 – Aug 2003; and Sep -2008 - August 2009). Professor, Isfahan University, Iran.
40. Dr. Fei Xu (Visiting Scholar), **Impedance Spectroscopy of Biological Systems** (March 2011-March 2012), Assistant Professor, Shanghai Dianji University, Shanghai, China.
41. Euiyoung Jeong (Visiting Researcher), **Static and Noise Modeling of Nanoscale Junctionless Transistors** (July – 2011-January 2012), PhD student, POSTECH, Pohang, South Korea.
42. Marcelo Macchi da Silva (Visiting Scholar), **High-speed, High-sensitivity CMOS Imaging Systems** (June 2010 - August 2010), Graduate Student, UNICAMP, Campinas, Brazil.
43. Dr. Yiqi Zhuang (Visiting Professor), **Low Frequency Noise and Reliability in Semiconductor Devices** (September – December 2009). Dean and Professor, XiDian University, Xi'an, China.
44. Dr. Abel García Barrientos (Post-Doctoral Fellow), **Noise Modeling in Advanced MOS Devices** (Jul-August and October-December 2009), Professor, Universidad Politécnica de Pachuca, Pachuca, Hidalgo, México.
45. Dr. Benjamin Iniguez (Visiting Professor), **Compact Modeling of Semiconductor Devices** (October 2006, November 2009), Professor, URV, Tarragona, Spain.
46. Dr. Hamdy Abd El Hamid (Post-Doctoral Fellow), **Nanoscale Silicon Transistors** (October 2007-September 2009). Assistant Professor, The British University, Cairo, Egypt.
47. Dr. Akila Derardja, (Visiting Scholar), **Microfabricated Reference Electrodes for Biosensor Applications** (June-August 2009) Maitre de Conference, Faculté de Médecine, Université de Batna, Algeria.
48. Dr. PK Basu (Visiting Professor), **Planar Lightwave Circuits** (October 2001 - December 2001, Summer 2002, September-November 2008, July – September 2013). Professor, Electronics Department, University of Calcutta, India.
49. Augusto Ximenes (Visiting Scholar), **Optical Detection Systems** (December 2007-August 2008). PhD Student, UNICAMP, Campinas, Brazil.
50. Nishil Gupta, (Visiting Scholar), **Statistical Processing of Biomedical Data** (May – July 2007), PhD Student, IIT Delhi, India.
51. Dr. Matiar Howlader (Research Associate), **Packaging of Semiconductor Components** (April 2005 – June 2007). Assistant Professor, McMaster University.
52. Fernando de Souza Campos (Visiting Scholar), **Fluorescence Optical Detection Systems** (January – December 2006), Co-supervised his PhD thesis with Jacobus Swart of UNICAMP, Brazil. Assistant Professor, Electrical Engineering Department, Sao Paulo State University (UNESP), Brazil.
53. Dr. Faycal Saffih (Research Engineer), **Wireless Sensor Systems for In-Vivo Applications** (October 2005- September 2006). Pixel Architecture Designer, Voxtel, Beaverton, Oregon.

54. Dr. Guennadi Kouzaev, (Research Associate), **Modeling of Passive Microwave Components** (Oct. 2001 – August 2005). Professor, Norwegian Science and Technology University – NTNU, Trondheim, Norway.
55. Yogesh Ramadass (Research Assistant), **Broadband Circuits** (Summer 2004), Director of Power Management, Research and Development at Kilby Labs of Texas Instruments, Santa Clara, CA, USA.
56. Dr. Kamal Ghosh (Visiting Professor), **L.F. Noise Modeling** (Summer 2002). Professor, Calcutta, India.
57. Dr. Nikhil R. Das (Post-Doctoral Fellow), **Physics and Modeling of Photodetectors** (Sept. 1999 - August 2002). Professor, University of Calcutta, India.
58. Dr. C.X. Peng (Visiting Professor), **Computerized Instrumentation** (September 2001-December 2001). Professor, University of Central Michigan, Michigan, USA.
59. Dr. Yves Audet (Post-Doctoral Fellow), **Polymer Transistors** (June 2001-August 2001), Professor, Ecole Polytechnique de Montreal, Montreal, Quebec.
60. Dr. Subhananda Chakravarti (Post-Doctoral Fellow), **Polymer Transistors** (September 2000 - May 2001). Professor of Electrical Engineering, IIT Bombay, India.
61. Dr. Jiansheng Xu (Post-Doctoral Fellow), **Noise in Semiconductor Devices and Circuits** (May 2000 -May 2001) PDK/Design Automation Engineer, Skyworks Solutions, Inc. Irvine, CA, USA.
62. 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.
63. Dr. Plamen Kolev (Post-Doctoral Fellow), **Characterization of Semiconductor Devices** (May 98 - August 1999), Sr. Staff Engineer Advanced Modeling, Qualcomm, San Diego, CA.
64. Dr. Winnie Chu (Post-Doctoral Fellow), **Fabrication and Characterization of Chemical Sensors** (May 1998 - May 1999), CTO at Nanozen Industries, Vancouver, BC, Canada.
65. Dr. Xu-Yuan Chen (Post-Doctoral Fellow), **Noise in Semiconductor Devices** (May '97- November 1997), Professor, University of Tromso, Norway.
66. Dr. S. Rumyantsev (Visiting Senior Scientist), **Noise in Semiconductor Devices** (Dec. 1996 - June 1997, Spring 1998, Spring 1999). Professor, IOFFE Institute, St. Petersburg, Russia.
67. Dr. Anirban Bandyopadhyay (Post-Doctoral Fellow), **Physics and Modeling of Photodiodes** (Oct. '96 - July 1997), Senior Director, Strategic Applications, Mobility & Wireless Infrastructure, Global Foundries, Pleasanton, California.
68. Dr. M. Aoki (Visiting Senior Scientist) **Ultra-Low Power CMOS Devices and Circuits** (Summer 1996). Manager, Texas Instruments Research Labs, Tsukuba, Japan.
69. Dr. Edmundo Gutierrez (Visiting Professor), **Low Temperature Electronics** (Jan. 1996 - Dec. 1996), Director General and Titular Professor, INAOE, Puebla, Mexico.
70. 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.
71. 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.
72. ZP Zuo (Research Associate) **Semiconductor Device Parameter Extraction and Modeling** (May 1988 - May 1990) - Software Engineer, Cisco Ltd., California.

Ph.D. Students

73. Neha Bhattacharya (Ph.D.) **Nanomaterials-based Sensors for Gut Microbiome Applications** (May 2023 -). Co-supervised with Dr. Ravi Selvaganapathy.
74. Mohammad Nami (Ph.D.), **Nanomaterials-based Sensors for Smart Packaging** (May 2022 -).
75. Yeganeh Nasrollahzadeh (Ph.D.) **Free-space Optical Communications,** (January 2022 -). Co-supervised with Dr. Shiva Kumar.
76. Mannan Mukherjee (Ph.D.) **Data Analytics for Engineering & Health Applications** (September 2021 -). Co-Supervised with Profs. N. Balakrishnan and S. Kumar.
77. Sophini Subramaniam (Ph.D.) **Wearable Sensors for Health Monitoring** (December 2021 -).
78. Mahtab Taheri (Ph.D.) **Nanomaterials-based Sensors for Smart Packaging** (May 2020 -).
79. Abu Ilius Faisal (Ph.D.), **Smart Knee Monitoring System** (May 2020 -).
80. Abhiroop Chowdhury (Ph.D.) **Data Analytics for Engineering & Health Applications** (September 2021 – April 2024). Co-Supervised with Profs. N. Balakrishnan and S. Kumar. Transferred to another group.
81. Amirmohammad Hallajzadeh (Ph.D.) **Nanomaterials-based Sensors for Gut Applications** (May 2022 -). Co-supervised with Dr. Ravi Selvaganapathy. Left back to Iran due to illness
82. Mohammad Rezaul Islam (Ph.D.) **Bioimaging Circuits and Systems** (May 2021 - April 2023). Transferred to

Master's program.

83. Wei Jiang (Ph.D.) **CMOS Single-Photon Avalanche Diodes Towards Positron Emission Tomography Imaging Applications** (Sep 2017 - Sep 2021). Senior II Analog & Mixed-Signal Engineer, Synopsys, Mississauga, Canada.
84. Sumit Majumder (Ph.D.) **Wearable Systems For Health Monitoring Towards Active Aging** (Jan 2016 –Dec 2020). Assistant Professor of Biomedical Engineering, Chittagong University of Engineering Technology, Bangladesh.
85. Mahdi Naghshvarianjahromi (Ph.D.) **Brain Inspired Intelligence for Engineering and Healthcare Applications** (September 2015 – August 2020). Co-supervised with Dr. S. Kumar. Co-founder and CTO of PBS Intelligent Optical Networks, Hamilton, ON, Canada.
86. Ahmed Elsharabasy (Ph.D.) **Optimization of Rectennas for Thermal Energy Harvesting** (September 2015 – December 2019). Co-supervised with Dr. M. Bakr, R&D Engineer II, ANSYS Inc., Vancouver, BC, Canada.
87. Mrwan Alayed (Ph.D.) **Development of Time-Resolved Diffuse Optical Systems Using SPAD Detectors and an Efficient Reconstruction Algorithm** (January 2014 - February2019). Assistant Professor & Researcher in Photonics, King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia
88. Arif Alam (Ph.D.) **A Low-cost Integrated Water Quality Monitoring System** (September 2013 – January 2019) Co-supervised with Dr. M Howlader. Senior Silicon Design Engineer, Advanced Micro Devices, Thornhill, ON, Canada.
89. Xiaoqing Zheng (Ph.D.) **Solid-State Imagers for PET** (Sep. 2012 – November 2017), Senior Design Engineer 2, Xilinx, Ottawa.
90. Xiaokang Wang (Ph.D.) "**Highly-Efficient Tensor Decomposition and its Applications**"(Sep 2012 – June 2017), Co-supervised with Prof. Laurence T Yang. Professor, Hainan University, Haikou, China.
91. Hani Alhemsi (Ph.D.) **CMOS Photo-Detector for Time-Resolved Near Infrared Spectroscopy** (Sep. 2011 - June 2016). On leave in good standing.
92. Pilar López Varo (Ph.D.), **Compact Modeling of Physical Mechanisms in Organic Solar Cells** (Ap 2013 – Jan 2017). Co-supervised with Prof. JA. Jiménez-Tejada. Engineer, Institut Photovoltaïque d'Île-de-France, Palaiseau, France.
93. Yiheng Qin (Ph.D.) **Sensors for Water Quality Monitoring** (Sep 2013 – April 2017) Co-supervised with Dr. M Howlader. Touch ID Senior Engineer, Apple Inc., San Diego, USA.
94. Zeng Cheng (Ph.D.) **Single Photon Avalanche Diode and Circuits in CMOS towards Positron Emission Tomography Imaging Applications** (Sep. 2012 - August 2016). Co-supervised with Prof. Hao Peng. Manager & Team Lead, ASIC Design, Mixed-Single PHY/System, Synopsys Inc, Ottawa.
95. Tianyi Guo (Ph.D.) **An Optical System towards In-line Monitoring of Bacteria in Drinking Water** (September 2010 – March 2016). Co-supervised with Prof. Chang-Qing Xu. Researcher, Institute of Microelectronics - Chinese Academy of Sciences, Beijing, China and General Manager, Forsee Instruments Ltd., Hamilton, Canada.
96. Hytham A. Afifi (Ph.D.) **Theoretical Modeling of Nanoscale Semiconductor Devices** (Sep. 2010 -). On leave from graduate studies.
97. Darek Palubiak (Ph.D.), **CMOS Single-photon Avalanche Diodes and Time-to- digital Converters for Time Resolved Fluorescence** (Sep. 2009 – Sep 2015), Principal Applications Engineer, Cadence, Cork, Ireland.
98. Yasaman Sargolzaei Aval (Ph.D.) **Biomedical Imaging Systems** (September 2014 – August 2015). Transferred as a PhD student, USA
99. Zhiyun Li (Ph.D.) **Miniaturization of Time-Gated Raman Spectrometer with a Concave Grating and a CMOS Single Photon Avalanche Diode** (September 2010 – May 2015). Sr. Chip Characterization Engineer, Quantum-Si, Sunnyvale, California, USA.
100. Mohammadreza Dadkhah (Ph.D.), **CMOS Image Sensors with Compressive Sensing Acquisition** (Sep. 2008 – April 2013). Co-supervised with Prof. S. Shirani. Research and Development Manager, Avertus Inc., Toronto
101. Waleed Shinwari (Ph.D.), **Static and Dynamic Modeling of DNA Biosensors for Biomedical Applications,** (May 2007 – September 2011). Engineering Manager - Motion Sensing HW - Apple Inc, San Diego, USA.
102. Hossein Kassiri Bidhendi (Ph.D.) **High-speed, High-sensitivity CMOS Image Sensing** (Sep. 2010 – December 2010). Joined Ph.D. program at University of Toronto (Sept 2010-February 2011). Associate Professor at York University and Co-Founder and CTO, BrainCom.
103. Munir Eldesouki (Ph.D.) **CMOS Imagers for Low-level Light and High-speed Biomedical Applications** (February 2006 – November 2010). Founder and CEO, 4SIGHTED, Riyadh, Saudi Arabia & Toronto, Canada; President of King Abdulaziz City for Science and Technology (equivalent of NSERC and NRC in Canada), Assistant Minister at Ministry of Communications and Information Technology (MCIT) Riyadh, Saudi Arabia.
104. Mohamed Naser (Ph.D.) **Theoretical Modeling of Quantum Dot Infrared Photodetectors** (September 2005 – April 2010). Co-supervised with Prof. DA Thompson. Assistant Professor, King Faisal University, Ahsaa, Saudi Arabia.
105. Pablo Lara Bullejos, **Modeling of Physical Mechanisms in Organic Thin-Film Transistors and Related Structures** (Sep 2006-Oct 2009). Co-supervised with Prof. JA. Jiménez-Tejada. Researcher, Universidad de Granada, Spain.

106. 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. DA Thompson. Professor, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.
107. 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.
108. Hamed Mazhab Jafari (Ph.D.) **Ultra-wideband Systems for Medical Imaging** (September 2006-August 2007). Transferred to University of Toronto. Co-Founder and CEO, Envirosen Inc, Mississauga, Canada
109. 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. Principal Engineer, StarIC, Toronto, Canada.
110. 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. National Institutes of Health (NIH), Bethesda, Maryland, USA
111. 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.
112. Rizwan Murji (Ph.D.**) Low-Power CMOS Radio Frequency Integrated Circuits for Frequency Synthesis** (September 2002-August 2005), HW Applications Manager, Texas Instruments, McKinney, Texas, USA.
113. Yasser El-Batawy (Ph.D.) **Modeling of Advanced Photodiodes** (January 2001-April 2005). Professor, Engineering Physics Department, Cairo University, Egypt.
114. S Naseh (Ph.D.) **Investigation of Hot-Carrier Effects on RF CMOS Integrated Circuits** (Jan. 1999 – March 2005). Assistant Professor, Ferdowsi University, Mashad, Iran.
115. Yunxi Shi, (Ph.D.) **Design and Fabrication of Advanced Photodiodes** (May 2002-December 2004). Co-supervised with Prof. DA Thompson – left the Ph.D. program.
116. Mathieu Marin (Ph.D.), **Etude Experimentale du Bruit en 1/f Dans Les Composants CMOS Issus de Technologie Sub-0.18μm** (December 2003). Co-supervised with Mario DeMurcia, Université de Montpellier II, France. Engineer, ST Microelectronics, Grenoble, France.
117. Mojammel Al-Hakim, (Ph.D.), **Modeling of Ultra-small MOSFETs** (May 2003-August 2003), left program for personal reasons, Assistant Professor, BUET, Bangladesh.
118. CH Chen (Ph.D.) **Noise Characterization and Modeling of MOSFETs for RFIC Applications** (September 1998 - September 2002). Associate Professor, McMaster University, Hamilton, Ontario.
119. Y Xiao (Ph.D.) **Modeling of SAGCM Avalanche Photodiodes for Multi-Gigabit Optical Fiber Communications** (May 1997 -Dec 2001). Senior Research & Application Engineer, Crosslight Software Inc, Vancouver, BC, Canada.
120. 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.
121. W. Zhong (Ph.D.) **Modeling of Active and Passive Microwave Structures** (Jan. 1998 - May 1999, Ph.D. not completed), RF Engineer, Sierra Wireless, Vancouver.
122. S An (Ph.D.) **Material and Device Characterization of InP/InGaAs Avalanche Photodiodes for Multi-Gigabit Optical Fiber Communications** (January 1996 - Summer 1999), COO, Gamersgate AB, Toronto, Canada.
123. Mihai Margarit (Ph.D.) **Radio Frequency Integrated Circuits for Communications: Design, Analysis and Experiments** (September 1994 - May 1999), Senior Principal Engineer – Design Lead, NXP Semiconductors, San Francisco, USA.
124. 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.
125. Plamen Kolev (Ph.D.) **Development and Applications of a New DLTS Method and New Averaging Techniques** (September 1994-April 1998), Senior Staff Engineer, Advanced Modeling, QUALCOMM, San Diego, USA.
126. Xiaojun Zhao (Ph.D.) **Physics and Modeling of Photodiodes** (September 1994 -January 1995, Ph.D. not completed), Systems Engineer, JDS Uniphase, Ottawa.
127. 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), Founder and CEO, LVS DEBUG Solutions LLC, Santa Clara, USA.
128. Forrest Ma (Ph.D.) **Characterization and Modeling of SAGCM InP/InGaAs Avalanche Photodiodes for Multigigabit Optical Fiber Communications** (September 1991 - April 1995) - Executive Director, Comcast, Princeton, New Jersey, USA. (Joint supervision with Prof. S. Hardy, Engineering Science, SFU).

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

129. Zhengda Li (M.Eng.) **Low-power, Low-voltage Subthreshold Op-Amp** (Jan 2025-Aug 2025).

130. Zhenyu Zhao (M.A.Sc.) **Silicon-based SPAD Pixel and Applications** (Sept 2024 -).
131. Cheng Fei (M.A.Sc.) **Silicon-based SPAD Pixel and Applications** (Sept 2024 -).
132. Soumaiya Hoque (M.A.Sc.) **Silicon SPADs and Applications** (Jan 2024 -) Co-supervised with Dr. M.B. Elamien.
133. Anas Abdullah (M.A.Sc.) **Silicon SPAD Pixels and Applications** (Jan 2024 -) Co-supervised with Dr. M.B. Elamien.
134. Ronald Luo (M.A.Sc.), **Wearable Sensors for Health Monitoring** (September 2021 -).
135. Chengxing Leo Liu (M.A.Sc.), **CMOS Imagers for Engineering Applications** (September 2021 – December 2024).
136. Fang Ye (M.Eng.), **Designing High Quality Health Monitoring System as a PAC Architecture** (Sep 2022 – May 2024) Co-supervised with Dr. R. Khedri.
137. Junzhi Liu (M.A.Sc.), **Time-Controlled CMOS single-photon avalanche diode receivers towards optical wireless communication applications** (August 2021 – October 2023).
138. Xuanyu Qian (M.A.Sc.), **Modeling and design of single-photon avalanche diodes for LiDAR applications** (August 2021 - August 2023).
139. Junaid Siddiqui (M.A.Sc.), **Design of Biocompatible Asparagine-Graphene Oxide Free Chlorine Sensors Fabricated Using Solution-Based Processing** (July 2020 – October 2022).
140. Sophini Subramaniam (M.A.Sc.), **Wearable Sensors for Health Monitoring** (September 2020 – November 2021). Transferred to Ph.D. Program.
141. Ryan Scott (M.A.Sc.), **Design of A Time-to-Digital Converter and Multi-Time-Gated SPAD Arrays Towards Biomedical Imaging Applications** (September 2019 – August 2021). Analog and Mixed Signal Circuit Design Engineer II, Synopsys, Markham ON
142. Bhavya Parekh (M.Eng.), **Sensor Systems for Smart Packaging** (Sep 2019 – August 2020). Senior Business Analyst, Sunlife Financial, Toronto, Canada.
143. Pranali Rathi (M.Eng.), **Sensor Systems for Smart Packaging** (Sep 2019 – May 2020). Software Developer, SOTI Inc., Mississauga, Canada.
144. Gursimran Kaur Sarabha (M.Eng.), **Sensor Systems for Smart Packaging** (Sep 2019 – May 2020). Senior Technical Trainee, Toronto Hydro, Canada.
145. Heba Beshai (M.Eng.), **Sensor Systems for Smart Packaging** (Sep 2019 – April 2020), Senior Consultant, IBM, Toronto, Canada.
146. Yamn Chalich (M.A.Sc.), **Design of Time-Gated CMOS SPADs Towards High-Performance Imagers** (September 2017 – April 2020). Hardware Design Engineer, Qualcomm, Canada.
147. Abu Ilius Faisal (M.A.Sc.), **Development of a Low-Cost and Easy-to-Use Wearable Knee Joint Monitoring System** (September 2017 – April 2020). PhD student, McMaster University.
148. Dennis Clyne, (M.Eng.), **Software for Sensor Instrumentation Systems** (May 2017 – April 2018), Software Developer, Niscon Inc., Burlington, Canada
149. Javad Monshi Zadeh (M.Eng.), **Biomedical Imaging Systems** (September 2016 – December 2017). Firmware Engineer, AMD, Toronto, Canada
150. Andy Li, (M.Eng.), **ECG System for Long-term Monitoring** (Sep 2016-December 2016), Hardware Engineer, Innovere Medical Inc., Markham, Ontario, Canada.
151. Nathan DeJeong (M.Eng.), **Walking Parameters – Analysis** (Sep 2016- December 2016).
152. Navita Dayal (M.A.Sc.), **Health Aspects of Walking Signals** (January-December 2016). Founder and President, GLITR, Hamilton, Ontario, Canada.
153. Otmane Bekkaoui, (M.Eng.), **Walking Parameters Analysis** (May 2015 - May 2016), Resources Coordinator, Telus. Canada.
154. Priyanka Mandal (M.Eng.), **Walking Age Health Analyzer** (January-December 2015), PhD. Student, University of Calcutta, Kolkata, India.
155. Krishna Tank (M.Eng.), **Walking Age Health Analyzer** (Jan - Dec 2015). Consulting Engineer, Tata, Canada.
156. Niharika Mittal (M.Eng.), **Walking Age Health Analyzer** (May-Dec 2014). Consulting Engineer, Tata, Canada.
157. Jasmine Shant (M.Eng.), **Walking Age Health Analyzer** (May-Dec 2014). Consulting Engineer, Tata, Canada.
158. Leon Chen (M.Eng.), **ECG System for Long-term Monitoring** (September 2013 – April 2014). Senior Physical Design Engineer, TSMC, San Jose, California, USA.
159. Dip Patel (M.Eng.), **Smart Knee Monitoring System** (September 2013 – April 2014). Consulting Engineer, Chrysler, Brampton, Ontario, Canada
160. Aparna Murthy (M.A.Sc.), **Illumination Design for Dual View Endoscopic Imaging Design** (September 2010 -). Co-supervised with Prof. Qiyin Fang. Instructor, Calian Group, Borden, Ontario, Canada
161. Tamnun E Mursalin (M.A.Sc.), **Parallel Image Processing for High Content Screening Data** (Sep. 2010 – January

2013). Co-supervised with Prof. Qiyin Fang, Alexander Jeremic and David Andrews. Solutions Integration Consultant, Bell Business Markets, Mississauga, ON.

162. Amin Abbasfard (M.Eng.), **ECG System for Long-term Monitoring** (Sep 2011 – Dec 2012). Engineer, Toronto.
163. Feng Cong (M.A.Sc.), **Experimental Study of DKPP-βT Polymeric Thin Film Transistor** (Sep 2010 – Dec 2012). Machine Learning Consulting Engineer, San Francisco Bay Area. USA.
164. Ebrahim Nemati (M.A.Sc.), **In-Pixel Time Digital Converter for Time-of-Flight PET Imaging** (September 2010 – September 2012). Senior Research Scientist in Digital Health Lab, Samsung Research America, Santa Clara, California.
165. Anton Knigavko (M.Eng.), **Optical Grating for Micro-Raman Spectrometer** (September 2010 – Dec 2011). Automated Mineralogy Scientist, Activation Laboratories Ltd., Ancaster, ON, Canada.
166. Sumit Majumder (M.A.Sc.), **Random Telegraph Signal Noise in CMOS Image Sensor (CIS) and Use of a CIS in a Low-Cost Digital Microscope** (September 2009 – September 2011). Electronics Engineer, Fugro Canada Corp., Mississauga, Canada.
167. Kajan Kanagaratnam (M.Eng.), **Low-cost, High-speed Digital Microscope using CMOS Image Sensors** (September 2010- August 2011). Software Engineering Manager, Data Security, IBM Canada, Markham.
168. Salman Safari, (M.A.Sc.) **Microfluidic Reference Electrodes for use in BioFETs Sensor System** (September 2008 – November 2010). Co-supervised with Prof. R. Selvaganapathy. President and CTO, Recion Technologies, Inc. Edmonton, Alberta.
169. Roy Wang (M.A.Sc.) **Dual-view Catadioptric Objective Lens Design for Endoscopic Fluorescence Imaging Applications** (Sep 2008 – Sep 2010). Co-supervised with Qiyin Fang. Ph.D. student, University of Ottawa.
170. 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. Senior Software Development Engineer, Amazon, Toronto, Canada
171. Hossein Kassiri Bidhendi (M.A.Sc.) **Design of Ultra-Wideband RFICs for Medical Imaging Applications** (Sep. 2008 – September 2010). Ph Associate Professor at York University and Co-Founder and CTO, BrainCom.
172. 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. Developer/Administer, Legendary Social Media Services Inc., Hamilton, Canada.
173. Wei Zhou, (M.A.Sc.) **A Wireless Sensor System and Application of Traditional Chinese Pulse Diagnosis for Individual Healthcare Monitoring** (August 2007 – November 2009). Entrepreneur (started company), China.
174. E. Malick Gaye, (M.A.Sc.) **Wireless Sensor Systems for In-Vivo Applications** (September 2008 - April 2009) Engineer, Crone Geophysics.
175. Jason Barnet, (M.A.Sc.) **RF Noise Modeling and Design of Low-Noise RFICs** (September 2008 – December 2008). Co-supervised with Prof. CH Chen. Went to Ontario's Teacher's College
176. Gefei Zhou, (M.A.Sc.) **Narrow-Band Receiver and Ultra-Wideband Low Noise Amplifier** (September 2007 – September 2009). Entrepreneur (started company), China.
177. Kai Wang, **Portable Magnetic Tracking Systems Exploiting Neural Networks and Space Mapping Modeling**, (September 2006 – September 2008). Co-supervised with Prof. M. Bakr. Software Engineer, MDA Systems Ltd., Ottawa, Ontario, Canada.
178. Moussa Kfouri (M.A.Sc.) **Toward a Miniaturized Wireless Fluorescence-Based Diagnostic Imaging System** (January 2006 - April 2008). Co-supervised with Prof. Q Fang. Associate Vice-President, Product Operations, Geotab Inc., Oakville, Canada.
179. Kurt Huang (M.A.Sc.) **Wireless Sensor Systems for In-Vivo Applications** (September 2005-April 2008). Sales Manager/FAE, Advanpower International Ltd., China
180. 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
181. Waleed Shinwari (M.A.Sc.), **Modeling and Simulation of Electrochemical DNA Sensors in CMOS Technology** (September 2005 – April 2007). Engineering Manager - Motion Sensing HW - Apple Inc, San Diego, USA.
182. Wei Liu (M.A.Sc.) **Electronic Systems for Biomedical Applications** (September 2004 -). Co-supervised with Prof. S Hranilovic. Systems Engineer, Nortel, Ottawa.
183. 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. Co-Founder and CEO, Envirosen Inc, Mississauga, ON.
184. Samar Mikhail Abdelsayed (M.A.Sc.) **Power Amplifiers and Antennas for Implantable Biomedical Transceivers** (January 2004 – April 2006). Co-supervised with Prof. N. Nikolova. Application Development Consultant, RIM,

Waterloo, Canada.

185. Munir Eldesouki (M.A.Sc.) **Design of Integrated Power Amplifier Circuits for Biotelemetry Applications** (Jan 2004 – Jan 2006). Co-supervised with Prof. Y. Haddara. Founder and CEO, 4SIGHTED, Riyadh, Saudi Arabia & Toronto, Canada; President of King Abdulaziz City for Science and Technology (equivalent of NSERC and NRC in Canada), Assistant Minister at Ministry of Communications and Information Technology, Riyadh, Saudi Arabia.
186. Ehab Y El-Badry, (M.A.Sc.) **Ultra-Wideband, Low-Power, Silicon-Germanium Distributed Amplifiers** (Sep 2003 – Dec 2005). Co-supervised with Prof. Y. Haddara. Founder, Stay Human Consulting, Raleigh-Durham, USA.
187. Nabeel Jafferali (M.A.Sc.) **Low-Voltage, Low-Power CMOS Downconversion Mixers** (September 2002 –September 2005). President, X2 Networks Inc., Toronto, Canada.
188. Juan Carlos Ranuarez (M.A.Sc.) **Broadband Microwave Amplifiers in Deep-Submicron CMOS Technology** (Jan 2004 – Aug 2005). Co-supervised with Prof. J. Chen. Director, Spectrum and Device Technologies, Telus, Toronto.
189. 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.
190. 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.
191. 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.
192. 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.
193. 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.
194. Rizwan Murji (M.A.Sc.) **1.8V Monolithic CMOS Nested Loop Frequency Synthesizer for GSM Receivers at 1.8-GHz** (September 1999 –December 2002). Senior Electronics Engineer, Motorola Inc., Schaumberg, Illinois, USA.
195. Zhenwen Wang (M.A.Sc.) **Modeling of Passive Microwave Circuit Elements** (January 00 -September 02). Engineer, Faculty of Science, University of Waterloo, Waterloo, Ontario.
196. A K M Mollah (M.Eng.) **Lateral BJT Circuits** (Jan. 2002 -Aug. 2002) Transferred to UBC.
197. Tarek Sadek (M.Eng.) **Characterization and Modeling of Varactors in Silicon CMOS Technology** (September 2001 -January 2002), transferred to another group. Executive Director, Centre for Engineering Innovation & Entrepreneurship (CEIE), Toronto Metropolitan University, Toronto.
198. Rami Al-Idrissi (M.Eng.) **Modeling of Passive Microwave Circuit Elements** (September 1999 -April 2001), Engineer, Saudi Arabia.
199. 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), Vice President & Managing Director, Fivetran , Bengaluru, India and Co-Founder & Chairman, NEXTFANG, Bangalore, India.
200. 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.
201. M. Oulmane (Engineer's Diploma Thesis) **Noise Studies in MOSFETs** (Spring 1997 and 1998), Graduate student, McGill University.
202. CH Chen (M.A.Sc.) **High Frequency Noise Modelling of MOSFETs** (September 1994-December 1997).
203. Tim Hardy (M.A.Sc.) **Charge-Coupled Device Systems** (September 1994-August 1997), Engineer, NRC, Victoria.
204. 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.
205. Xiaotang Lu (M.A.Sc.) **Electrical Characteristics of Polymer-Based Field Effect Transistors** (Jan. 1992- Sept. 1993) (Joint supervision with Prof. S Holdcroft, Chemistry, SFU). RF Engineer, Hewlett-Packard, California
206. Yu Zhu (M.A.Sc.) **Low Frequency Noise in MOSFETs: Theory and Experiments** (January 1991 - July 1992) - Manager, Microsoft Corporation, Seattle, Washington.
207. 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.
208. 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.
209. 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.
210. XM Li (M.A.Sc.) **Hot Carrier Degradation Studies at the Si-SiO_2 Interface in Short Channel MOSFETs** (September 1989-May 1991) - Process Engineer, Rockwell International, Newport Beach, California.
211. 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.

212. 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

213. Andy Li, **Smart Sensors for Intelligent Packaging** (Aug 2023 – August 2025)
214. Shiyi Yang, **Software for Healthcare Applications** (May 2022 – Dec 2025).
215. Zhenyu Zhao, **SPADs and SPAD- Applications** (January – August 2024)
216. Elston Almeida, **SPADs and SPAD- Applications** (January – July 2024)
217. Parth Mistry, **SPADs and SPAD- Applications** (January – April 2024)
218. Baoqi Zhu, **Wearable Sensors** (January – April 2024)
219. Rocco Mak, **Wearable Sensors** (January – April 2024)
220. Zhengda Li, **Smart Sensors for Intelligent Packaging** (January – April 2024)
221. Aninda Sarkar, **Smart Sensors for Healthcare Applications** (May – Aug 2023).
222. Andrew Ye, **Smart Sensors for Healthcare Applications** (May – Aug 2023, May-Aug 2022).
223. Shyavan Sridhar, **Software for Smart Sensor Applications** (May-August 2022).
224. Manvir Bhangu, **Smart Sensors for Healthcare Applications** (May-August 2022).
225. Vivek Patel, **CMOS Imaging Sensors** (May-August 2021). Graduate Student, McGill University.
226. Chengxing Liu, **CMOS Imaging Sensors** (May-August 2021). Graduate Student, McMaster University.
227. Samarth Kumar, **Smart Tele-Health Monitoring Systems** (May– Aug 2021). Undergraduate Student, McMaster Univ.
228. Fang Ye, **AI for Healthcare Applications** (May– August 2021). Java Developer, Modulus Data, Quebec City, Canada.
229. Samarth Kumar, **Developing a Smart Tele-Health Monitoring Systems** (May– August 2020). Undergraduate Student, McMaster University.
230. Ryan Scott, **Developing a Smart Health Monitoring Systems** (January– April 2019). Analog and Mixed Signal Circuit Design Engineer II, Synopsys, Markham, Canada.
231. Junaid Siddiqui, **Developing a Smart Mannequin for ECG Training** (September 2017 - April 2018). Graduate Student, McMaster University.
232. Ishaq Aden-Ali, **Near-Infrared Imaging System** (May - August 2017). Graduate Student, McMaster University.
233. Hossein Rejali, **ECG Motion Artifact Analyses Using Inertial Sensors** (January – April 2017). MD Candidate, Poznan University of Medical Sciences
234. Alejandro Ramos, **ECG Motion Artifact Analyses Using Inertial Sensors** (January – April 2017). Solutions Engineer, VGS, Toronto, Ontario, Canada.
235. Omar Nassif, **ECG Motion Artifact Analyses Using Inertial Sensors** (January – April 2017).
236. Chris Williams, **Developing a Smart Mannequin for ECG Training** (January – April 2017). Graduate Student, Queens University.
237. Siyang Li, **Smart Knee Monitoring System**, (Jan 2016 - April 2016).
238. Andrew Wynn-Williams, **Smart Knee Monitoring System**, (Jan 2016 - April 2016).
239. Daniel Allen, **Sensing Systems for Ubiquitous Healthcare** (May –August 2015).
240. Joshua Friedland, **Knee Brace Monitoring System**, (Jan 2014 - April 2015).
241. Shayan Mukhtar, **Knee Brace Monitoring System**, (Jan 2014 - April 2015).
242. Heba Osman, **Walking Age Analyzer System**, (Jan 2014 - April 2015).
243. John Louka, **Knee Brace Monitoring System**, (Sep 2012 - April 2015).
244. Chris Williams, **Testing and Analysis of Non-Contact Capacitive ECG Electrodes** (May - August 2014).
245. MM Aslam, **Smart Knee Monitoring System** (September 2013 – April 2014).
246. Naufil Khan, **Smart Knee Monitoring System** (September – December 2013).
247. Jason Paquette, **Dissolved Oxygen Potentiostat System** (May – August 2011).
248. Ogonna Igwebe, **Dissolved Oxygen Potentiostat System** (May – August 2011).
249. Eric Monteiro, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
250. Steve Petryschuk, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
251. Josh Wellstood, **Knee Brace Monitoring - Auora**, (Sep 2010 - April 2011).
252. Mehran Reza, **Electrotaxis – Experimental Studies** (Sep 2010- Apr 2011) co-supervised with Prof. R Selvaganapathy.

253. Adeel Alam, **Integrated Temperature, Light and Humidity Monitoring System for the Hospital Environment** (Sep 2009 - April 2010).
254. Mohammad N. Arabi, **Towards a Non-Intrusive Pulse Oximeter System with Long-term Mobile Monitoring** (Sep 2009 - April 2010).
255. Hanseul Choi, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 09 - Apr 10).
256. Winston De Armas, **Design of a Wireless, Non-invasive Long-term ECG Monitoring System for At-risk Patients** (Sep 2009 - April 2010).
257. Sandra Escandor, **Applying Multivariate Normal Analysis in a Personal Vital Stats Monitor** (Sep 09 - April 2010).
258. C Larndorfer, **Contactless, Continuous & Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 2009 - Apr 2010).
259. Emily Lukes, **Contactless, Continuous & Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 2009 - Apr 2010).
260. Dhvani Parekh, **Designing Heart rate, Blood Pressure and Body temperature Sensors for Mobile-On-call System** (Sep 2009 - April 2010).
261. Reinhard Peer, **Contactless, Continuous and Mobile ECG Monitoring on a Shirt – the "c-shirt"** (Sep 09 - Apr 10).
262. Christina Tan, **Integrated Temperature, Light and Humidity Monitoring System for the Hospital Environment** (Sep 2009 - April 2010).
263. Kirsten Zernask-Cebek, **Mobile On-call: Design of a Non-invasive, Non-intrusive Personal Vital Signs Monitor**, (Sep 2009 - April 2010).
264. Adeel Alam, **Statistical Processing of Biomedical Data** (May – August 2009), co-supervised with Prof. Qiyin Fang.
265. Timea Maxim, **Biophotonics** (May – August 2009), co-supervised with Prof. Qiyin Fang.
266. David Zhitomirsky, **Reference Electrodes for Biosensors** (Summer 2008), co-supervised with Prof. Ravi Selvaganapathy.
267. Paul Quevado, **Biosensing Circuits** (Summer 2007). Senior Embedded System Designer at JDRF Electromag Engineering Inc., Toronto, Ontario, Canada.
268. Muayad Tarabain, **Ultra-wideband Circuits** (Summer 2007).
269. Mojtaba Hodjat-Shamami, **RF Integrated Circuits** (Summer 2007).
270. Siyan Tan, **Ultra-wideband Circuits** (Summer 2006).
271. James Mondry, **Fluorescence Imaging System** (Spring 2006).
272. Hamed Mazhab-Jaffari, **Wireless Imaging Circuits** (Summer 2004).
273. Omar Laldin, **Wireless Imaging Circuits** (Summer 2004).
274. Anirood Mehta, **Hearing-Aid Integrated Circuit** (Spring 2004).
275. Alan Chik, **Hearing-Aid Integrated Circuit** (Spring 2004), Engineer, Hong Kong.
276. Lyn Khine, **Radio Frequency Integrated Circuits** (Summer 2002, Summer 2003), Engineer, Singapore.
277. Wai Ngan, **Radio Frequency Integrated Circuits** (Summer 2001, 2002, 2003), Sr Staff, Product Engineer, Irvine, CA.
278. Suzanne Cheng, **Parameter Extraction of MOSFETs** (Summer 2002), Engineer, Boeing Corp., Seattle, Washington.
279. Tim Norman (B.A.Sc.) **Modeling of Gated Lateral Bipolar Transistors** (May 1999 - December 1999), Director, Hardware Engineering, Ciena, Ottawa.
280. Miguel Urteaga (B.A.Sc.) **Modeling of Passive Microwave Circuit Elements** (May 1998-May 1999). Graduate Student, University of California, Santa Barbara. Teledyne Scientific Company, Thousand Oaks, CA, USA.
281. Geoff Duerden (B.A.Sc.) **The Development of hearing Aid Circuit Applications Using Gate Controlled lateral PNP Transistors** (Jan 1998 - Aug 1998), Senior Member Of Tech Staff, Introspect Technology, Montreal, Canada.
282. Lalit Nathawad (B.A.Sc.) **Direct Extraction of AC Equivalent Circuit Parameters of Polysilicon Emitter Bipolar Transistors** (1996-1997), Principal/Mgr, Analog IC Design, Qualcomm, Inc., San Diego, USA.
283. Lonnell Peters (B.A.Sc.) **Circuit Applications Using the Gate-Controlled Lateral PNP Transistor** (1996-1997), Ph.D. student, University of Michigan, Ann Arbor.
284. Vien Van (B.A.Sc.) **SPICE Modelling of Lateral PNP Bipolar Junction Transistors,** thesis completed in Summer 1995 - Professor, University of Alberta.
285. Dewey Liew (B.A.Sc.) **Implementation of a Two-Dimensional Lateral PNP Transistor Model in TSUPREM-4 and MEDICI**, Engineer, NRC, Vancouver.
286. W. Dall (B.A.Sc.) **Developing a High-Speed Linear CCD Imaging System,** thesis completed in Summer 1995 - Electronic Engineer, CREO Products, Vancouver.
287. Wing Suen Kwan (B.A.Sc.) **Computer Simulation and Modelling of a Hot-Carrier Damaged 1.2 □m LDD MOSFET** (graduated in Spring 1995) Design Automation Engineer, Conexant Inc., Newport Beach, California.
288. Nick Toth (B.A.Sc.) **Design of a Wide-Band IF Amplifier** (graduated in Summer 1994) - Design Engineer, Photon

Systems Inc., Vancouver.

289. Anthony Ng (B.A.Sc.) **Methods for Measuring Electromigration Performance in VLSI Devices** (graduated in Spring 1991), Electron Systems Manager, Texas Instruments, Tustin, California.
290. Colin Quon (B.A.Sc.) **Hot-Carrier-Induced Effects in Short Channel NMOS Devices** (graduated in Spring 1991), CEO, Excelar Technologies, Vancouver, BC, Canada.
291. 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.
292. Cameron Alakija (B.A.Sc.) **Characterization and Analysis of Small Geometry N-Channel MOSFETs at Cryogenic Temperatures** (graduated in Fall 1989) - Senior Engineer at Space Micro Inc., San Diego, CA, USA.
293. Errol Samuelson (B.A.Sc.) **A Solid-State Imaging System for Quantitative Microscopy** (graduated in Fall 1989) - Electronic Engineer, MPR Teletech, Burnaby, B.C.
294. 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.
295. Gourmail Kandola (B.A.Sc.) **Development of a Prototype System for Metaphase Finding** (graduated in Spring 1989) - Electronic Engineer, VTECH, Richmond, B.C.

High School Students (Most Recent)

1. Kadhir Ponnambalam, *Sensors*, Hillfield Strathallan College, Hamilton (May 2023 – present).
2. Aidan Woods, *Sensors*, St. Mary Catholic Secondary School, Hamilton (January 2024 – June 2024).

SERVICE

Personal Vision, Mission and Guiding Principles

Vision: Be impactful, honest, and evidence-driven, and strive for continuous improvements in service activities.

Mission: Create and contribute to an inclusive, collegial and caring environment where everyone is empowered to play to their strengths to advance the purpose and goals of the service activity. Inspire positive change and strive towards personal fulfillment.

Eight Guiding Principles in Service Activities and Societal Responsibilities

Celebration – Recognize individual and team contributions to advance engagement and improve best practices.

Collaboration – Work as partners and teams, and be well-prepared with reliable information.

Communication – Be an active listener, articulate and transparent.

Compassion – Empower everyone through inclusion, respect and kindness.

Fulfillment – Provide rewarding and meaningful experiences through active engagement.

Integrity – Be evidence-driven, honest and accountable.

Resourcefulness – Be creative, flexible and innovative.

Thrive – Go beyond ordinary to achieve the exceptional and extraordinary.

McMaster University, Professional & Non-Professional Service

University Service – Current/Recent Examples

- *Director*, **Micro- and Nano-Systems Laboratory** (MNSL) (2012 – present)
- *Chair*, **Hiring Committee**, ECE Department (2022-2023).
- *Elected Chair*, **Tenure & Promotion Appeals Nominating Committee**, McMaster University (2018 – present).
- *Honorary Co-Chair*, African Caribbean Faculty Association of McMaster (ACFAM). Co-authored proposal to Senior Univ. Leaders that led to the university-wide "***Black Academic Excellence Cohort Hiring Initiative***". (2020 – present).
- *Member*, Faculty Selection Committee for the "***Black Academic Excellence Cohort Hiring Initiative***" (2020-2022).
- *Faculty Representative* to all departments in Engineering hiring committees for the "***Black Academic Excellence Cohort Hiring Initiative***" (2020-2022).
- *Chair*, ACFAM THRIVE (Mentoring) Program for Black and Racialized Minority Faculty Members and Post-PhD Researchers (2021 – present).
- *Mentor*, Black Students Mentorship Program (BSMP), McMaster University (2019 – present).

- *Member*, **President's Committee - *Canada-Caribbean Institute* (*CCI*),** (2022 – preset).

Previous University Service –Partial List

- *Member*, University Senate.
- *Member*, Provost and Vice-President Academic Search Committee.
- *Member*, Dean of Engineering Search Committee.
- *Member*, Dean of Engineering Advisory Board.
- *Member* (*Faculty Representative*), Chair of Mechanical Engineering Search Committee.
- *Member* (*Faculty Representative*), Chair of Engineering Physics Search Committee.
- *Elected Member*, ECE Department Promotion and Tenure Committee (every year to 2022 except when on research leave).
- *Elected Member*, Chair of Electrical and Computer Engineering Search Committee.
- *Chair/Member, Numerous Ph.D. supervision/examination committees*
- *Chair/Member, Numerous Ph.D. comprehensive/examination committees*
- *Chair/Member, Numerous M.A.Sc. supervisory/thesis defense committees*

Other Professional Service Activities

- Volunteer *Professor*, **On-line University in Haïti** –**Institut des Sciences, des Technologies, et des Etudes Avancées d'Haiti (ISTEAH)**, https://www.isteah.edu.ht/index.php/professeurs/liste-des-professeurs, 2013 – present.
- Member, *International Evaluation Committee*, **School of Computer Science and Technology, Huazhong University of Science and Technology(HUST)**, Wuhan, China (15-18 May 2018).
- Panel Member, "*The Role of Research and Innovation in Improving Health in Megacities*", **New Leaders for Health Pre-Forum** in **Global Forum on Research and Innovation for Health 2015,** Manila, Philippines (Sunday 23 August 2015).
- External Appraiser, "*External Appraisal Report on the Proposed New MASc and PhD degrees in Mechanical Engineering*," **York University Quality Assurance Procedures (YUQAP)**, 6-page report (8 December 2014).
- Panel Member, Table Ronde "*Defi des Microsystemes au Quebec et au Canada*", **Journee de L'Innovation ReSMiQ**, Ecole Polytechnique de Montreal, Montreal (Thursday 19 September 2013).
- Panel Member, *"Knowledge Activation & Exchange Toward Development"*, **Second Saudi International Electronics, Communications and Photonics Conference** (**SIECPC**), Riyadh, Saudi Arabia, (Monday 29 April 2013).
- Panel Member, *Pervasive Health Care Technologies Discussion Panel*, **Second Saudi International Electronics, Communications and Photonics Conference** (**SIECPC**), Riyadh, Saudi Arabia, (Saturday 27 April 2013).
- Member, *New Pioneer Awards Selection Committee*, **Skills For Change**, Ontario, Canada (2010).
- Member, *Review Team*, **Review of the Department of Surgery**, Faculty of Health Sciences, McMaster University, Hamilton, Canada 24 pages report (6-7 October 2008).
- Helped to establish a mm and sub-mm wavelength SIS receiver program in the Herzberg Institute of Astrophysics, National Research Council (Dr. John MacLeod, Head, Radio Astronomy 1986-1990).
- Helped to establish a thin film device and a CCD testing facility at the Dominion Astrophysical Observatory, NRC, Victoria. Had an ongoing collaboration with the Senior Engineer (R. Murowinski, Senior Engineer, NRC 1987-1992).
- Member, Science Council of British Columbia Scholarships Committee (1990-1992).
- Reviewer for Tenure and Promotion cases for several universities in Canada, USA, Hong Kong, China, Middle-East, Singapore and Korea (1988-).
- External Examiner, Undergraduate Physics Program, University of the West Indies, St Augustine Campus (1996-2002).

Community and Other Services Including Public Articles – Partial List

- *Founding Director*, **The Canadian Guyanese Congress,** https://cgcongress.ca/ (2021 – present), **Vision:** Building a stronger Canada through innovative leadership by the Canadian Guyanese community.
- *Member and Mentor*, **The Canadian Black Scientists Network (CBSN),** https://blackscientists.ca/ (2021 – present), **Vision:** CBSN exists to Elevate, make Visible, Celebrate and Connect Black Canadians in Science, Technology, Engineering, Mathematics & Medicine (STEMM) across sectors.
- A Joseph, J Daniel, B Ibhawoh, J Deen, D Coleman, A Abebe, F Ogunkoya, and L. Kapiriri, "*Beyond Cohorts and Clusters: Redressing Systemic Anti-Blackness in Higher Education*" **University Affairs**,17 November 2021. https://www.universityaffairs.ca/opinion/in-my-opinion/beyond-cohorts-and-clusters-redressing-systemic-anti-blackness-in-higher-education/

- S Majumder, TP Mondal, MJ Deen, "Vaccines a beacon of hope, but which one to take?", **Indo-Caribbean World**, vol 38, 18th Iss, pp 1 & 14, 19 May 2021, http://indocaribbeanworld.com/archives/ICWMay19-2021.pdf.
- S Majumder, TP Mondal, MJ Deen, "1918 "Spanish" Flu to COVID-19: Lessons Learned, or Not!", **Indo-Caribbean World**, volume 37, 22nd Iss, p 15, 5 Aug 2020, http://indocaribbeanworld.com/archives/ICWAug05-2020.pdf.
- S Majumder, TP Mondal, MJ Deen, "Bats, Viruses, & the Covid-19 Pandemic", **Indo-Caribbean World**, vol 37, 16th Iss, pp 1 & 12, 16 May 2020 – Headline article, http://indocaribbeanworld.com/archives/ICWMay06-2020.pdf.

Previous Community Service

- *Volunteer*, Mission Services, Hamilton (2003-2006).
- *Soccer Coach/Assistant Coach*, West Hamilton Children's Soccer League (1999-2004).
- *Elementary School Volunteer* - Developed and taught a 10-week Mathematics/Science Enrichment Program at Hillcrest Elementary School, Coquitlam, B.C. (Fall 1993-Spring 1994).
- *Executive Member*, Merrivale Elementary Home and School Association (1992-1993).
- *Merrivale Public School Representative*, Carleton Council on Education (1992-1993).
- *Judge*, British Columbia Science Fair (1986-1990).

Editorial Responsibilities – Current

Current Editorial Responsibilities - 15

1. Editor-in-Chief, ***Microelectronics*** (January 2025 – present). https://www.mdpi.com/journal/microelectronics/editors
2. Member, Executive Editorial Board, ***Progress in Biomedical Engineering*** (December 2024 – present). https://publishingsupport.iopscience.iop.org/journals/progress-in-biomedical-engineering/editorial-board/
3. Co-Editor-in-Chief, ***Micro and Nanosystems*** (2016 – present). https://www.benthamscience.com/journal/106/editorial-board
4. Co-Editor-in-Chief, ***International Journal of High Speed Electronics and Systems*** (2014 – present). https://worldscientific.com/page/ijhses/editorial-board
5. Founding Executive Editor, ***Fluctuation and Noise Letters*** (March 2001 – present). https://worldscientific.com/page/fnl/editorial-board
6. Specialty Chief Editor (*Bioelectronics*), **Frontiers in Electronics** (2020 – present). https://www.frontiersin.org/journals/electronics/editors
7. Member, Advisory Editorial Board, ***IET Cyber-Physical Systems*: *Theory & Applications*** (2024 - present). https://ietresearch.onlinelibrary.wiley.com/hub/journal/23983396/homepage/editorial-board
8. Associate Editor, ***Advanced Devices & Instrumentation*** – A Science Partner Journal (June 2022 – June 2025) https://spj.science.org/page/adi/editors
9. Member, Editorial Board, ***Science China - Information Sciences*** (January 2022 – December 2026). https://link.springer.com/journal/11432/editorial-board
10. Member, Editorial Board, ***Scientific Reports*** (2022 – present). https://www.nature.com/srep/about/editors#editorial-board
11. Member, Editorial Board, ***Sensors*** (2019 – present). https://www.mdpi.com/journal/sensors/editors?search=deen
12. Member, Editorial Board, ***Applied Sciences*** (2018 – present). https://www.mdpi.com/journal/applsci/editors?search=deen
13. Member, Editorial Board "Circuits and Systems", ***Journal of Electrical and Computer Engineering*** (Jan 2013 – present). https://onlinelibrary.wiley.com/page/journal/1742/homepage/editorial-board
14. Member, Editorial Board, ***Nanoscience & Nanotechnology-ASIA*** (January 2011 – present). https://www.benthamscience.com/journal/117/editorial-board
15. Editor (Devices), ***Journal of Semiconductor Technology and Science*** (January 2010 – present). http://jsts.org/jsts/EditorialBoard

Editorial Responsibilities – Previous

Previous Editorial Responsibilities - 38

1. Member, Editorial Board, ***Nano Futures*** (June 2017 – December 2024).
2. Member, Editorial Board, ***Nanotechnology*** (January 2010 – December 2024).
3. Guest Editor, Special Issue of ***IEEE Transactions on Network Science and Engineering*** on *"Edge Computing for*

Internet of Things (*IoT*)" (Oct-Dec 2020). Guest Editorial in vol. 7, issue 4, on pp. 2243 – 2244 (Oct-Dec 2020). DOI: 10.1109/TNSE.2020.3032176

4. Guest Editor, Special Issue of ***IEEE Journal of Biomedical and Health Informatics*** on *"Enabling Technologies in Health Engineering and Informatics for the New Revolution of Healthcare* 4.0" (2020). Guest Editorial in vol. 24, issue 9, on pp. 2442 - 2443 (Sep 2020). **DOI:** 10.1109/JBHI.2020.3015298
5. Guest Editor, Special Issue of ***Sensors*** on *"Water and Health pH Sensors*" (2020).
6. Associate Editor, ***IET Cyber-Physical Systems: Theory & Applications*** (2017 - 2023).
7. Member, Editorial Board, ***International Journal of Environmental Research and Public Health*** (Jan 2019 – Jan 2024)
8. Member, Editorial Board, ***IEEE Access*** (January 2020 – December 2022).
9. Member, Editorial Board, ***Research Letters in Electronics*** (January 2009 – March 2018).
10. Member, Editorial Board, ***Microelectronics Journal*** (May 2006 – 2017).
11. Guest Editor, Special Issue of ***Sustainability*** on **"***Smart X for Sustainability***"** (February 2017).
12. Member, Editorial Advisory Board, ***Journal of Industrial Information Integration*** (March 2016 – November 2020).
13. Member, Editorial Board, ***Micro and Nanosystems*** (January 2012 – December 2017).
14. Member, Editorial Board, ***Open Journal of Radiology* (*OJRad*)** (January 2012 – December 2017).
15. Guest Editor, Special Issue of ***Photonics*** on **"***Advanced Photodetectors Devices and Technologies***"** (2016-2017).
16. Guest Editor, Special Issue of ***Journal of Industrial Information Integration*** on **"***Future Buildings and Homes Under the Context of Internet-of-Things and Industry* 4.0**"** (2016-2017).
17. Associate Editor, ***IEEE/OSA Journal of Display Technology*** (January 2011 – December 2016).
18. Member, Editorial Board, ***Micro and Nanosystems*** (January 2012 – December 2015).
19. Guest Editor, Special Issue of ***Sensors*** on **"***State-of-the-Art Sensors in Canada* 2014**"** (2014).
20. Guest Editor, Special Issue of ***IEEE Tran on Electron Devices*** on **"***Compact Modeling of Emerging Devices***"** (Feb 2014).
21. Member, Editorial Board, ***Open Journal of Applied Physics*** (January 2007 – 2014).
22. Guest Editor, Special Issue of ***Applied Sciences*** on **"***Rapid Detection Systems***"** (2013).
23. Guest Editor, Special Issue of ***Sensors*** on **"***State-of-the-Art Sensors in Canada* 2011**"** (2011).
24. Member, Advisory Board of Editors, ***Int'l Journal of High Speed Electronics and Systems*** (June 2006 – Dec 2013).
25. Regional Editor, ***IEEE Electron Devices Society (EDS) Newsletter*** – Canada and Central USA (Nov 2004 – Dec. 2010).
26. Editor – Solid-State, ***IEEE Transactions on Electron Devices*** (April 2001 – March 2010).
27. Member, Editorial Advisory Board, ***Interface, an Electrochemical Society Publication*** (April 2001 – May 2007)
28. Guest Editor, Special Issue of ***IEEE Transactions on Electron Devices*** on **"***Compact Interconnect Models for Gigascale Integration*" (September 2009).
29. Guest Editor, Special Issue of ***IET Circuits, Devices and Systems*** from *IEEE/SPIE International Conference on Computers and Devices for Communications* **(*CODEC*)** 2006 (1 February 2008).
30. Guest Editor, Special Issue of ***IEEE Transactions on Electron Devices*** on **"***Advanced Compact Models and 45-nm Modeling Challenges*" (September 2006).
31. Guest Editor, Special Issue of ***IEE Proceedings - Circuits, Devices and Systems*** from *IEEE/SPIE International Conference on Computers and Devices for Communications* **(*CODEC*)** 2004 (October 2005).
32. Guest Editor, ***Interface, an Electrochemical Society Publication*** (Summer 2005).
33. Member, Editorial Board, ***The Journal of Nanoscience and Nanotechnology*** (September 2004 – 2007).
34. Guest Editor, Special Issue of ***IEE Proc. - Circuits, Devices & Systems*** on **"***Noise in Devices & Circuits***"** (April 2004).
35. Guest Editor, Special issue of ***Fluctuation and Noise Letters*** on **"***Noise in Devices and Circuits***"** (2004).
36. Member, Editorial Board, ***IEEE Transactions on Microwave Theory and Techniques*** (2001-2002).
37. Guest Editor, Special Issue of ***IEE Proc. - Circuits, Devices & Systems*** on "*Sel. Topics on Electronic Noise*" (Feb. 2002).
38. Guest Editor, Special Issue of ***International Journal of High Speed Electronics and Systems*** (IJHSES) on **"***CMOS RF Modeling, Characterization and Applications***"** (2002).

Service - National Academies and Professional Societies

- **Session Chair/Co-Chair at Conferences/Symposia 122**

Office Held in Academies and Professional Societies/Organizations

- **Offices/Positions Held in Professional Societies 77**

1. Member, *Senior Advisory Board*, **Hong Kong Center for Cerebro-Cardiovascular Health Engineering (COCHE)** (April 2023 – March 2026).
2. Inaugural Vice-President – *North* (*Developed Countries*), **The World Academy of Sciences** (January 2023 – December 2026).
3. Chair, *Nominating Committee - Electronics and Photonics Division*, **The Electrochemical Society** (2021 - 2024).
4. Chair, *Digital Twin International Academic Board*, **Taylor & Francis Physical Sciences & Engineering Publisher,** https://digitaltwin1.org/ (July 2021 - present).
5. Member, *Fellow Evaluation Committee* (*Engineering Sciences*), **The World Academy of Sciences (TWAS**) (2020-).
6. Member, *International Advisory Board*, **The World Academy of Sciences (TWAS**) (2020-).
7. Senior Advisor, *Advisory Board*, **IEEE Technical Committee on Carbon Neutrality** (**IEEE TCCN**) - http://www.ieee-cn.org/, (1 July 2019 - present).
8. Member, *Advisory Council*, **IEEE Council on Electronic Design Automation (*CEDA*)**, (2017 -).
9. Member, *Advisory Board*, **IEEE Technical Committee on Cyber-Physical Systems (CPS)** (2017 - present).
10. Fellow Member, **International MOS-AK Compact Modeling Committee** (North America) (2017 – present).
11. Past President, *Academy of Science*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2017-2019).
12. Chair – Medals and Awards Selection Committee, *Academy of Science*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2017-2019).
13. President, *Academy of Science*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015-2017).
14. Chair, *Academy of Science Council*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015-2017).
15. Chair, *Academy of Science Executive Committee*, **The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada** (2015-2017).
16. Chair, *Academy of Science Committee on Selection of New Fellows*, **The Royal Society of Canada**(2015-2017).
17. Member, *RSC Executive*, **The Royal Society of Canada** (2015-2017).
18. Member, *RSC Board of Directors*, **The Royal Society of Canada** (2015-2017).
19. Member of *Governance and Ethics Committee*, **The Royal Society of Canada** (2015-2017).
20. Member of *Committee for the Nomination of Presidential Candidates*, **The Royal Society of Canada** (2015-2019).
21. Member, *Board of Directors*, **A.G. Huntsman Foundation**, Dartmouth, Nova Scotia, Canada (2015-2019).
22. President Elect, *Academy of Science*, **The Royal Society of Canada** (2014-2015).
23. Chair, *Academy of Science Awards Committee*, **The Royal Society of Canada** (2015).
24. Member, *Academy of Science Executive Committee*, **The Royal Society of Canada** (2014-2015).
25. Member of *Council* (Academy of Science Representative), **The Royal Society of Canada** (2014-2015).
26. Director, *Division of Applied Sciences and Engineering*, **The Royal Society of Canada** (2011-2013, 2013-2015).
27. Member, *Academy of Science Committee for the Selection of New Fellows*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2011-2013, 2013-2015).
28. Chair, *Fellow Selection Committee, Division of Applied Sciences and Engineering*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada, Academy of Science** (2011-2013, 2013-2015).
29. Member of *Council* - Academy of Science, **The Royal Society of Canada** (2011-2013, 2013-2015).
30. Member of *Committee for the Nomination of Officers*, *Academy of Science*, **The Royal Society of Canada – The Academies of Arts, Humanities and Sciences of Canada** (2011-2013, 2013-2015, 2017-2019).
31. Vice-President – *Membership*, **IEEE Electron Devices Society** (2012-2013).
32. Member of *Council* (Academy of Science Representative), **The Royal Society of Canada** (2011-2013).
33. 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).
34. Vice-Chair, *Subcommittee for Regions/Chapters* (*SRC*) – *Regions* 1, 3 & 7, **IEEE Electron Devices Soc** (2017-2019)
35. Member, *Andrew S. Grove Award Committee*, **IEEE** (2021-2023).
36. Chair, *Industrial Technical Excellence Award***, IEEE Tech Committee Cyber-Physical System (TCCPS),** (2022).

37. Chair, *Technical Achievement Award*, **IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
38. Chair, *Ten-Year Retrospective Most Influential Paper Award*, **IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
39. Chair, *Distinguished Leadership Award*, **IEEE Tech Committee Cyber-Physical System (TCCPS),** (2017-18).
40. Chair, *Mid-Career Award*, **IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
41. Chair, *Early-Career Award*, **IEEE Technical Committee Cyber-Physical System (TCCPS),** (2017-2018).
42. Member, *IEEE Corporate Innovation Award Committee*, (2015-2018).
43. Member, *ECS* (*Electrochemical Society*) *Olin Palladium Award Committee* (2020-2023).
44. Member, *IEEE Brunetti Awards Committee*, (2019-2022).
45. Member, *IEEE Electron Devices Society Ebers Award Committee* (2017-2020).
46. Member, *IEEE Brunetti Awards Committee*, (2013-2015).
47. Member, *IEEE Electron Devices Society Early Career Awards Committee* (2012-2015).
48. Member, *IEEE Electron Devices Society Fellow Evaluation Review Committee* (2010-2015).
49. 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).
50. 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).
51. Member, *Publications Committee*, **IEEE Electron Devices Society** (2009-2013).
52. Member, *Adcom*, **IEEE Electron Devices Society** (2006-2008, 2009-2011).
53. Chair, *Compact Modeling Committee*, **IEEE Electron Devices Society** (2009-2012).
54. Member, *VLSI Technology and Circuits*, **IEEE Electron Devices Society** (2006-present).
55. Member, *Educational Activities Committee*, **IEEE Electron Devices Society** (2002-2011).
56. Member, *Compact Modeling Committee*, **IEEE Electron Devices Society** (2004-2008).
57. Member, *Optoelectronic Devices Committee*, **IEEE Electron Devices Society** (2002-2007).
58. Member, *Education Awards Committee*, **IEEE** (2003-2006).
59. Member, *ICNF International Advisory Committee* (2003-).
60. 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).
61. Member, *Technical Affairs Committee*, **The Electrochemical Society** (2006-2010).
62. Member, *Fellow Evaluations Committee*, **The Electrochemical Society** (2006-2010).
63. Divisional Advisor, *Electronics and Photonics Division*, **The Electrochemical Society** (2006-2010).
64. Divisional Advisor, *Organic and Biological Electrochemistry Division*, **The Electrochemical Society** (2006-2010).
65. Member, *Board of Directors*, **The Electrochemical Society** (2004-2006).
66. Chair, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2004-2006).
67. Member, *New Technology Subcommittee*, **The Electrochemical Society** (2001-2004).
68. Member, *Nanotechnology Subcommittee*, **The Electrochemical Society** (2003-2005).
69. Member, *Governing Body*, *Dielectric Science and Technology Division*, **The Electrochemical Society** (1994-1996, 1996-1998, 1998-2000, 2000-2002, 2002-2004, 2004-2006).
70. Member-at-Large, *Electronics Division*, **The Electrochemical Society** (2003-2005, 2005-2007).
71. Vice-Chair, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2002-2004).
72. Secretary, *Dielectric Science and Technology Division*, **The Electrochemical Society** (2000-2002).
73. Member, *Publication Committee*, **Electrochemical Society** (1999-2001).
74. Symposium Planning Chair, *Dielectric Science and Technology Division*, **Electrochemical Society** (1998- 2000).
75. Awards Chair, *Dielectric Science and Technology (DS&T) Division*, **Electrochemical Society** (1996-1998).
76. Awards Chair, *Vancouver Section*, **IEEE** (1995-1996).
77. Counselor, *SFU Student Branch*, **IEEE** (1993-1995).

Conferences – Organizer, Program Committee etc.

- **Conferences – Organizer, Chair, Program Committee Member, etc. 207**

1. Member, *Scientific Committee*, **32nd IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Szcechn, Poland (26-28 June 2025). https://www.mixdes.org/Mixdes3/tekst/view/committees
2. Member, *Technica Program Committee*, **The 2nd Workshop on Integrating Edge Intelligence and Large Model in Next Generation Networks (IEEE INFOCOM IEILM 2025),** London, United Kingdom (19–22 May 2025).

https://infocom2025.ieee-infocom.org/2nd-workshop-integrating-edge-intelligence-and-large-model-next-generation-networks-ieilm-call

3. General Chair, **The 2024 IEEE AI+ Congress,** Sanya, China, (17-21 Dec 2024). https://ieee-aiplus.org/2024/cmt.php
4. Member, *Program Board*, **ITAP: 10th International Conference on Human Aspects of IT for the Aged Population**, Washington DC, USA (29 June - 4 July 2024).
5. Member, *Scientific Committee*, **31st IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Gdańsk, Poland (27-28 June 2024). https://www.mixdes.org/Mixdes3/tekst/view/committees
6. General Chair, **2023 IEEE Cybermatics Congress**, Ocean Flower Island, Hainan, China (16-20 December 2023). https://ieee-cybermatics.org/2023/oc.php
7. Member, *Steering Committee*, **2023 IEEE International Conference on Cyber, Physical and Social Computing (CPSCom 2023),** Ocean Flower Island, Hainan, China (16-20 December 2023). http://ieee-cybermatics.org/2023/cpscom/oc.php
8. Co-Chair, *International Advisory Committee*, 8th **International Conference on Computers and Devices for Communication (CODEC 2023),** Kolkata, India (14-16 December 2023). https://www.codec-rpe.org/committee-2023.html
9. Vice-Chair, *International Advisory Committee*, **5th IEEE International Flexible Electronics Technology Conference (IFETC) 2023,** San Jose, California (14-16 August 2023). https://2023.ifetc.org/https://2023.ifetc.org/about/organizing-committee
10. Member, *Executive Committee*, **5th IEEE International Flexible Electronics Technology Conference (IFETC) 2023,** San Jose, California (14-16 August 2023). https://2023.ifetc.org/https://2023.ifetc.org/about/organizing-committee
11. Member, *Program Board*, **ITAP: 9th International Conference on Human Aspects of IT for the Aged Population**, Copenhagen, Denmark (23 - 28 July 2023). https://2023.hci.international/itap
12. Member, *Scientific Committee*, **30th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Krakow, Poland (29-30 June 2023). https://www.mixdes.org/Mixdes3/tekst/view/committees
13. General Chair, **2022 IEEE Hyper-Intelligence Congress,** Chengdu, China (18-21 December 2022). http://ieee-hyper-intelligence.org/cmt.php
14. Honorary Chair, **2022 IEEE SmartWorld Congress 2022**, Hainan University, Hainan, China (16-18 December 2022). http://www.ieee-smart-world.org/cmt.php
15. Member, *Steering Committee*, **The 15th IEEE Conference on Cyber, Physical and Social Computing (CPSCom-2022),** Espoo, Finland (22-25 August 2022).
16. Member, *Technical Program Committee*, **Fourth IEEE International Flexible Electronics Technology Conference (IFETC 2022),** Qingdao, China (21-24 August 2022).
17. General Chair, **The 19th IEEE International Conference on Smart City (SmartCity 2021),** Haikou, China (17-19 Dec 2021). https://www.ieee-cybermatics.org/2021/smartcity/committees.html
18. Member, *International Advisory Committee*, **2021 7th International Workshop on Low Temperature Bonding for 3D Integration (LTB-3D 2021)**, Nara, Japan (5-7 October 2021).
19. Co-Organizer, Special Session on "*Modelling and Simulation for Smart Manufacturing"*, **IEEE International Conference on Industrial Informatics**, **INDIN'21,** Palma de Mallorca, Spain (21-23 July 2021).
20. Co-Organizer, *Organic Semiconductor Materials, Devices, and Processing* 8, **239th Meeting of the Electrochemical Society – Digital Meeting** (30 May – 3 June 2021).
21. Member, *International Advisory Council*, **IEEE Electron Devices Technology and Manufacturing (EDTM) Conference**, Chengdu, China (9-12 March 2021).
22. Chair, *Nanosensors* (S4), **7th International Electronic Conference on Sensors and Applications,** MDPI On-Line Conference, https://sciforum.net/conference/ecsa-7#S4 (15-30 November 2020).
23. Co-Chair, *International Advisory Committee*, **7th International Conference on Computers and Devices for Communication (CODEC 2019),** Kolkata, India (19-20 December 2019).
24. General Chair, **3rd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (**Ubi-HealthTech 2019**), Shaoxing, China (13-16 December 2019).
25. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 6*, **235th Meeting of the Electrochemical Society**, Dallas, Texas USA, (26-31 May 2019).
26. General Chair, **The 12th Asia-Pacific Services Commuting Conference (APSCC 2018)**, Zhuhai, China (20-22 December 2018).
27. Member, *Program Committee*, **CENICS 2018 - The Eleventh International Conference on Advances in Circuits, Electronics and Micro-electronics**, Venice, Italy (16-18 September 2018).
28. Member, *Technical Program Committee*, **2018 IEEE International Flexible Electronics Technology Conference**,

Ottawa, Canada (7-9 August 2018).

29. Member, *Scientific Committee*, **25th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Gdynia, Poland (21-23 July 2018).
30. Member, *Program Board*, **ITAP: 4th International Conference on Human Aspects of IT for the Aged Population**, Las Vegas, Nevada, USA (15-20 July 2018).
31. Member, *Organizing Committee*, **2nd World Congress & Expo on Nanotechnology & Materials Science**, Dubai, UAE (25-27 June 2018).
32. Member, *International Program Committee*, **International Conference on Advances in Information Technology (IAIT 2017) – Technology For Smart Life,** Bangkok, Thailand (22-25 November 2017).
33. Member, Advisory Committee, **IEEE Fifth International Conference on Enterprise Systems (ES 2017) – Industry 4.0 and Made in China 2025**, Tsinghua University, Beijing, China (22-24 September 2017).
34. Member, *Advisory Committee*, **IEEE SmartWorld 2017 - The 3rd IEEE International SmartWorld Congress**, San Francisco, USA (4-8 August 2017).
35. General Chair, **The 2017 IEEE Int Conference on Smart X** (Smart X 2017), Guangzhou, China (21-23 July 2017).
36. Member, *Technical Program Committee*, **The Second IEEE/ACM Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE 2017)**, Philadelphia, USA (17-19 July 2017).
37. Member, *Program Committee*, **24th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Bydgoszcz, Poland (22-24 June 2017).
38. Chair, *International Advisory Committee*, **24th International Conference on Noise and Fluctuations** (ICNF 2017), Vilnius, Lithuania (20-23 June 2017).
39. Co-Organizer, *Solid-State Electronics and Photonics in Biology and Medicine* 4, **231st Meeting of the Electrochemical Society**, New Orleans, LA (26 May – 1 June 2017).
40. General Chair, **9th Int Conference on Internet-of-Things (iThings 2016),** Chengdu, China (16-19 December 2016).
41. Member, *Scientific Advisory Committee*, **3rd International Electronic Conference on Sensors and Applications**, On-line (15-30 November 2016).
42. Member, *Program Committee*, **7th International Conference on Computer Aided Design for Thin-Film Transistor Technologies (CAD-TFT),** Beijing, China (26-28 October 2016).
43. Member, *Technical Program Committee*, **International Conference on Medical Sciences and Bioengineering,** Guangzhou, China (15-16 October 2016).
44. Member, *Technical Program Committee*, **The Fifth International Conference on Global Health Challenges (GLOBAL HEALTH 2016),** Venice, Italy (9-13 October 2016).
45. General Chair, **The 2016 International Conference on Smart X (Smart X 2016)**, Dalian, China (29-31 July 2016).
46. Member, *Technical Program Committee*, **The First IEEE Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE 2016)**, Washington DC, USA (27-29 July 2016).
47. Honorary Chair, **The Thirteenth International Conference on Ubiquitous Intelligence and Computing (UIC 2016),** Toulouse, France (18-21 July 2016).
48. Member, *International Committee*, **International Workshop on Flexible Electronics (WFE)**, Tarragona, Catalonia, Spain (29 June 2016).
49. Member, *International Program Committee*, **23rd IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Lodz, Poland (23-25 June 2016).
50. Member, *International Advisory Committee*, **Asian Engineering Deans' Summit (AEDS)**, Zhejiang University, Hangzhou, China (16-17 May 2016).
51. Organizer, Special Session on "*Industrial Perspectives of Future Buildings and Homes Under the Context of Internet-of-Things and Industry* 4.0", **2016 IEEE International Conference on Industrial Technology (ICIT2016)**, Taipei, Taiwan (14-17 March 2016).
52. General Chair, **2015 Int Conference on Smart City** (**IEEE Smart City 2015**), Chengdu, China (19-21 Dec 2015).
53. Chairman, *International Advisory Committee*, **International Conference on Computers and Devices for Communications (CODEC-15),** Kolkata, India (16-18 December 2015).
54. Honorary Program Chair, **International Conference on Microwave and Photonics (ICMAP 2015),** Dhanbad, India (11-13 December 2015).
55. Member, *Technical Program Committee*, **International Conference on Semiconductor Physics and Devices (ICSPD 2015),** Guilin, China (20-22 November 2015).
56. Member, *International Program Committee*, **The International Conference on Small Science (ICSS 2015),** Phuket, Thailand (4-7 November 2015).

57. Member, *Organizing Committee*, **Workshop on Advanced Materials and Devices (WAMD),** Ixtapa-Zihuatanejo, Mexico (4-6 November 2015).
58. Member, *Technical Program Committee*, **The 9th Jordanian International Electrical and Electronics Engineering Conference (JIEEEC 2015),** Amman, Jordan (12-14 October 2015).
59. General Chair, **The Twelfth International Conference on Ubiquitous Intelligence and Computing (UIC 2015),** Beijing, China (10-14 August 2015).
60. Member, *Technical Program Committee*, **The Fourth International Conference on Global Health Challenges (GLOBAL HEALTH 2015),** Nice, France (19-24 July 2015).
61. Member, *International Program Committee*, **22nd IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES)**, Torun, Poland (25-27 June 2015).
62. Chair, *International Advisory Committee*, **23rd International Conf. on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
63. General Co-Chair, **23rd International Conf. on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
64. Technical Area Chair, *Imagers*, **23rd International Conference on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
65. General Co-Chair, *Organizing Committee*, **23rd International Conference on Noise and Fluctuations** (ICNF 2015), Xi'An, China (2-6 June 2015).
66. General Chair, **2nd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2015), Beijing, China (28-30 May 2015).
67. Member, *Technical Program Committee*, **2nd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2015), Beijing, China (28-30 May 2015).
68. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 5*, 227th Meeting of the Electrochemical Society, Chicago, Illinois (24-28 May 2015).
69. Member, *Technical Committee*, **MOS-AK: Enabling Compact Modeling R&D**, Grenoble, France (12 March 2015).
70. General Chair, **The 13th International Conference on Ubiquitous Computing and Communications (IUCC 2014),** Chengdu, China (19-21 December 2014).
71. Member, *International Program Committee* **International Conference on Small Science (*ICSS*),** Hong Kong (8-11 December 2014).
72. Member, *Program Committee*, **29th Symposium on Microelectronics Technology and Devices (SBMicro 2014),** Aracaju-Sergipe, Brazil (1-5 September 2014).
73. Member, *Technical Program Committee*, **The Third International Conference on Global Health Challenges (Global Health 2014),** Rome, Italy (24-28 August 2014).
74. Member, *International Program Committee*, **21st IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Lviv, Ukraine (19-21 June 2014).
75. Member, *Scientific Advisory Committee*, **1st International Electronic Conference on Sensors and Applications,** On-line Conference (1-16 June 2014).
76. Lead-Organizer, *Integrated Optoelectronics* 7, **225th Meeting of the Electrochemical Society**, Orlando, Florida (11-16 May 2014).
77. Member, *Steering Committee*, **29th International Conference on Microelectronics** (MIEL-2014), Belgrade, Serbia (10-13 May 2014).
78. Member, *International Advisory Committee*, **1st International Conference on Microelectronics & Reliability- 2013** (ICMR-2013), Amity University, Noida, (NCR, Delhi), India (17-18 October 2013).
79. General Chair, **1st IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2013), Jinhua, China (1-3 July 2013).
80. Member, *International Advisory Committee*, **22nd International Conference on Noise and Fluctuations** (ICNF 2013), Montpellier, France (24-28 June 2013).
81. Member, *Scientific Committee*, **20th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Gdynia, Poland (20-22 June 2013).
82. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing* 4, **223rd Meeting of the Electrochemical Society**, Toronto, Canada (12-16 May 2013).
83. Co-Chair, *Technical Program*, **2nd IEEE Saudi International Conference on Electronics, Communications and Photonics**, Riyadh, Saudi Arabia (27-30 April 2013).
84. Member, *Technical Program Committee*, **8th Jordanian International Electrical and Electronics Engineering Conference**, (JIEEEC 2013), Amman, Jordan (16 - 18 April 2013).

85. Co-Chair, *International Advisory Committee,* **International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (17-19 December 2012).
86. Member, *Technical Program Committee,* **4th International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2012),** Cambridge University, Cambridge, UK (3 September 2012).
87. Member, *Scientific Committee*, **International Conference on Electrical and Computer Systems (ICECS'12),** Ottawa, Canada (22-24 August 2012).
88. Member, *Organizing Committee,* **Second International Training Course in Compact Modeling - EU CoMoN Compact Modeling Network**, Tarragona, Spain (28-29 June 2012).
89. Member, *Scientific Committee*, **18th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Warsaw, Poland (24-26 May 2012)
90. Lead-Organizer, *Sixth International Symposium on Integrated Optoelectronics***, The 221st Meeting of the Electrochemical Society**, Seattle, Washington (6-11 May 2012).
91. Member, *Organizing Committee*, **Eight International Caribbean Conference on Circuits, Devices and Systems (ICCDCS 2012),** Playa del Carmen, Mexico (14-17 March 2012).
92. Member, *International Advisory Committee*, **The International Conference on VLSI, MEMS & NEMS (VMN-2012),** Amity University, Uttar Pradesh, India (24-25 January 2012).
93. General Chair, **Eight International Conference on Ubiquitous Intelligence and Computing (UIC 2011**), Banff, Aberta, Canada (2-4 September 2011).
94. 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).
95. Member, *Scientific Committee*, **18th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Gliwice, Poland (16-18 June 2011)
96. General Chair, **21st Int. Conference on Noise and Fluctuations** (ICNF 2011), Toronto, Canada (12-16 June 2011).
97. Chair, *International Advisory Committee*, **21st Int. Conference on Noise and Fluctuations** (ICNF 2011), Toronto, Canada (12-16 June 2011).
98. Member, *Technical Program Committee*, **21st International Conference on Noise and Fluctuations** (ICNF 2011), Toronto, Canada (12-16 June 2011).
99. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 3,* **219th Meeting of the Electrochemical Society**, Montreal, Canada (1-6 May 2011).
100. Co-Organizer, *Silicon Nitride, Silicon Dioxide and Emerging Dielectrics XI,* **219th Meeting of the Electrochemical Society**, Montreal, Canada (1-6 May 2011).
101. Member, *Technical Program Committee,* **3rd International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2010),** Tarragona, Spain (2 July 2010).
102. Member, *Organizing Committee*, **First International Training Course in Compact Modeling - EU CoMoN Compact Modeling Network**, Tarragona, Spain (30 June – 1 July 2010).
103. Member, *Scientific Committee*, **17th IEEE International Conference Mixed Design of Integrated Circuits and Systems (MIXDES),** Wroclaw, Poland (24-26 June 2010)
104. 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).
105. Lead-Organizer, *Fifth International Symposium on Integrated Optoelectronics***, The 217th Meeting of the Electrochemical Society**, Vancouver, BC, Canada, (25-30 April 2010).
106. Co-Chair, *International Advisory Committee*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (14-16 December 2009).
107. Lead-Organizer, *Organic Semiconductor Materials, Devices, and Processing 2,* **216th Meeting of the Electrochemical Society**, Vienna, Austria (4-9 October 2009).
108. Member, *Technical Program Committee,* **2nd International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2009),** University College London, London, UK (25 September 2009).
109. Member, *Program Committee*, **SBMicro**, Natal, Brazil (31 August – 3 September 2009).
110. Member, *Scientific Program Committee***,** *20th International Conference on Noise and Fluctuations* (ICNF 2009), Pisa, Italy (15-19 June 2009).
111. 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).
112. Member, *International Advisory Committee***, IEEE International Conference on Electron Devices and Solid-State**

Circuits 2008 (EDSSC2008)**,** Hong Kong (8-10 December 2008).

113. Lead-Organizer, *Fourth International Symposium on Integrated Optoelectronics,* **214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (12-17 October 2008).
114. Member, *Technical Program Committee,* **1st International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (C-TFT 2008),** Cambridge University, Cambridge, UK (11-12 September 2008).
115. Member, *North & South America Regional Technical Committee,* **The 12th International Meeting on Chemical Sensor** (IMCS-12), Columbus, Ohio (13-16 July 2008).
116. Member, *Organizing/Steering Committee*, **International Symposium on Flexible Electronics** (**ISFE**), Tarragona, Spain (6-9 April 2008).
117. Member, *Technical Program Committee*, **International Symposium on Flexible Electronics** (**ISFE**), Tarragona, Spain (6-9 April 2008).
118. 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).
119. Member, *Scientific Program Committee***, 19th International Conference on Noise and Fluctuations (ICNF 2007),** Tokyo, Japan (9-14November 2007).
120. Lead-Organizer, *Organic and Polymeric Semiconductor Devices*, **212th Meeting of the Electrochemical Society**, Washington, DC (7-12 October 2007).
121. Member, *Program Committee*, **SPIE Conference on Noise and Fluctuations in Circuits, Devices and Materials**, Florence, Italy (20-24 May 2007).
122. 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).
123. Co-Organizer, *Sensors Based on Nanotechnology 3*, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (6-11 May 2007).
124. Member, *Organizing Committee*, **IEEE Int'l Conference on RFID 2007**, Grapevine, Texas (26-28 March 2007).
125. 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**).**
126. Co-Chair, *International Advisory Committee*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (14-16 December 2009).
127. Member, *International Advisory Committee*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (18-20 December 2006).
128. Member, *Programme Committee***, European Nano Systems 2006,** Paris, France (14-15 December 2006).
129. Member, *International Programme Committee*, **The Fourth IASTED International Conference on Circuits, Signals, and Systems,** San Francisco, California, (20-22 November 2006).
130. Co-Organizer, *Bioelectronics, Biointerfaces, and Biomedical Applications 2*, **210th Meeting of the Electrochemical Society**, Cancun, Mexico (29 October – 3 November 2006).
131. Lead-Organizer, *Third International Symposium on Integrated Optoelectronics*, **210th Meeting of the Electrochemical Society**, Cancun, Mexico (29 October – 3 November 2006).
132. Member, *Technical Program Committee*, **IEEE/IEE 8th International Conference on Solid-State and Integrated-Circuit Technology** (ICSICT 2006), Shanghai, China (23-26 October 2006).
133. Co-Organizer, *Solid-State Joint General Poster Session*, **The 209th Meeting of the Electrochemical Society,** Denver, Colorado (7-12 May 2006).
134. Co-Organizer, *New Sensor Materials*, **209th Meeting of the Electrochem. Soc.,** Denver, Colorado (7-12 May 2006).
135. Vice-Chair, *Circuits*, **Sixth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2006)**, Mexico (26-28 April 2006).
136. Member, Programme Committee**, European Nano Systems 2005,** Paris, France (14-16 December 2005).
137. 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).
138. Member, Scientific Program Committee, **18th International Conference on Noise and Fluctuations** (ICNF2005), Salamanca, Spain (19-23 September 2005).
139. Member, *Program Committee*, **Twelfth Canadian Semiconductor Technology Conf.,** Ottawa (August 2005).
140. 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)
141. Co-Chair, **SPIE Conf. on Noise in Devices and Circuits**, Austin, Texas (May 2005).
142. 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).

143. Member, *Technical Program Committee – Solid State Devices,* **IEEE Int. Electron Devices Meeting** (2003-2005).
144. Vice-Chair, *International*, **Fifth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2004)**, Dominican Republic (3-5 November 2004).
145. Lead-Organizer, *Second International Symposium on Integrated Optoelectronics*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (3-8 October 2004).
146. Co-Organizer, *Solid-State Joint General Poster Session,* **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (3-8 October 2004).
147. Co-Chair, **SPIE Conf. on Noise in Devices and Circuits**, Maspalomas, Gran Canaria, Spain (26-28 May 2004).
148. Advisory Chair, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (1-3 January 2004).
149. Member, *International Advisory Committee*, **International Conference on Noise and Fluctuations** (ICNF) (2003-).
150. Member, *Technical Program Committee,* **3rd International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics**, Montreux, Switzerland (20-23 October 2003).
151. Co-Organizer, *Seventh International Symposium on Low Temperature Electronics*, **204th Meeting of the Electrochemical Society**, Orlando, Florida (12-17 October 2003).
152. Member, *Scientific Program Committee,* **17th ICNF Noise and Fluctuations,** Prague, Czech (August 18-22, 2003).
153. Member, *Program Committee,* **Eleventh Canadian Semiconductor Technology Conf.,** Ottawa (August 2003).
154. Member, *Int. Steering Committee*, **IEEE Conf. on Electron Devices and Solid-St. Cir.**, Hong Kong, (7-9 July 2003).
155. Member, *Technical Program Committee,* **IEEE Device Research Conference** (2003).
156. Chair, **SPIE Conference on Noise in Devices and Circuits**, Santa Fe, New Mexico (1-4 June 2003).
157. Member, *Technical Committee*, **SPIE Conference on Noise and Information in Nanoelectronics**, **Sensors and Standards**, Santa Fe, New Mexico (1-4 June 2003).
158. 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).
159. Co-Organizer, Solid State Joint General Poster Session, **203rd Meeting of the Electrochemical Society**, Paris, France (27 April - 2 May 2003).
160. Chair, *Commission D - Electronics and Photonics*, **International Union of Radio Scientists (URSI),** Canadian National Committee (1996-1999, 1999-2002).
161. Member, *International Scientific Advisory Committee*, **3rd International Conference on Unsolved Problems of Noise (UPON '02)**, Washington, DC (September 2002).
162. Member, *International Steering Committee* - **6th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC 2002)**, Budapest, Hungary (26-29 May 2002).
163. Lead-Organizer, *First International Symposium on Integrated Optoelectronics*, **201st Meeting of the Electrochemical Society**, Philadelphia, Pennsylvania (12-17 May 2002).
164. 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).
165. 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).
166. Member, **Program Committee**, **Tenth Canadian Semiconductor Technology Conf.**, Ottawa (13-17 August 2001).
167. Member, *Scientific Program Committee,* **16th International Conference on Noise in Physical Systems and 1/f Fluctuations**, Gainesville, Florida (22-25 October 2001).
168. 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).
169. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **199th Meeting of the Electrochemical Society**, Washington, DC (25-30 March 2001).
170. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **198th Meeting of the Electrochemical Society**, Phoenix, Arizona (22-27 October 2000).
171. Member, *International Steering Committee* - **5th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC 2000)**, Crete, Greece (21-24 May 2000).
172. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session,* **197th Meeting of the Electrochemical Society**, Toronto, Ontario (14-19 May 2000).
173. 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).

174. Co-Organizer, *Fifth Symposium on Low Temperature Electronics*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October 1999).
175. Co-Organizer, *State-of-the-Art Program on Compound Semiconductors XXXI*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October 1999).
176. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **196th Meeting of the Electrochemical Society**, Honolulu, Hawaii (17-22 October 1999).
177. Member, *Technical Program Committee*, **15th International Conference on Noise in Physical Systems and 1/f Fluctuations (ICNF '99)**, Hong Kong (23-26 August 1999).
178. Member, *Program Committee* - **Canadian Semiconductor Technology Conf.**, Ottawa (10-13 August 1999).
179. Member, *International Scientific Advisory Committee*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (11-15 July 1999).
180. 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).
181. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **195th Meeting of the Electrochemical Society**, Seattle, Washington (2-7 May 1999).
182. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **194th Meeting of the Electrochemical Society**, Boston, Massachusetts (1-6 November 1998).
183. Co-Organizer, *Thin Film Transistor Technologies IV*, **194th Meeting of the Electrochemical Society**, Boston, Massachusetts (1-6 November 1998).
184. 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).
185. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **191st Meeting of the Electrochemical Society**, San Diego, California (3-8 May 1998).
186. Member, *International Committee*, **Second International IEEE Caracas Conference on Devices, Circuits and Systems (ICCDS-98)**, Margarita Island, Venezuela (2-4 March 1998).
187. Member, *International Steering Committee* - **4th International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC '97)**, Cardiff, Wales (22-24 June 1998).
188. Member, *Program Committee*, **SPIE International Symposium on Microelectronics and Assembly - Automatic Inspection and Novel Instrumentation Symposium**, Singapore (23-27 June 1997).
189. Co-Organizer, *State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVI)*, **191st Meeting of the Electrochemical Society**, Montreal, Canada (4-9 May 1997).
190. 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).
191. 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).
192. Co-Organizer, *Dielectric Science and Technology/Electronics Joint General Session*, **191st Meeting of the Electrochemical Society**, Montreal, Canada (4-9 May 1997).
193. Co-Organizer, *Electronics/Dielectric Science and Technology Joint General Session*, **190th Meeting of the Electrochemical Society**, San Antonio, Texas (6-11 October 1996).
194. Member, *International Advisory Committee*, **International Conference on Unsolved Problems in Noise**, Szeged, Hungary (September 1996).
195. 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).
196. Member, *Program Committee* - **Canadian Semiconductor Technology Conf.**, Ottawa (14-18 August 1995).
197. Member, *Advisory Board*, Auburn University's NSF Program in **Extended Temperature Range Electronics**, Auburn, Alabama (1995-2000).
198. Member, *International Steering Committee* - **2nd International Workshop on Expert Evaluation of Compound Semiconductor Material and Technologies (EXMATEC '94)**, Parma, Italy (18-20 May 1994).
199. Co-Organizer - **Second International Guyana Conference**, Georgetown, Guyana (2-3 September 1993).
200. Co-Organizer - **First International Guyana Conference**, New York City, New York, USA (13-14 June 1992).
201. 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).
202. Member, *Organization Committee* - **1992 IEEE International Reliability Physics Symposium (IRPS)**, San Diego, California, USA (30 March - 2 April 1992).

203. Member, *Organization Committee* - **1991 IEEE International Reliability Physics Symposium (IRPS)**, Las Vegas, Nevada, USA (8-11 April 1991).
204. Moderator - *Workshop 9 on Cold Electronics and Instrumentation Session*, **Low Temperature Engineering and Cryogenics (LTEC 90) Conference**, Southampton, United Kingdom (17-19 July 1990).
205. Member, *Technical Advisory Committee* - **First International Conference on Low Temperature Electronics**, Berkeley, California, USA (23-26 April 1990)
206. Member, *Organization Committee* - **1990 IEEE International Reliability Physics Symposium (IRPS)**, New Orleans, Louisiana, USA (26-2z 9 March 1990).
207. Member, *Organization Committee* - **1989 IEEE International Reliability Physics Symposium (IRPS)**, Phoenix Arizona, USA (11-13 April 1989).

Session Chair/Co-Chair at Conferences/Symposia

- **Session Chair/Co-Chair at Conferences/Symposia** **122**

1. Chair, *Forum* 2 *Materials Science and Technology*, **Green Development Forum**, Shenzhen, China (27 April 2024).
2. Chair, *Awards Ceremony*, **7th International Conference on Computers and Devices for Communication (CODEC 2019),** Kolkata, India (Friday 20 December 2019).
3. Chair, *Keynote Session*, **7th International Conference on Computers and Devices for Communication (CODEC 2019),** Kolkata, India (Friday 20 December 2019).
4. Chair, *Closing Ceremony*, **The 24th International Conference on Noise and Fluctuations (ICNF 2017)**, Vilnius, Lithuania, (Friday 23 June 2017).
5. Chair, *Noise and Fluctuations in Mesoscopic Devices and Nanostructures*, **The 24th International Conference on Noise and Fluctuations (ICNF 2017)**, Vilnius, Lithuania, (Tuesday 21 June 2017).
6. Chair, *APEC Smart City Forum Discussion*, **The 2016 World Cymbermatics Congress** (**Cybermatics 2016**), Chengdu, China (Saturday 17 December 2016).
7. Chair, *Keynote Speeches in APEC Smart City Forum*, **The 2016 World Cymbermatics Congress** (**Cybermatics 2016**), Chengdu, China (Saturday 17 December 2016).
8. Chair, Keynote Speech III, **2015 International Conference on Smart City (IEEE Smart City 2015)**, Chengdu, China (Saturday 19 December 2015).
9. Chair, *Session S-1C*, **International Conference on Computers and Devices for Communications (CODEC-15)**, Kolkata, India (Thursday 17 December 2015).
10. Co-Chair, *Photovoltaics, Solar Cells* II, **Organic Semiconductor Materials, Devices, and Processing 5, 227th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 25 May 2015).
11. Co-Chair, *Photovoltaics, Solar Cells* I, **Organic Semiconductor Materials, Devices, and Processing 5, 227th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 25 May 2015).
12. Chair, *Fluorescence Applications* I, **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida (Tuesday 13 May 2014).
13. Chair, *Biomedical Applications* I, **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida (Monday 12 May 2014).
14. Co-Chair, *Emerging Applications and Fabrication* I, **Integrated Optoelectronics 7, 225th Meeting of the Electrochemical Society**, Orlando, Florida (Monday 12 May 2014).
15. Co-Chair, *Flexible and Organic Electronics*, **The 2013 IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC'13)**, Hong Kong (Monday 3 June 2013).
16. Co-Chair, *Poster Session,* **Organic Semiconductor Materials, Devices, and Processing 4, 223rd Meeting of the Electrochemical Society**, Toronto, Canada (Wednesday 15 May 2013).
17. Co-Chair, *Organic Semiconductors: Materials Synthesis, Microstructure, and Performance*, **Organic Semiconductor Materials, Devices, & Processing 4, 223rd Meeting of the Electrochem Soc**, Toronto, Canada (Mon 13 May 2013).
18. 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).
19. Co-Chair, *Optoelectronics - Clinical Applications*, **Sixth International Symposium on Integrated Optoelectronics, The 221st Meeting of the Electrochemical Society**, Seattle, Washington (Monday 7 May 2012).
20. Session Chair, **Eight International Caribbean Conference on Circuits, Devices and Systems (ICCDCS 2012)**, Playa del Carmen, Mexico (Thursday 15 March 2012).
21. 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).

22. Co-Chair– *Poster Session*, **Silicon Nitride, Silicon Dioxide, and Emerging Dielectrics 11, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
23. Co-Chair– *Poster Session*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
24. Co-Chair– *Modeling and Design*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Tuesday 3 May 2011).
25. Co-Chair– *Solar Cells, Photovoltaics*, **Organic Semiconductor Materials, Devices, and Processing 3, 219th Meeting of the Electrochemical Society**, Montreal, Canada (Monday 2 May 2011).
26. 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).
27. 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).
28. Co-Chair, *Optical Sensors* I**, IEEE-URSI 12th International Symposium on Microwave and Optical Technology - ISMOT 2009**, New Delhi, India (Thursday 17 December 2009).
29. Chair, *Valedictory Function and Award Distribution***, IEEE/SPIE 4th International Conference on Computers and Devices for Communications** (**CODEC**), Calcutta, India (Wednesday 16 December 2009).
30. Chair, *Plenary and Keynote Session***, IEEE/SPIE 4th International Conference on Computers and Devices for Communications** (**CODEC**), Calcutta, India (Monday 14 December 2009).
31. 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).
32. 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).
33. 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).
34. Chair, *Devices I*, **20th Int. Conference on Noise and Fluctuations (ICNF 2009),** Pisa, Italy (Tuesday 16 June 2009).
35. Chair, *ADC Circuits***, IEEE International Conference on Electron Devices and Solid-State Circuits 2008** (EDSSC2008**),** Hong Kong (Monday 8 December 2008).
36. Chair, *Advanced Photodetectors I*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Tuesday 14 October 2008).
37. Chair, *Biophotonics 1*, **Integrated Optoelectronics 4, The 214th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 13 October 2008).
38. Chair, *Modeling*, **NanoTr IV – Nanoscience and Nanotechnology Conf.**, Istanbul, Turkey, (Monday 9 June 2008).
39. Co-Chair, *Plenary Session*, **26th International Conference on Microelectronics**, Nis, Serbia (11-14 May 2008).
40. Chair, *Session 5 – Device Modeling*, **Int Sympon Flexible Electronics** (**ISFE**), Tarragona, Spain (6-9 April 2008)
41. Co-Chair, *Special Session on Power Amplifiers*, **German Microwave Conference**, Hamburg-Harburg, Germany (10-12 March 2008).
42. Co-Chair, *Thin Film Transistors I1*, **First Int. Symposium on Organic Semiconductor Materials and Devices, The 212th Meeting of the Electrochemical Society**, Washington, DC (Tuesday 9 October 2007).
43. Co-Chair, *Thin Film Transistors 1*, *First Int. Symposium on Organic Semiconductor Materials and Devices, The 212th Meeting of the Electrochemical Society*, Washington, DC (Monday 8 October 2007).
44. Chair, *MOS-SiGe Session*, **19th International Conference on Noise and Fluctuations** (**ICNF2007**), Tokyo, Japan (Monday 9 September 2007).
45. 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).
46. 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).
47. 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).
48. Co-Chair, *Sensing Materials and Devices*, **Sensors Based on Nanotechnology 3**, **211th Meeting of the Electrochemical Society**, Chicago, Illinois (Monday 7 May 2007).
49. Chair, *Plenary Session*, **IEEE/SPIE International Conference on Computers and Devices for Communications** (CODEC), Calcutta, India (18-20 December 2006).
50. Co-Chair, *Bioelectronics: Electrochemical Frontiers*, **Bioelectronics, Biointerfaces, and Biomedical Applications 2, 210th Meeting of the Electrochemical Society**, Cancun, Mexico (Thursday 2 November 2006).

51. Co-Chair, *Photodetectors and Optical Receivers*, **Third International Symposium on Integrated Optoelectronics, 210th Meeting of the Electrochemical Society**, Cancun, Mexico (Monday 30 October 2006).
52. Co-Chair, *Solid-State Joint General Poster Session*, **209th Meeting of the Electrochemical Society**, Denver, Colorado (Tuesday 9 May 2006).
53. Co-Chair, *Active and Passive Components in CMOS-Compatible Technologies*, **IEEE IEDM**, Washington, DC (Wednesday 7 December 2005).
54. Co-Chair, *Detection of Bio-Molecules*, **208th Meeting of the Electrochemical Society**, Los Angeles, California (Thursday 20 October 2005).
55. Co-Chair, *Bio-Functional Surfaces*, **208th Meeting of the Electrochemical Society**, Los Angeles, California (Tuesday 18 October 2005).
56. Chair, *Optoelectronic and Photonic Devices*, **18th International Conference on Noise and Fluctuations (ICNF 2005),** Salamanca, Spain (Tuesday 20 September 2005).
57. Co-Chair, *Emerging Dielectrics II*, **207th Meeting of the Electrochemical Society**, Quebec City, PQ (19 May 2005).
58. Co-Chair, *Thin Film Photonics*, **207th Meeting of Electrochem. Soc.**, Quebec City, Quebec (Tues. 17 May 2005).
59. Co-Chair, *Defects/Plasma-Induced Damage*, **207th Meeting of the Electrochemical Society**, Quebec City, Quebec (Monday 16 May 2005).
60. Co-Chair, *Interface Characterization*, **207th Meeting of the Electrochemical Society**, Quebec City, Quebec (Monday 16 May 2005).
61. Chair, *WCM-1*, **Workshop on Compact Modeling – Nanotech 2005**, Anaheim, California (Tuesday 10 May 2005).
62. Chair, *Linearity, Distortion and Noise*, **Fifth IEEE International Caracas Conference on Devices, Circuits and Systems (ICCDS-2004)**, Dominican Republic (Thursday 4 November 2004).
63. Co-Chair, *Solid-State Joint General Poster Session*, **206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Tuesday 5 October 2004).
64. Co-Chair, *Fabrication*, **Second International Symposium on Integrated Optoelectronics, 206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 4 October 2004).
65. 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).
66. Co-Chair, Novel *Photonic Structures*, **Second International Symposium on Integrated Optoelectronics, 206th Meeting of the Electrochemical Society**, Honolulu, Hawaii (Monday 4 October 2004).
67. Chair, *Phase Noise in Oscillators and Related Circuits*, **SPIE Conference on Noise in Devices and Circuits**, Gran Canaria, Spain (Friday 28 June 2004).
68. Chair, *Noise in MOSFETs*, **SPIE Conf. on Noise in Devices and Circuits**, Gran Canaria, Spain (Wed. 26 June 2004).
69. Chair, *High Speed Circuits and Applications*, **IEEE Canadian Conference on Electrical and Computer Engineering,** Niagara Falls, ON, Canada (Wednesday 4 May 2004).
70. Chair, *Modeling of Passives*, **Workshop on Compact Modeling – Nanotech 2004**, Boston, MA (10 March 2004).
71. 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).
72. 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).
73. Chair, *Electronic and Optoelectronic Devices 6*, **17th International Conference on Noise and Fluctuations (ICNF 2003),** Prague, Czech (Wednesday 20 August 2003).
74. Chair, *Mesoscopic Devices*, **17th International Conference on Noise and Fluctuations (ICNF 2003),** Prague, Czech (Monday 18 August 2003).
75. Chair, *Measurements and Limitations*, **SPIE Conference on Noise in Devices and Circuits**, Santa Fe, New Mexico (Wednesday 4 June 2003).
76. Chair, *Noise in MOSFETs I*, **SPIE Conf. on Noise in Devices & Circuits**, Santa Fe, NM (Mon. 2 June, 2003).
77. 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).
78. 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).
79. Co-Chair, *Solid State Joint General Poster Session*, **203rd Meeting of the Electrochemical Society**, Paris, France (Tuesday 29 April 2003).
80. 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).

81. 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).
82. 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).
83. Chair, *Session 6, Workshop on Compact Modeling*, **5th International Conference on Modeling and Simulation of Microsystems** (Wednesday 24 April 2002).
84. Chair, *Solid-State Devices 3*, **Fourth International Caracas Conference on Devices, Circuits and Systems (ICCDS-2000)**, Aruba (Thursday 18 April 2002).
85. Co-Chair, *SiO_2 Stress and Interfaces Session*, **Sixth Int. Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, 199th Meeting of the Electrochemical Society, Washington, DC (Wednesday 28 March 2001).
86. 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).
87. 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).
88. 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).
89. Co-Chair, *Electronics/Dielectric Science and Technology Joint General Session*, **198th Meeting of the Electrochemical Society**, Phoenix, Arizona (Thursday 26 October 2000).
90. Chair, *Optical Devices*, **30th European Solid-State Device Research Conf.**, Cork, Ireland (12 September 2000).
91. 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).
92. Co-Chair, **State-of-the-Art Program on Compound Semiconductors XXXI,** 196th Meeting of the Electrochemical Society, Honolulu, Hawaii (Wednesday 20 October 1999).
93. Co-Chair, *Cryogenic Application Aspects*, **Fifth Symposium on Low Temperature Electronics**, 196th Meeting of the Electrochemical Society, Honolulu, Hawaii (Thursday 21 October 1999).
94. 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).
95. 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).
96. Session Chair, *Measurement Technique*, **15th International Conference on Noise in Physical Systems and 1/f Fluctuations (ICNF '99)**, Hong Kong (Thursday 26 August 1999).
97. Chair, *CMOS Sensors*, **Canadian Semiconductor Technology Conf.**, Ottawa (Thursday 12 August 1999).
98. Chair, *Noise in Circuits*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (Thursday 15 July 1999).
99. Chair, *Noise Spectroscopy, Diagnostics and Measurements*, **2nd International Conference on Unsolved Problems of Noise (UPON '99)**, Adelaide, Australia (Wednesday 14 July 1999).
100. 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).
101. 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).
102. Co-Chair, *Parameter Extraction*, **IEEE Int. Conf. on Microel. Test Structures (ICMTS 99)** (Thur. March 18, 1999).
103. Chair, *Photodetectors Session*, **International Conference on Fiber Optics and Photonics (Photonics -98)**, New Delhi, India (Wednesday 16 December 1998)
104. 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).
105. 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).
106. 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).
107. 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).
108. Chair, *Solid State Devices II*, **Second International Caracas Conference on Devices, Circuits and Systems (ICCDS-98)**, Margarita Island, Venezuela (Tuesday 2 March 1998).

109. Chair, *Transistors Session*, **Canadian Semiconductor Tech. Conf.**, Ottawa, Canada (Thursday 14 August 1997)
110. 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).
111. 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).
112. 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).
113. 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).
114. Session Chairman, Noise in Microwave Semiconductor Devices, **1996 Asia-Pacific Microwave Conference** (APMC '96), New Delhi, India (17-20 December 1996).
115. 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).
116. 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).
117. Chairman, *Heterostructures and Alternative Devices Session*, **Electrochemical Society Spring Meeting**, Honolulu, Hawaii (16-21 May 1993).
118. 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).
119. 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).
120. Chairman, *Cold Electronics and Instrumentation*, **Low Temperature Engineering and Cryogenics (LTEC 90) Conference**, Southampton, United Kingdom (17-19 July 1990).
121. Chairman, *Instrumentation and High Power Devices*, **First International Conference on Low Temperature Electronics**, Berkeley, California, USA (23-26 April 1990)
122. Session Chairman - **1989 Canadian Conference on Very Large Scale Integration (CCVLSI 89)**, Vancouver, British Columbia, Canada (22-24 October 1989).

Service – Reviewing, Short Courses and Invited Seminars / Named Lectures

- **Reviewer for 73 journals and 89 conferences/symposia**
- **Service - Granting Agencies and Miscellaneous 26**
- **Invited Short Courses, Tutorials and Panels - Industry, University, Conferences 22**
- **Invited Seminars - University, Industry and Research Organizations 287**

Journals Reviewing

- **Reviewer for 73 journals**

1. ACS Applied Materials & Interfaces (2013 -).
2. ACS Sensors (December 2019 -)
3. Analog Integrated Circuits and Signal Processing (1996 -).
4. Applied Optics (1989).
5. Applied Physics Letters (1996 -).
6. Arabian Journal for Science and Engineering (1993).
7. Canadian Journal of Physics (1992 -).
8. Chinese Optics Letters (2013 -).
9. Cryogenics (1988 -).
10. Electrochemical and Solid-State Letters (ESL)
11. Fluctuations and Noise Letters (2001 -)
12. Frontiers of Optoelectronics, Higher Education Press and Springer (2013 -).
13. IEE Electronics Letters (1994 -).
14. IEE Proceedings (1995 -)
15. IEEE Access (2020 -).
16. IEEE Electron Device Letters (1994 -).

17. IEEE Journal of Lightwave Technology (1996 -).
18. IEEE Journal of Display Technology (2011 -).
19. International Journal of Modern Physics B (2013 -).
20. IEEE Journal of Quantum Electronics (1998 -).
21. IEEE Journal Solid State Circuits (1991 -).
22. IEEE Microwave and Guided Wave Letters (2000).
23. IEEE Microwave and Wireless Components Letters (2002 -)
24. IEEE Potentials (2016 -)
25. IEEE Photonics Technology Letters (2001 -)
26. IEEE Sensors Journal (2010 -).
27. IEEE Transactions on Communications (2015 -).
28. IEEE Transactions on Biomedical Circuits and Systems (2009-)
29. IEEE Transactions on Circuits and Systems I (2010 -).
30. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (1994 -).
31. IEEE Transactions on Electron Devices (1995 -).
32. IEEE Trans. on Microwave Theory and Techniques (2002 -)
33. IEEE Transactions on Nanotechnology (2009-)
34. IET Circuits, Devices and Systems (2009-)
35. IETE Technical review (2015 -).
36. International Journal of High Speed Electronics and Systems (2002).
37. Ionics (2012 -).
38. Journal of Applied Physics (1995 -).
39. Journal of Electrical and Electronics Engineering Research, Academic Journals (2013 -).
40. Journal of Electrical and Computer Engineering, Hindawi Publishing Corporation (2014 -).
41. Journal of the Electrochemical Society (1994 -).
42. Materials Science and Engineering B (1992 -).
43. Microelectronic Engineering (2010 -).
44. Microelectronics Journal (2008 -)
45. Microelectronics Reliability (1997 -)
46. Modern Physics Letters B (2013 -).
47. Nano Energy (2015 -).
48. Nano Letters (2009 -)
49. Nanotechnology (2010 -)
50. Nature Communications (2013 -)
51. Nature Scientific Reports (2013 -)
52. Neural Computing and Applications, Springer Journal (2015 -).
53. Optics Communications (2006 -)
54. Optics Express (2005 -)
55. Organic Electronics (2009-)
56. Philosophical Magazine Letters (2009-)
57. Photonics (2019 -)
58. Physica B (2009-)
59. Physica E (2012 -).
60. Journal “Recent Patents on Engineering”, Bentham Science Publishers (2013 -).
61. Reviews of Scientific Instruments (2015 -).
62. Science Advances (January 2020 -)
63. Scientific Reports (January 2020 -)
64. Semiconductor Science and Technology (1999 -)
65. Sensors (2009-)
66. Sensors and Actuators: A. Physical (2015 -).
67. Sensors & Actuators: B. Chemical (2009 -).

68. SN Computer Science (2021 -).
69. Solid State Electronics (1987 -).
70. Synthetic Metals (2009 -).
71. Thin Solid Films (2010 -).
72. Trends in Environmental Analytical Chemistry (2015 -).
73. Journal of Modern Optics (2013 -).

Conference Proceedings Reviewing (Incomplete List)

- **Reviewer for 89 conferences/symposia**

1. ***Canadian Conference on VLSI***, Vancouver, B.C. (1989).
2. Thirteenth ***Canadian Semiconductor Technology Conference***, Montreal (August 2007)
3. Twelfth ***Canadian Semiconductor Technology Conference***, Ottawa (August 2005).
4. Eleventh ***Canadian Semiconductor Technology Conference***, Ottawa (August 2003).
5. Tenth ***Canadian Semiconductor Technology Conference***, Ottawa (13-17 August 2001).
6. Ninth ***Canadian Semiconductor Technology Conference***, Ottawa (10-13 August 1999).
7. Eight ***Canadian Semiconductor Technology Conference***, Ottawa (14-18 August 1995).
8. Bioelectronics, Biointerfaces, and Biomedical Applications 2, 210th Meeting of the ***Electrochemical Society***, Cancun, Mexico (29 October – 3 November 2006).
9. Dielectrics and the Dielectric-Electrolyte Interface in Biological and Biomedical Applications, The 208th Meeting of the ***Electrochemical Society***, Los Angeles, California (17-21 October 2005).
10. Fourth International Symposium on Integrated Optoelectronics, 214th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (12-17 October 2008).
11. Third International Symposium on Integrated Optoelectronics, 210th Meeting of the ***Electrochemical Society***, Cancun, Mexico (29 October – 3 November 2006).
12. Second International Symposium on Integrated Optoelectronics, 206th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (3-8 October 2004).
13. First International Symposium on Integrated Optoelectronics, 201st Meeting of the ***Electrochemical Society***, Philadelphia, Pennsylvania (12-17 May 2002).
14. Seventh International Symposium on Low Temperature Electronics, 204th Meeting of the ***Electrochemical Society***, Orlando, Florida (12-17 October 2003).
15. Sixth International Symposium on Low Temperature Electronics, 2001 Joint Int'l Meeting of The ***Electrochemical Society and the Int'l Society of Electrochemistry***, San Francisco, CA (2-7 September 2001).
16. Fifth Symposium on Low Temperature Electronics, 196th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (17-22 October 1999).
17. Fourth International Symposium on Low Temp. Electronics and High Temperature Superconductivity, 191st Meeting of the ***Electrochemical Society***, Montreal, Canada (4-9 May 1997).
18. Organic Semiconductor Materials, Devices, and Processing 2, 216th Meeting of the **Electrochemical Society**, Vienna, Austria (4-9 October 2009).
19. Organic and Polymeric Semiconductor Devices I, 212th Meeting of the ***Electrochemical Society***, Washington, DC (7-12 October 2007).
20. Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics X, 215th Meeting of the **Electrochemical Society**, San Francisco, California (24-29 May 2009).
21. Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics IX, 211th Meeting of the ***Electrochemical Society***, Chicago, Illinois (6-11 May 2007).
22. Silicon Nitride and Silicon Dioxide Thin Insulating Films and Other Emerging Dielectrics VIII, 207th Meeting of the ***Electrochemical Society***, Quebec City, Quebec (15-20 May 2005).
23. Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 203rd Meeting of the ***Electrochemical Society***, Paris, France (27 April 2 May 2003).
24. Sixth International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 199th Meeting of the ***Electrochemical Society***, Washington, DC (25-30 March 2001).
25. Fifth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 195th Meeting of the ***Electrochemical Society***, Seattle, Washington (2-7 May 1999).
26. Fourth Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films, 191st Meeting of the ***Electrochemical***

Society, Montreal, Canada (4-9 May 1997).

27. State-of-the-Art Program on Compound Semiconductors XXXI, 196th Meeting of the ***Electrochemical Society***, Honolulu, Hawaii (17-22 October 1999).
28. State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVII), 193rd Meeting of the ***Electrochemical Society***, San Diego, California (3-8 May 1998).
29. State-of-the-Art Program on Compound Semiconductors (SOTAPACS XXVI), 191st Meeting of the ***Electrochemical Society***, Montreal, Canada (4-9 May 1997).
30. Thin Film Transistor Technologies IV, 194th Meeting of the ***Electrochemical Society***, Boston, Massachusetts (1-6 November 1998).
31. Fifth ***IEEE International Caribbean Conference on Devices, Circuits and Systems*** (ICCDS-2004), Dominican Republic (3-5 November 2004).
32. Fourth ***IEEE International Caribbean Conference on Devices, Circuits and Systems*** (ICCDS-2000), Aruba (17-19 April 2002).
33. Third ***IEEE Int'l Caracas Conf on Devices, Circuits and Systems*** (ICCDS-2000), Cancun, Mexico (15-17 March 2000).
34. Second ***International IEEE Caracas Conference on Devices, Circuits and Systems*** (ICCDS-98), Margarita Island, Venezuela (2-4 March 1998).
35. Eight ***IEEE International Conference on Electron Devices and Solid-Sate Circuits*** (EDSSC 2012), Bangkok, Thailand (3 -5 December 2012).
36. Sixth International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC 2002), Budapest, Hungary (26-29 May 2002).
37. Fifth International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC 2000), Crete, Greece (21-24 May 2000).
38. Fourth International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '97), Cardiff, Wales (22-24 June 1998).
39. Third Int'l Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '96), Freiburg, Germany (12-15 May 1996).
40. Second International Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '94), Parma, Italy (18-20 May 1994).
41. First Int'l Workshop on ***Expert Evaluation of Compound Semiconductor Material and Technologies*** (EXMATEC '92), Ecole Centrale de Lyon, Lyon, France (19-22 May 1992).
42. ***European Nano Systems*** 2006, Paris, France (14-15 December 2006).
43. First International ***Conference on Low Temperature Electronics***, Berkeley, California, USA (1990).
44. ***IEEE Bipolar Circuits & Technology Meeting*** (BCTM) (1993).
45. ***IEEE Device Research Conference*** (2003).
46. ***IEEE Int'l Electron Device Meeting*** (IEDM) (1994, 2003-2005).
47. ***IEEE Int'l Conf. on Electron Devices and Solid-State Circuits*** 2008 (EDSSC2008), Hong Kong (8-10 Dec. 2008).
48. ***IEEE Conf. on Electron Devices and Solid-St. Cir***., Hong Kong, (7-9 July 2003).
49. ***20th IEEE International Conference Mixed Design of Integrated Circuits and Systems*** (MIXDES), Gdynia, Poland (20-22 June 2013).
50. ***IEEE Device Research Conference*** (2003-2004)
51. ***IEEE International Conference on Electron Devices and Solid-State Circuits*** 2007 (EDSSC2007), Southern Taiwan University, Tainan, Taiwan (20-22 December 2007).
52. Third ***International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics***, Montreux, Switzerland (20-23 October 2003).
53. ***IEEE International Conference on RFID 2007***, Grapevine, Texas (26-28 March 2007).
54. ***IEEE International Reliability Physics Symposium*** (IRPS), San Diego, California, USA (30 March - 2 April 1992).
55. ***IEEE International Reliability Physics Symposium*** (IRPS), Las Vegas, Nevada, USA (8-11 April 1991).
56. ***IEEE International Reliability Physics Symposium*** (IRPS), New Orleans, Louisiana, USA (26-29 March 1990).
57. ***IEEE International Reliability Physics Symposium*** (IRPS), Phoenix Arizona, USA (11-13 April 1989).
58. ***IEEE Int Conf on Computers and Devices for Communications* (CODEC)**, Calcutta, India (17-19 December 2012).
59. ***IEEE/SPIE Int Conf on Comp & Devices for Communications* (CODEC 2012)**, Calcutta, India (14-16 Dec 2009).
60. ***IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC 2009)**, Calcutta, India (18-20 December 2006).

61. ***IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC 2006)**, Calcutta, India (18-20 December 2006).
62. ***IEEE/SPIE International Conference on Computers and Devices for Communications* (CODEC 2004)**, Calcutta, India (1-3 January 2004).
63. ***22nd International Conference on Noise and Fluctuations*** (ICNF 2013), Montpellier, France (24-28 June 2013).
64. ***21st International Conference on Noise and Fluctuations*** (ICNF 2011), Toronto, Canada (12-16 June 2011).
65. Twentieth ***International Conference on Noise and Fluctuations*** (ICNF2009), Pisa, Italy (15-19 June 2009).
66. Nineteenth ***International Conference on Noise and Fluctuations*** (ICNF2007), Tokyo, Japan (September 2007).
67. Eighteenth ***International Conf. on Noise and Fluctuations*** (ICNF2005), Salamanca, Spain (19-23 September 2005).
68. Seventeenth ***International Conference on Noise and Fluctuations***, Prague, Czech (August 18-22, 2003).
69. Sixteenth ***International Conf. on Noise in Physical Systems & 1/f Fluctuations***, Gainesville, Florida (22-25 Oct 2001).
70. Fifteenth ***Int'l Conf. on Noise in Physical Systems & 1/f Fluctuations*** (ICNF '99), Hong Kong (23-26 August 1999).
71. Fourteenth ***International Conference on Noise in Physical Systems and 1/f Fluctuations*** (ICNF) (1997 -)
72. Eight ***Jordanian International Electrical and Electronics Engineering Conf.***, Amman, Jordan (16 - 18 April 2013).
73. International ***Symposium on Flexible Electronics*** (ISFE), Tarragona, Spain (6-9 April 2008).
74. ***Polytronic 2007*** – The 6th ***International IEEE Conference on Polymers and Adhesives in Microelectronics and Photonics***, Miraikan - Odaiba, Tokyo, Japan (16-18 January 2007).
75. ***Low Temperature Engineering and Cryogenics*** (LTEC 90) Conference, Southampton, UK (17-19 July 1990).
76. ***Second IEEE Saudi International Conference on Electronics, Communications and Photonics*** (SIEPC-2013), Riyadh, Saudi Arabia (27-30 April 2013).
77. ***24th Symposium on Microelectronics Technology and Devices,*** Natal, Brazil (August 31 - September 3, 2009).
78. ***SIGGRAPH Conference***, USA (1991).
79. ***SPIE Conf. on Noise in Devices and Circuits***, Maspalomas, Gran Canaria, Spain (26-28 May 2004).
80. ***SPIE Conf on Noise & Information in Nanoelectronics***, Sensors & Standards, Santa Fe, New Mexico (1-4 June 2003).
81. ***SPIE International Symposium on Microelectronics and Assembly - Automatic Inspection and Novel Instrumentation Symposium***, Singapore (23-27 June 1997).
82. The ***Fourth IASTED Int'l Conf on Circuits, Signals, and Systems***, San Francisco, California, (20-22 November 2006).
83. The 12th ***International Meeting on Chemical Sensor*** (IMCS-12), Columbus, Ohio (13-16 July 2008).
84. ***First IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare*** (Ubi-HealthTech 2013), Jinhua, China (1-3 July 2013).
85. Fourth ***International Conference on Unsolved Problems of Noise and Fluctuations in Physics, Biology & High Technology***, Gallipoli (Lecce), Italy (6-9 June 2005)
86. Third ***International Conference on Unsolved Problems of Noise*** (UPON '02), Washington, DC (September 2002).
87. Second ***International Conf. on Unsolved Problems of Noise*** (UPON '99), Adelaide, Australia (11-15 July 1999).
88. First ***International Conference on Unsolved Problems in Noise***, Szeged, Hungary (September 1996).
89. ***27th Symposium on Microelectronics Technology and Devices*** (SB Micro 2012), Brasilia, Brazil (30 Aug -2 Sep 2012).

Professional Service to Granting Agencies

Service to Granting Agencies - 26

Reviewer, Proposal from **European Research Council (PE7 – Systems and Communication Engineering)** (2023).

Reviewer, Proposal from **Alberta Major Innovation Fund,** Canada (2023).

Reviewer, Proposal from **Netherlands Organization for Health Research and Development** (ZonMw) (2023).

Reviewer, Proposal from **SNSF Mathematics, Informatics, Natural Sciences & Tech.,** Switzerland (2020 - present).

Reviewer, **Mitacs Accelerate Research Proposals** (2014 -- present).

Reviewer, Proposal from **Research Grants Council (RGC)**, Hong Kong (2009 - present).

Reviewer, Proposal from **Science & Engineering Research Council (SERC)**, Singapore (2009 - present).

Reviewer, Nominations from **Canada Research Chair (CRC) Program** (2002 - present).

Reviewer, Proposal from **Hong Kong Science Council** (2001 - present).

Reviewer, Several types of proposals, **NSERC of Canada** (1992 - present).

Reviewer, Proposals from **National Science Foundation (NSF)**, USA (1992 - present).

Reviewer, Proposal from **Technology Foundation – STW**, Nederland (2009, 2012, 2020).

Chair, **Operations and Maintenance Support for Research Equipment (OMSRE) Selection Committee**, Natural Sciences and Engineering Research Council (NSERC) of Canada (2016 - 2017).

Chair, **GSC 1051 – Major Resources Support**, NSERC of Canada (2010 - 2011).

Member, **GSC 1051 – Major Resources Support**, NSERC of Canada (2008-2010).

Reviewer, Proposals from British Columbia Innovation Council (BCIC), The Natural Resources and Applied Sciences (NRAS) Endowment Program – Member of the Electrical and Computer Engineering: Wireless Committee (2010).

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, Proposal from **Alberta Ingenuity NanoWorks Program** (2009).

Reviewer, Proposal from **US Army Medical Research and Material Command (USAMRMC)**, USA (2009).

Chair, **GSC 334 - Discovery Grants**, NSERC of Canada (2006 - 2007).

Member, **GSC 334 - Discovery Grants**, NSERC of Canada (2004 - 2006).

Reviewer, Science Council of British Columbia (SCBC) (1992 -1999).

Invited Short Courses, Tutorials and Panels

- **Total Invited Short Courses, Tutorials and Panels – 22**

1. *Invited Panelist*, "*Kingdom's semiconductors Landscape*: *Navigating Opportunities and Shaping the Future*" at **2024 Future of Semiconductors Forum**, Riyadh, Saudi Arabia (Wednesday 5 June 2024). **Many students, doctors, entrepreneurs, and company scientists/engineers attended the Panel discussion.**
2. *Panel Chair*, "*Smart X*" at **2019 International Academicians Summit and APEC Innovation Technology Dialog 2019**, Chengdu, China (Tuesday 15 October 2019).
3. *Invited Panelist*, "*Smart X*" at **2019 International Academicians Summit and APEC Innovation Technology Dialog 2019**, Chengdu, China (Tuesday 15 October 2019).
4. *Invited Panelist*, "*Summit on High Performance Computing and Communications for Smart Cities*" in **2019 IEEE HPCC/Smart City/DSS 2019 (21st International Conference High Performance Computing and Communications / 17th International Conference on Smart City / 5th International Conference on Data Science and Systems)**, p. 21, Zhangjiajie, China, (10 August 2019).
5. *Invited Panelist*, "*Achieving Trustworthy Cyber Systems: Challenges and Strategies*" in **2017 IEEE ISPA (International Symposium on Parallel and Distributed Processing with Applications) / IEEE IUCC (International Conference on Ubiquitous Computing) / SpaCCS (10th International Conference on Security, Privacy and Anonymity in Computation, Communication and Storage) Joint Plenary Panel Session**, p. 28, Guangzhou, China, (14 Dec 2017).
6. *Invited Panelist*, "*Made in China* 2025 *and Industry* 4.0", Yiwu, China, (19 September 2017), **Many entrepreneurs, company scientists/engineers and academics attended the International Academicians Forum**.
7. *Invited Tutorial*, "*Unprecedented Vision: From Quantum Dots to Silicon Imagers*," ," Chip on the Sands - SB-Micro, Fortaleza, Brazil (Tuesday 29 August 2017). **Many students, academics, entrepreneurs, and company scientists/engineers attended the Tutorial (100 minutes)**.
8. *Invited Tutorials*, "*Cyber-Physical-Social Systems - From Components to Ubiquitous Intelligence*," School of Software Technology, Dalian University of Technology, Dalian, China (Tuesday 11 – Thursday 13 July 2017)., **Many students, and faculty members attended the Tutorials (10 hours)**. http://ssdut.dlut.edu.cn/info/1111/10149.htm
9. *Invited Panelist*, "*Biomedical Technologies – Challenges and Opportunities*", **Philippine Council for Health Research and Development (PCHRD) Conference: Going Global: Increasing International Partnerships in Research and Innovation for Health,** Manila, Philippines, 2 pages (17 March 2016). **Many students, doctors, entrepreneurs, and company scientists/engineers attended the panel discussion**.
10. *Panel Chair and Panelist*, "*Challenges and Opportunities in Ubi-HealthTech: Computing, Communications, Data Analytics, Health Information, Medical, Security, Sensors and Software*", **2nd IEEE International Symposium on Future Information and Communication Technologies for Ubiquitous Healthcare** (Ubi-HealthTech 2015), Beijing,

China (Friday 29 May 2015). **Many graduate students attended the panel session**.

11. *Invited Short Course*, "*Sensor Technology and Water Quality Monitoring"* - 2-hour short-course presentation, **2014 Gerhard Jirka Summer School (GJSS) on Environmental and Fluid Mechanics: *Modeling and Its Role in Sustainable Development*, Hong Kong University of Science and Technology (HKUST)**, (Saturday 13 December 2014).
12. *Invited Tutorial*, *"Pervasive Health Care Technologies*" - 3-hour tutorial presentation, Workshop at **Second Saudi International Electronics, Communications and Photonics Conference** (**SIECPC**), Riyadh, Saudi Arabia (Saturday 27 April 2013). **Many students, doctors, researchers, entrepreneurs and other professionals attended the Tutorial.**
13. *Invited Tutorial*, "*Noise Issues and Modeling in Silicon-based Devices*" - 1-hour tutorial presentation, **Second International Training Course in Compact Modeling – European Research Network**, Tarragona, Spain (28-29 June 2012).
14. *Invited Tutorial*, "*Noise Issues in CMOS Devices and Circuits*" - 1-hour tutorial presentation, **First International Training Course in Compact Modeling**, Tarragona, Spain (30 June – 1 July 2010).
15. *Invited Tutorial*, "*RF Noise Modeling in MOSFETs Including Gate Current Effects*" - 1-hour tutorial presentation, **IEEE Int. Microwave Symposium Workshop – Noise Measurements and Modeling for CMOS**, San Francisco, CA (11 June 2006).
16. *Invited Short Course*, "*Noise Theory, High-frequency Noise Characterization, HF Noise Modeling of MOSFETs, Design Strategies of LNA, Noise Research Activities at McMaster* – CH Chen and MJ Deen, **Short Course at Sony Semiconductor Corporation**, 7 lectures (7 hours short course) (Thursday 28 July 2005).
17. *Invited Short Course*, "*RF Noise in MOSFETs – Experiments*; *RF Noise Modeling of MOSFETs*; and *Effect of the Gate Tunneling Current on the RF Noise of MOSFETs*" - MJ Deen, **4-hours Short Course at Seoul National University** (30 May 2005).
18. *Invited Tutorial*, "*High-Frequency Noise Modeling of MOSFETs for RF IC Applications*" *– MJ Deen and CH Chen* - 1-hour tutorial presentation, **Fabless Semiconductor Association (FSA) Modeling Workshop**, San Jose, CA (15 September 2004).
19. *Invited Tutorial*, "*CMOS Device Noise Extraction and Performance*" *– MJ Deen and CH Chen* - 1-hour tutorial presentation, **IEEE International Microwave Symposium (IMS)/Radio Frequency Integrated Circuits (RFIC) Sponsored Workshop**, Texas (June 2004)
20. *Invited Tutorial*, "*RF Noise Modeling of MOSFETs*" - 1-hour tutorial presentation, **Fabless Semiconductor Association (FSA) Modeling Workshop**, Santa Clara, CA (Thursday 12 October 2000).
21. *Invited Tutorial*, "*High Frequency Noise Measurements and Modeling of MOSFETs*" - 1-hour tutorial presentation, **Tutorial Short Course at the IEEE Int'l Conf. on Microelectronic Test Structures (ICMTS 99),** Göteborg, Sweden (Mon 15 March 1999).
22. *Invited Short Course*, "*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 and Named Lectures

- **Total Invited Seminars – 287**

1. *Smart Sensing Towards Ubiquitous Healthcare*, ***Distinguished Lecture***, Zhaoqing Middle School, Zhaoqing City, Guangdong Province, China (Saturday 30 March 2024).
2. *AI, IoT & Smart Sensing Towards Ubiquitous Healthcare*, ***Buqing Distinguished Lecturer***, School of Computer Science, Fudan University (Tuesday 12 December 2023).
3. *Doing Great Research in Graduate School and Beyond – Experiences & Reflections*, ***Distinguished Lecture***, College of Mechanical Engineering, Zhejiang University, Hangzhou, China (Friday 13 October 2023).
4. *Smart Software-Enabled Sensing Systems for U-Healthcare*, ***Distinguished Lecture***, College of Intelligence and Computing, Tianjin University, Tianjin, China (Tuesday 10 October 2023).
5. *Doing Great Research in Graduate School and Beyond*, ***Distinguished Lecture***, School of Microelectronics, Xidian University, Xian, China (Thursday 10 August 2023).
6. *Our Research in BT, IT and NT @ McMaster*, ***Distinguished Lecture***, School of Microelectronics, Xidian University, Xian, China (Mon 7 Aug 2023).
7. *High-performance Nano-/Optoelectronics for Healthcare Applications*, ***Distinguished Lecture***, School of Microelectronics, Xidian University, Xian, China (Mon 7 Aug 2023).
8. *AI-Enabled Smart Sensing Systems for U-Healthcare*, ***Distinguished Lecture,*** SMBU - Shenzhen Moscow-State University Beijing Institute of Technology University, Shenzhen, China (Monday 3 July 2023).

9. *Smart Sensing Systems for U-Healthcare – AI is a Key Enabler*, ***Distinguished Lecture,*** Shenzhen Institute of Advanced Technology (SIAT), Chinese Academy of Sciences (CAS), Shenzhen, China (Mon 29 May 2023).
10. *Wearable Sensors for Ubiquitous-Healthcare and Active Aging*, ***Distinguished Lecture***, Hong Kong Centre for Cerebro-cardiovascular Health Engineering, City University of Hong Kong (6 April 2023). www.hkcoche.org
11. *Navigating Academia – Experiences and Reflections*, ***ECE Distinguished Research Lecture***, Hong Kong Centre for Cerebro-cardiovascular Health Engineering, City University of Hong Kong (6 April 2023). www.hkcoche.org
12. *Navigating Academia – Experiences and Reflections*, ***ECE Distinguished Research Lecture***, McMaster University (5 December 2022).
13. *Successfully Navigating Academia in Canada*, ***BIRS-ERG* (*Black, Indigenous, Racialized Staff – Employment Resource Group*) *&* *BSSC* (*Black Student Success Centre*) *Special Lecture***, McMaster University (22 September 2022).
14. *Integrating Nanoelectronics and Optoelectronics for Healthcare Applications*, ***IEEE Electron Device Society Distinguished Lecture,*** Special Mini Colloquia (MQ) on "75th Anniversary of Transistor Invention", IEEE EDS Delhi Chapter, India (Monday 22 August 2022).
15. *Smart Sensors & Smart Homes for U-Healthcare*, ***Distinguished Lecture,*** Ruse University, Ruse, Bulgaria (Tuesday 16 May 2022).
16. *Microelectronics: Introduction, Course Details, Philosophy and PBL Examples*, ***Distinguished Lecture,*** Ruse University, Ruse, Bulgaria (Tuesday 16 May 2022).
17. *Smart Sensors & Smart Homes for U-Healthcare – AI is a Key Enabler*, ***IEEE Electron Device Society Distinguished Lecture,*** IEEE EDS Germany Chapter (Friday 22 April 2022).
18. *Bioimagers – Having Fun at the Intersection of Engineering and Sciences*, ***Distinguished Lecture,*** School of Engineering Sciences, Huazhong University of Science and Technology, Wuhan, China, (Saturday 12 October 2019).
19. *Smart Sensors for Ubiquitous Healthcare – AI is a Key Enabler*, ***Distinguished Lecture,*** School of Computer Science and Technology, Chongqing University of Posts and Telecommunications, Chongqing, China, (Tues 27 August 2019).
20. *Smart Sensors & Smart Homes for U-Healthcare – AI is a Key Enabler*, ***IEEE Electron Device Society Distinguished Lecture,*** "Frontiers in New Emerging Technology (FINETECH)", IEEE EDS Mid-Hudson Chapter & AI Hardware Center at IBM Research, SUNY Polytechnic University, Albany, New York, USA (Thursday 22 August 2019).
21. *Smart Sensors for Environmental Applications*, ***Distinguished Lecture in 111 Project,*** School of Microelectronics, Xidian University, Xian, China (Tuesday 9 July 2019).
22. *Smart Sensors for Water Quality Monitoring*, ***Distinguished Lecture,*** School of Information Science and Electronics, Zhejiang University, Hangzhou, China, (Thursday 27 June 2019).
23. *Smart Sensors & Smart Homes for U-Healthcare – AI is a Key Enabler* **- Part II**, ***Overseas Academic master's Scholar Award Distinguished Lecture,*** School of Software Technology, Dalian University of Technology, Dalian, China (Tuesday 11 June 2019).
24. *Smart Sensors & Smart Homes for U-Healthcare* - **Part I**, ***Overseas Academic Masters Scholar Award Distinguished Lecture,*** School of Software Technology, Dalian University of Technology, Dalian, China (Tuesday 11 June 2019).
25. *Smart Sensors, IoT & Data Analytics - Research, Trends and Opportunities*, ***Distinguished Lecture,*** School of Computer Science, Wuhan University, Wuhan, China (Monday 21 January 2019)
26. *Smart Sensors Smart Sensors & Smart Homes for U-Healthcare*, ***Distinguished Lecture,*** School of Civil Engineering and Mechanics, Huazhong University of Science and Technology, Wuhan, China (Friday 18 January 2019)
27. *Smart Sensors, IoT & Data Analytics - Research, Trends and Opportunities*, ***Distinguished Lecture,*** School of Mechanical Science and Engineering, Huazhong University of Science and Technology, Wuhan, China (Thursday 17 January 2019).
28. *Compact Modeling of Organic Transistors*, ***IEEE Electron Device Society Distinguished Lecture,*** "IEEE EDS Mini-Colloquium on Semiconductor Device Modeling" and "DOMINO" H2020 RISE Project", IEEE Spanish Chapter, Tarragona, Spain (Tues 25 September 2018).
29. *Smart Sensors for the Grand Challenges in Environmental and Health Applications*, ***Distinguished Lecture,*** Shanghai Research Institute of Microelectronics (SHRIME), Peking University, Shanghai, China (Tuesday 28 August 2018).
30. *Smart Sensors and IoT - Research, Trends and Opportunities*, School of Automation, Beihang University, Beijing, China (Thursday 28 June 2018).
31. *Research – A Journey of Wonders, Surprises and Joys*, ***Distinguished Lecture,*** School of Engineering Sciences, Huazhong University of Science and Technology, Wuhan, China (Tuesday 29 May 2018).
32. *Writing a Research Paper*, School of Automation, Beihang University, Beijing, China (Sunday 20 May 2018).
33. *Want Higher Research Impact – Be a Better Communicator*, ***Distinguished Lecture,*** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzhen, China (Friday 11 May 2018).
34. *Having Fun While Developing a High-impact Research Career*, ***Distinguished Lecture,*** Department of Electrical and

Electronic Engineering, Southern University of Science and Technology, Shenzhen, China (Wednesday 4 April 2018).

35. *Being a Great Hurdler – Key Ingredients of Your Tenure Dossier*, ***Distinguished Lecture,*** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzhen, China (Thur. 8 March 2018).
36. *Research – A Pleasurable Journey*, ***Distinguished Lecture,*** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzhen, China (Friday 12 January 2018).
37. *Smart Sensors and IoT – Status and Future*, ***Distinguished Lecture,*** Ningbo Weiji Electrical Power Technology Co. Ltd., Ningbo, China (Tuesday 26 December 2017).
38. *Smart Sensors, Smart Homes and Smart Cities*, ***Distinguished Lecture,*** Hainan University, Haikou, China (Wednesday 20 December 2017).
39. *Smart Sensors and IoT - Research, Trends and Opportunities*, **RAE Distinguished Visiting Fellowship Award Lecture,** Department of Computer Science, College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, UK (Thursday 19 October 2017).
40. *Smart Sensor Systems for Ubiquitous Healthcare* I, **PIFI Distinguished Scientist Award Lecture**, Chinese Academy of Sciences – Institute of Microelectronics, Beijing, China (Wednesday 13 September 2017).
41. *Smart Sensor Systems for Ubiquitous Healthcare* II, **PIFI Distinguished Scientist Award Lecture**, Chinese Academy of Sciences – Institute of Electronics, Beijing, China (Tuesday 12 September 2017).
42. *Smart Sensors – Research, Trends and Opportunities*, **IEEE Electron Device Society Distinguished Lecture**, Departamento de Engenharia de Teleinformática, Universidade Federal do Ceará (UFC), Fortaleza, Brazil (Monday 4 September 2017).
43. *Biosensors - Playing at the Crossroads of Engineering and the Sciences*, **Distinguished Lecture,** Sichuan University, Chengdu, China (Saturday 15 April 2017).
44. *Smart Sensors for the Grand Challenge in Healthcare*, **UESTC President Distinguished Lecture,** University of Electronic Science and Technology of China (UESTC), Chengdu, China (Friday 14 April 2017).
45. *Smart Sensors for the Grand Challenge in Healthcare*, **Distinguished Lecture,** Jiangxi University of Science and Technology, Ganzhou, China (Tuesday 11 April 2017).
46. *Smart Sensor Systems for Ubiquitous Healthcare*, **Distinguished Lecture,** Qixia District Government Talent Service Center, Nanjing, China (Monday 13 March 2017).
47. *Smart Sensors for Ubiquitous Healthcare*, **Distinguished Lecture,** Nanjing Medical University, Nanjing, China (Friday 10 March 2017).
48. *Smart Sensors for Environmental Applications*, **Distinguished Lecture,** College of Engineering, Nanjing Agricultural University, Nanjing, China (Friday 10 March 2017).
49. *Smart Sensors for Ubiquitous Healthcare*, **Distinguished Lecture,** Jiangsu Life Science & Technology Innovation Park, Nanjing, China (Thursday 9 March 2017).
50. *Smart Sensors – Research, Trends and Opportunities*, **Distinguished Lecture,** Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzhen, China (Monday 20 February 2017).
51. *Smart Sensors for Health Applications*, **IEEE Electron Device Society Distinguished Lecture,** Departamento de Electrónica y Tecnología de Computadores, Universidad de Granada, Granada, Spain, (Tuesday 11 January 2017).
52. *Smart Sensors and Smart Home: State-of-the-Art and Future Perspectives*, Computer Science Department, University of Science and Technology Beijing (USTB), Beijing, China (Friday 30 December 2016).
53. *Smart Sensors, Smart Homes and Smart Cities*, eHualu-BUPT Research and Technology Development Institute, Yiwu, China (Tuesday 27 December 2016).
54. *Smart Sensors, Smart Homes and Smart Cities*, School of Computer Science and Engineering, Beihang University, Beijing, China (Tuesday 27 December 2016).
55. **Opening Plenary Talk,** *Smart Sensors for Environmental and Health Applications*, **IEEE Electron Device Society Distinguished Lecture,** Global Foundries and IEEE Electron Devices Society "*New Frontiers in Electron Devices*" Global Café, Malta, New York, USA (Thursday 11 August 2016).
56. **World Expert Speaker,** *Smart Sensors for the Grand Challenges in Health and Environmental Applications*, University of the Philippines, Manila, Philippines (Friday 15 July 2016).
57. *Engineering Education and Economic Development - Fact or Fiction*, **IEEE Electron Device Society Distinguished Lecture, Graduate Students Meeting on Electronics Engineering,** Universitat Rovira i Virgili (URV), Tarragona, Spain (Friday 1 July 2016).
58. *Flexible Electronics*: *Opportunities and Challenges*, **IEEE Electron Device Society Distinguished Lecture,** Universitat Rovira i Virgili, Tarragona, Spain (Wednesday 29 June 2016).
59. *Smart Sensors for the Grand Challenges in Health and Environmental Applications*, School of Engineering Science, Huazhong University of Science and Technology – HUST, Wuhan, China (Tuesday 24 May 2016).

60. **Global Lecture Series,** *Smart Sensors for the Grand Challenges in Health and Environmental Applications*, Zhejiang University, Hangzhou, China (Friday 13 May 2016).
61. *Smart Sensors and Smart Homes*, Computer Science Department, University of Science and Technology Beijing (USTB), Beijing, China (Wednesday 23 March 2016).
62. *Smart Sensors, Smart Homes and Smart Cities*, Computer Science Department, Shanghai Polytechnic University, Shanghai, China (Sunday 20 March 2016).
63. *Smart Sensors and Smart Homes*, Beijing University of Posts and Telecommunications (BUPT) Research Institute, Yiwu, China (Monday 21 March 2016).
64. *Smart Sensors for the Grand Challenges in Environmental and Health Applications*, **IEEE Electron Device Society Distinguished Lecture,** Departament d'Enginyeria Electronica, Electria i Automatica, Universitat Rovira i Virgili, Tarragona, Spain (Tuesday 1 March 2016).
65. *Smart Sensors, Smart Homes and Smart Cities*, School of Computer Science and Engineering, Beihang University, Beijing, China (Thursday 31 December 2015).
66. *Smart Sensors, Smart Homes and Smart Cities*, Yiwu Institute - National Engineering Lab for Mobile Network Technologies, Beijing University of Posts and Telecommunications, Yiwu, China (Thursday 23 December 2015).
67. *Smart Sensors, Smart Homes and Smart Cities*, National Engineering Lab for Mobile Network Technologies, Beijing University of Posts and Telecommunications, Beijing, China (Tuesday 22 December 2015).
68. *Low-cost Sensors for Drinking Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture,** EE Department, IIT Bombay, India (Monday 14 December 2015).
69. *Biosensors – Life at the Intersection of Engineering and the Sciences*, **IEEE EDS Distinguished Lecture**, Séptimo Seminario de Electrónica y Diseño Avanzado, INAOE, Puebla, Mexico (23-25 September 2015).
70. *Flexible Electronics – Opportunities and Challenges*, **IEEE EDS Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 21 September 2015).
71. *Smart Home Technologies Towards Better Healthcare*, National Academy of Science and Technology, Philippines (Friday 21 August 2015).
72. *Smart Home Technologies Towards Elderly Ubiquitous Healthcare*, EEE Department, Sheffield University, Sheffield, UK (Monday 13 July 2015).
73. *Information and Communications Technologies Towards Better Healthcare in a Smart Home*, College of Computer Science, Zhejiang Normal University, Jinhua, China (Tuesday 23 June 2015).
74. *Flexible Electronics – Opportunities and Challenges*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Tuesday 23 June 2015).
75. *Integration Research and Facilities at McMaster University*, Wuhan National Lab for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China (Tuesday 16 June 2015).
76. *Smart Home Technologies Towards Better Healthcare*, Faculty of Microelectronics, XiDian University, Xi'an, China (Monday 1 June 2015).
77. *Flexible Electronics – Opportunities and Challenges*, Faculty of Microelectronics, XiDian University, Xi'an, China (Monday 1 June 2015).
78. *The Role of Computing and Engineering in U-Healthcare, Part* I – *Background and Sensors*, School of Computer Engineering and Science, Shanghai University, Shanghai, China (Friday 22 May 2015).
79. *The Role of Computing and Engineering in U-Healthcare, Part* 2 – *Systems and Computation*, School of Computer Engineering and Science, Shanghai University, Shanghai, China (Friday 22 May 2015).
80. *Smart Home Technologies Towards Better Healthcare*, **Mechanical Engineering Distinguished Lecture Series – Inaugural Lecture,** York University, York, Canada (Tuesday 17 March 2015).
81. *Flexible Electronics – Opportunities and Challenges*, **IEEE EDS Distinguished Lecture**, IEEE EDS Mini-Colloquium at 10th Spanish Conference on Electron Devices, Aranjuez, Spain (Wednesday 11 February 2015).
82. *Flexible Electronics – Opportunities and Challenges*, **IEEE EDS Distinguished Lecture**, Seoul EDS Chapter, Seoul National University, Seoul, South Korea (Tuesday 6 January 2015).
83. *Smart Home Technologies Towards Better Healthcare*, Electrical Engineering Department, Yonsei University, Seoul, South Korea (Tuesday 6 January 2015).
84. *Smart Home Technologies Towards Better Healthcare*, **IEEE Distinguished Lecture**, Engineering Faculty, De La Salle University, Manila, Philippines (Tuesday 16 December 2014).
85. *Unprecedented Vision: From Quantum Dot to Silicon Imagers*, **IAS Distinguished Lecture**, Institute for Advanced Study, Hong Kong University of Science and Technology, Hong Kong (Friday 5 December 2014).
86. *Biosensors – Enjoying Research at the Crossroads of Engineering and the Sciences*, **IEEE Distinguished Lecture**, ECE Department, Dalhousie University, Halifax, Nova Scotia (Tuesday 25 November 2014).

87. *Unprecedented Vision and Sensing with Engineered, Lo-Cost, Integrated Systems with Examples on Medical Applications*, College of Computer & Information Sciences, King Saud Univ, Riyadh, Saudi Arabia (Mon 17 Nov 2014).
88. *Nanobonding - A Key Technology for Emerging Applications in Health and Environment*, The Microelectronics Center, (TMEC), National Electronics and Computer Technology Center (NECTEC), Chacheongsao (Bangkok), Thailand (Tuesday 21 October 2014).
89. *Research Projects in Biomedical Engineering at McMaster University*, **IEEE Distinguished Lecture**, EE Department, Chulalongkorn University, Bangkok, Thailand (Monday 20 October 2014).
90. *Smart Home Technologies Towards Better Healthcare*, **IEEE Distinguished Lecture**, ECE Department, Dalhousie University, Halifax, Nova Scotia (Friday 26 September 2014).
91. *Smart Home Technologies Towards Better Healthcare*, St. Francis Xavier University, Antigonish, Nova Scotia (Monday 22 September 2014).
92. *Biosensors – Having Fun at the Intersection of Engineering and the Sciences*, College of Computer Science, Zhejiang Normal University, Jinhua, China (Saturday 16 August 2014).
93. *Microfabricated Sensors for Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture**, Dep of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Monday 11August 2014).
94. *Bioimagers – Life at the Intersection of Engineering and Sciences*, Institute of Optoelectronics, Shenzhen University, Shenzhen, China (Friday 8 August 2014).
95. *Smart Home Technologies Towards Better Healthcare*, Shenzhen Key Lab of Embedded System Design, College of Computer and Software, Shenzhen University, Shenzhen, China (Thursday 7 August 2014).
96. *Biosensors – Working at the Intersection of Engineering and the Sciences*, **IEEE SSSC, CAS/COM Joint Chapters Distinguished Lecture**, Univ of Macau State Key Laboratory of Analog and Mixed-Signal VLSI (Tue 5 August 2014).
97. *Biosensors – Working at the Intersection of Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, Tokyo Institute of Technology, Tokyo, Japan (Wednesday 16 July 2014).
98. *Nanobonding - A Key Enabling Technology Emerging Applications*, Nanoscience Technology Center, University of Central Florida, Orlando, Florida (Thursday 15May 2014).
99. *Biosensors – Having Fun with Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, University of Sao Paolo, Brazil (Friday 11 April 2014).
100. *Biosensors– Playing at the Crossroads of Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, Jiangnan University, Wuxi, China (Friday 11 April 2014).
101. *A Personal Journey "From South to North",* **IEEE McNaughton Lecture**, IEEE Canada Board of Directors Meeting (Delta Toronto Airport West), Mississauga, Ontario, Canada (Saturday 19 October 2013).
102. *Biosensors – Having Fun with Engineering and the Sciences,* **CEMSE (Computer, Electrical and Mathematical Sciences and Engineering) Dean's Distinguished Lecture Series (Inaugural Lecturer)**, King Abdullah University of Science and Technology (Tuesday 8 October 2013).
103. *Biosensors– Having Fun with Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture**, IEEE EDS Montreal Chapter, Concordia University, Montreal (Friday 20 September 2013).
104. *Biosensors– Having Fun with Engineering and the Sciences*, **IEEE Electron Device Society Distinguished Lecture and Keynote Presentation at Journee de L'Innovation ReSMiQ**, IEEE CAS Montreal Chapter and Ecole Polytechnique de Montreal, Montreal (Thursday 19 September 2013).
105. *Flexible Electronics – Opportunities and Challenges*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Friday 5 July 2013).
106. *Flexible Electronics – Opportunities and Challenges*, Electronic Materials and Devices Division, Brunel University, London, UK (Thursday 20 June 2013).
107. *Biosensors for Water Engineering– Working in the Crossroads of Engineering and the Sciences,* **Inaugural IAHR Distinguished Lecture**, Jointly organized by Department of Civil and Environmental Engineering, Department of Electronic & Computer Engineering, The International Association of Hydraulic Engineering & Research (IAHR) (Hong Kong Chapter), Hong Kong University of Science and Technology (Friday 31 May 2013).
108. *Biosensors – Playing at the Crossroads of Engineering and the Sciences*, **Winegard Lecture**, University of Guelph (Friday 10 May 2013)
109. *Information and Communications Technologies for Ubiquitous Healthcare*, ECP, King Abdul Aziz City for Science and technology (KACST), Riyadh, Saudi Arabia (Monday 14 January 2013).
110. *Photodetectors - From Quantum Dot to Silicon Imagers*, Prince Sultan Advanced Technology Research Institute (PSATRI), King Saud University, Riyadh, Saudi Arabia (Sunday 13 January 2013).
111. *Information and Communications Technologies for Ubiquitous Healthcare,* **IEEE Electron Device Society Distinguished Lecture**, IEEE Kolkata Photonics Chapter, Institute of Radio Physics and Electronics, University of

Calcutta, Kolkata, India (Thursday 20 December 2012).

112. *Integrated Biosensors for Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture**, IEEE Waterloo Chapter, Waterloo (Friday 30 November 2012).
113. *Integrated Biosensors for Water Quality Monitoring*, **IEEE Electron Device Society Distinguished Lecture**, IEEE Communications Society - Toronto Chapter, Ryerson University, Toronto (Friday 21 September 2012).
114. *Bioimagers – Life at the Intersection of Engineering and Sciences*, **IEEE Electron Device Society Distinguished Lecture**, King Abdalla University of Science and Technology- KAUST, Thuwal, Saudi Arabia (Saturday 1 Sep 2012).
115. *Noise Issues and Modeling in Silicon-based Devices*, **IEEE Electron Device Society Distinguished Lecture**, at Second International Training Course in Compact Modeling, Tarragona, Spain (Thursday 28 June 2012).
116. *Information and Communications Technologies for Ubiquitous-Healthcare*, UFR de Mathématiques et Informatique, Université Paris Descartes, Paris, France (Thursday 21 June 2012).
117. *Information and Communications Technologies for Ubiquitous-Healthcare*, College of Mathematics, Physics and Information Engineering, Zhejiang Normal University, Jinhua, China (Saturday 16 June 2012).
118. *Integrated Biosensors for Water Quality Monitoring*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Friday 15 June 2012).
119. *Information and Communications Technology for Ubiquitous-Healthcare*, Electronic Engineering, Universidad de Granada, Granada, Spain (Thursday 24 May 2012).
120. *Information and Communications Technology for Ubiquitous-Healthcare*, School of Computer Science, Simon Fraser University – Surrey Campus (Friday 11 May 2012).
121. *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).
122. *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).
123. *Engineered Biosensors for Environment and Health Applications*, Brockhouse Institute of Materials Research (**BIMR**), McMaster University (Monday 27 February 2012).
124. **Public Lecture" Smart** *Homes*" *and Better Healthcare*, The Hamilton Association for the Advancement of Literature, Science & Art (**HAALSA**), Hamilton (Saturday 4 February 2012).
125. *Biosensors, RFICs and ICT for U-Healthcare*, ITCE Division Workshop, POSTECH, Pohang, S. Korea (Tuesday 31 January 2012).
126. *Information and Communication Technologies in U-Healthcare Research*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Monday 11 July 2011).
127. *Integrated Low-cost, High Sensitivity Biosensors for Water Quality Monitoring*, School of Microelectronics, Xidian University, Xi'an, China (Friday 27 May 2011).
128. *Information and Communication Technologies in U-Healthcare Research*, School of Microelectronics, Xidian University, Xi'an, China (Friday 27 May 2011).
129. *Integrated Low-cost, High Sensitivity Biosensors for Water Quality Monitoring*, Department of Energy Sciences, Sungkyunkwan University, Suwon, S. Korea (Wednesday 25 May 2011).
130. *The Role of Computer Scientists in U-Healthcare Research*, Computer Science Department, POSTECH, Pohang, South Korea (Friday 15 April 2011).
131. *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).
132. *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).
133. *High-Sensitivity, Low-cost Biosensors*, Engineering Science and Mechanics Department, Pennsylvania State University, University Park, PA, USA (Wednesday 20 October 2010).
134. *Low-cost, High-Sensitivity "Water" Sensing Systems*, IBM T.J. Watson Research Center, Yorktown Heights, New York (Monday 27 September 2010).
135. *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).
136. *Convergence of U-Health and U-Environment: A Smart "Medical" Home*, Shanghai Jiao Tong University – Minhang Campus, Shanghai, China (Monday 9 August 2010).
137. *Low-cost, High Performance Bioimaging Systems*, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Thursday 5 August 2010).
138. *Convergence of U-Health and U-Environment: A Smart "Medical" Home*, Department of Information Science and

Electronic Engineering, Zhejiang University, Hangzhou, China (Wednesday 4 August 2010).

139. *Low-cost, High Performance Biomedical Photodetection Systems*, **IEEE Electron Device Society Distinguished Lecture**, Mexico City, Mexico (Thursday 22 April 2010).
140. *Convergence of U‐Health and U‐Environment*: *An Autonomic Smart Home*, **IEEE Electron Device Society Distinguished Lecture**, INAOE, Puebla, Mexico (Wednesday 21 April 2010).
141. *Low-cost, High-sensitivity Electrical and Optical Biosensing*, **IEEE Electron Device Society Distinguished Lecture**, INAOE, Puebla, Mexico (Tuesday 20 April 2010).
142. *Electrical and Optical Biosensing Systems for Disease Detection*, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China (Friday 16 April 2010).
143. *Compact Modeling of Organic Thin Film Transistors*, Electrical Engineering Department, Indian Institute of Technology, Delhi, India (Friday 18 December 2009).
144. *Electrical and Optical Biosensing Systems*, Applied Physics Department, Universidad de Granada, Granada, Spain (Friday 2 October 2009).
145. *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.
146. *Engineered Sensors for Novel Applications*, Institute of Microelectronics, Peking University, Beijing, China (Monday 10 August 2009).
147. *High-sensitivity, Low-cost Biosensors*, Institute of Electronics, Chinese Academy of Sciences, Beijing, China. (Monday 10 August 2009).
148. *Engineered Sensors for Novel Applications*, Shanghai Research Institute of Microelectronics (SHRIME), Peking University, Shanghai Branch, China (Friday 7 August 2009)
149. *Engineered Sensors for Novel Applications*, Institute of Microelectronics and Optoelectronics, Department of Information Science and Electronic Engineering, Zhejiang University, Hangzhou, China (Thursday 6 August 2009).
150. *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).
151. *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).
152. *Low-Voltage, Low-Power RF Integrated Circuits*, Electrical and Computer Engineering Department, POSTECH, Pohang, South Korea (Friday 8 May 2009).
153. *High-sensitivity, Low-cost Biosensors*, Electrical and Computer Engineering Department, University of British Columbia, Vancouver, BC (Friday 16 January 2009).
154. *High-sensitivity, Low-cost Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, Electronic and Information Engineering Department, Hong Kong Polytechnic University, Hong Kong (Wednesday 10 Dec. 2008).
155. *High-sensitivity, Low-cost Integrated Biosensors*, Electronic and Computer Engineering Department, Hong Kong University of Science and Technology, Hong Kong (Tuesday 9 December 2008).
156. *Low-Voltage, Low-Power Integrated RF Transceiver Circuits*, Electrical and Computer Engineering Department, University of Waterloo, Waterloo, ON Canada (Friday 5 December 2008).
157. *Engineered Sensors and Vision for Biological Applications*, Biology Department, McMaster University, Hamilton ON, Canada (Thursday 4 December 2008).
158. *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).
159. *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).
160. *Electronic and Optoelectronic Systems for Emerging Applications in Health and Environmental Sciences*, Institute for Telecommunications, Technische Universitaet Darmstadt, Darmstadt, Germany (Friday 4 July 2008).
161. *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).
162. *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).
163. *Electronic and Optoelectronic Systems for Emerging Applications*, Fachgebiet Hochfrequenztechnik - Photonics, Technische Universität Berlin, Berlin, Germany (Friday 16 May 2008).
164. *Low-voltage, Low-power Integrated RF Transceiver Circuits*, Ferdinand-Braun-Institut für Hoechstfrequenztechnik (FBH), Berlin, Germany (Friday 9 May 2008).

165. *Low-voltage, Low-power Integrated RF Transceiver Circuits*, Fakultät für Informatik, Elektrotechnik und Informationstechnik, Universität Stuttgart, Stuttgart, Germany (Tuesday 22 April 2008).
166. *Contacts Effects Polymeric Thin-film FETs*, **IEEE Electron Device Society Distinguished Lecture**, Electrical, Electronic & Automatic Engineering Department, University of Rovira i Virgili, Tarragona, Spain (Tue 15 April 2008).
167. *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).
168. *Highly Sensitive, Low-cost Integrated Biosensors*, ECE Department, University of Calgary, Calgary, Alberta (Monday 27 August 2007).
169. *Micro- and Nano-systems for Biomedical Applications*, The Department of Materials, Queen Mary, University of London, London (Friday 3 August 2007).
170. *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).
171. *Low-Power Integrated RF Transceiver Circuits for Short-Range Applications*, Microwave Engineering, Technische Universitaet Berlin, Berlin, Germany (Thursday 12 July2007).
172. *Highly Integrated Biosensors*, **IEEE Electron Device Society Distinguished Lecture**, IEEE EDS Shanghai Chapter, Shanghai, China (Friday 8 June 2007).
173. *Micro- and Nano-Systems Research and Integrated Biosensors*, Helix Micro Inc., Xiaoshan, Hangzhou, China (Thursday 7 June 2007).
174. *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).
175. *Micro- and Nano-Systems Research and Integrated Biosensors*, Physics Department, Nankai University, Tianjin, China (Monday 4 June 2007).
176. *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).
177. *RF Noise Modeling in MOSFETs Including Gate Current Effects*, RF CMOS Compact Modeling Group, IBM Essex Junction, Vermont, USA (Friday 16 February 2007).
178. *Low-Frequency Noise in Silicon Devices*, RF CMOS Compact Modeling Group, IBM Essex Junction, Vermont, USA (Friday 16 February 2007).
179. *Plastic Microelectronics with Organic or Polymeric Thin Film Transistors*, **IEEE Electron Device Society Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 4 September 2006).
180. *Highly Integrated Biosensors*, **The IEEE Electron Devices Society Distinguished Lecture**, CINVESTAV, Mexico City, Mexico (Monday 4 September 2006).
181. *Plastic Microelectronics*, **IEEE Electron Device Society Distinguished Lecture**, Universitat Rovira i Virgili, Tarragona, Spain (Thursday 27 July 2006).
182. *ICs for Low-Power Microsystems*, **The IEEE Electron Devices Society Distinguished Lecture**, University of the Balearic Islands, Mallorca, Spain (Monday 29 May 2006).
183. *Plastic Microelectronics*, The Max Planck Institute, Stuttgart, Germany (Wednesday 24 May 2006).
184. *Some Issues in MOSFET Noise Modeling and Characterization*, IEEE ICMTS 2006 Conference, RF Noise Panel Member and Presenter, Austin Texas (Tuesday 7 March 2006).
185. *Integrated Biosensors*, **The IEEE Electron Devices Society Distinguished Lecture**, University of Central Florida, Orlando, Florida (Saturday 25 February 2006).
186. *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).
187. *Reliability Effects of RF CMOS ICs*, Seoul National University, Korea (Wednesday 1 June 2005).
188. *Low-voltage, Low-power CMOS Integrated Circuits for Radio Frequency Applications*, Seoul National University, Korea (Friday 27 May 2005).
189. *Noise Issues in Deep Sub-micron Devices*, National Semiconductor Corp., Santa Clara, California (5 May 2005).
190. *Micro- and Nano-systems Components Research, A Brief Overview*, Agilent Technologies, Palo Alto, California (Monday 18 April 2005).
191. *High-Frequency Noise Modeling of MOSFETs for RF IC Applications*, RF Microdevices, Greensboro, North Carolina (Thursday 17 February 2005).
192. *Low-Frequency Noise in SiGeC-Based pMOSFETs*, RF Microdevices, Greensboro, North Carolina (17 Feb. 2005).
193. *HF Noise Modeling of MOSFETs for RF IC Applications*, RF Microdevices, San Jose, CA (10 Dec. 2004).

194. *Low-Power RFICs for Transceiver Applications*, **IEEE Electron Device Society Distinguished Lecture**, Eindhoven University of Technology, Eindhoven, Nederland (Friday 16 July 2004).
195. *Low-Power RFICs for Transceiver Applications*, **IEEE Electron Device Society Distinguished Lecture**, Universitat Rovira i Virgili, Tarragona, Spain (Monday 21 June 2004).
196. *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).
197. *Non-conventional FETS or Polymer FETs*, Istanbul Technical University, Turkey (Tuesday 22 July 2003).
198. *Low Frequency Noise in BJTs and FETs*, Istanbul Technical University, Turkey (Monday 21 July 2003).
199. *Electrical Characterization Techniques for Nanoscale Semiconductors and Semiconductor Dielectric Interfaces*, Istanbul Technical University, Turkey (Friday 18 July 2003).
200. *Some Electrical Characterization Techniques for Semiconductor-Silicon Dioxide Interface - A Review*, INAOE**,** Puebla, Mexico (Tuesday 24 July 2003).
201. *Low Power RFICs for Transceiver Applications*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Thursday 24 April 2003).
202. *Electrical Characteristics Polymer Field-Effect Transistors*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Wednesday 23 April 2003).
203. *Microelectronics and Opto-Electronics: A Review of Our Research Program*, Departament d'Enginyeria Electronica, Universitat Politecnica de Catalunya (Wednesday 23 April 2003).
204. *Une Réflection de Quelques Sujets Intéressants Pour La Recherche du Futur***,** CEM2, Université de Montpellier, France (Friday 20 December 2002).
205. *Radio Frequency Integrated Circuits –Mixers, Oscillators and Phase-Locked Loops*, Zarlink Corporation, Kanata Ontario (Thursday 5 December 2002)
206. *Radio Frequency Integrated – Mixers, Oscillators and Phase-Locked Loops*, Skyworks/Conexant Inc., Ottawa, Ontario (Thursday 5 December 2002).
207. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, RIM, Waterloo, Ontario (Wednesday 4 December 2002).
208. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, Gennum Corporation, Burlington, Ontario (Tuesday 3 December 2002).
209. *Radio Frequency Integrated Circuits – Mixers, Oscillators and Phase-Locked Loops*, Zarlink Corporation, Kanata Ontario (Thursday 19 September 2002).
210. *Radio Frequency Integrated Circuits for Transceiver Applications*, Skyworks/Conexant Inc., Ottawa, Ontario (Thursday 19 September 2002)
211. *Radio Frequency Integrated Circuits for Transceiver Applications*, Gennum Corporation, Burlington, Ontario (Tuesday 17 September 2002).
212. *Microelectronics and Some Interesting Applications*, CEM2, Université de Montpellier, France (Wed 26 June 2002).
213. *RF MOS Noise Modeling and Design of Low Noise RFICs*, Chalmers Univ., Gothenburg, Sweden, (21 March 2002).
214. *New Ways to Operate Transistors for Better Circuit Performance*, Gennum Corp., Burlington (Mon. 25 March 2002).
215. *Low-Noise, Low-Power Devices and Integrated Circuits*, RIM Corp., Waterloo Ontario (Wed. 13 March 2002).
216. *Microelectronic Device and Circuits Research*, Gennum Corporation, Burlington Ontario (Wed. 20 June 2001).
217. *Microelectronic Device and Circuits Research*, RIM Corporation, Waterloo Ontario (Thursday 31 May 2001)
218. *Ultra-Low-Voltage Low-Power Voltage Controlled Oscillators*, Institute of Radio Physics, Calcutta University, Calcutta, India (Wednesday 20 December 2000).
219. *Ultra-Low-Voltage Low-Power Voltage Controlled Oscillators*, Department of Electrical Engineering, Chulalongkorn University, Bangkok, Thailand (Tuesday 12 December 2000).
220. *RF Noise Modeling of MOSFETs*, ECE Dept., National Univ. of Singapore, Singapore (Thursday 30 Nov. 2000).
221. *RF Noise Modeling of MOSFETs*, EEE Dept., Nanyang Technological Univ., Singapore (Monday 27 Nov. 2000).
222. *RF Microelectronic Devices and Circuits*, Conexant Inc., Newport Beach, CA (Monday 2 October 2000).
223. *RF Noise Modeling of MOSFETs*, National Semiconductor Corp., Santa Clara, CA (Friday 29 September 2000).
224. *RF Microelectronic Devices and Circuits*, Electrical Engineering Department, Eindhoven University of Technology, Eindhoven, Nederland, (Friday 15 September 2000).
225. *A General Noise and S-Parameters De-Embedding Procedure for On-Wafer High-Frequency Noise Measurements of MOSFETs*, Mitel Corporation (Thursday 31 August 2000).
226. *Effects of DC Stresses on the RF Properties of NMOSFETs*, Mitel Corporation (Thursday 31 August 2000).
227. *Effects of Forward Biasing the Substrate on the Properties of CMOS Ring Oscillators*, Mitel Corporation (Thursday 31

August 2000).

228. *High Frequency Noise Modeling of MOSFETs,* Angstrom Laboratory, Uppsala University, (Friday 19 March 1999).
229. *Some Circuit Applications of Gate-Controlled Lateral PNP Bipolar Junction Transistors,* Mitel Corp. (18 Feb. 1999).
230. *High Frequency Noise Modeling of MOSFETs,* Mitel Corporation (Thursday 18 February 1999).
231. *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).
232. *Gate-Controlled Lateral BJTs - Characteristics, Modeling and Experiments,* Laboratoire des Physique des Composants a Semiconductors (LPCS), ENSERG, Grenoble, France (Thursday 9 July 1998).
233. *High Frequency Noise of MOSFETs - Modeling and Experiments,* Rockwell Semiconductor Systems, Newport Beach, California, (Friday 20 February 1998).
234. *BJT H.F. Noise Modeling and Experiments,* Lab. of ECTM, DIMES, Delft Univ. of Technology (7 July 1997).
235. *H.F. Noise Studies of MOSFETs,* Laboratory of ECTM, DIMES, Delft University of Technology (7 July 1997).
236. *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).
237. *DC Extraction of R_B and R_E of Polysilicon Emitter BJTs,* Laboratory of ECTM, DIMES, Delft University of Technology (30 June 1997).
238. *Gate-Controlled Lateral BJTs - Characteristics, Modeling and Experiments,* Laboratory of ECTM, DIMES, Delft University of Technology (25 June 1997).
239. *Narrow Width MOSFETs - Parameter Extraction and Physical and Circuit Modeling,* Laboratory of ECTM, DIMES, Delft University of Technology (25 June 1997).
240. *Features and Mechanisms of the Saturating Hot-Carrier Degradation in LDD MOSFETs,* Laboratory of ECTM, DIMES, Delft University of Technology (23 June 1997).
241. *Simple Method to Extract the Parasitic Resistances of MOSFETs Using a Single Device,* Laboratory of ECTM, DIMES, Delft University of Technology (23 June 1997).
242. *Low Frequency Noise in Polysilicon Resistors and MOSFETs,* Mitel Corporation, Kanata (29 April 1997).
243. *Parameter Extraction and Noise Modeling of BJTs at Microwave Frequencies*, INAOEP, Mexico (28 Feb. 1997).
244. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Xilinx Semiconductor, San Jose, California (6 December 1996).
245. *High Frequency Noise Modeling of Polysilicon Emitter Bipolar Junction Transistors*, Analog/Mixed Signal Process Development Group, National Semiconductor, Santa Clara, California (6 December 1996).
246. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Mitel Semiconductor, Ottawa (5 Nov. 1996).
247. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Research Institute for Materials Science, Budapest, Hungary (3 September 1996).
248. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications*, Integrated Transceivers Division, Philips Research, Eindhoven, Nederland (4 July 1996).
249. *Features and Mechanisms of the Saturating Hot-Carrier Degradation in LDD MOSFETs*, Analysis and Reliability Division, IMEC, Leuven, Belgium (3 July 1996).
250. *Gate-Controlled Lateral PNP BJT: Characteristics, Modeling and Circuit Applications,* Integrated RF technology Department, Rockwell Semiconductor Systems, Newport Beach, California (9 May 1996).
251. *Novel Applications of Lateral pnp Bipolar Transistors in a 0.8 μm BICMOS Technology*, Physics Department, National University of Singapore, Singapore (13 December 1995).
252. *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).
253. *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).
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OTHER INFORMATION

Memberships - Engineering, Science or Professional Organizations:

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