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Professor and Senior Canada Research Chair in Information Technology

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EDUCATION

Ph.D. (Electrical Engineering and Applied Physics), Case Western Reserve University, Cleveland, OH, U.S.A (July 1985).

M.S. (Electrical Engineering and Applied Physics), Case Western Reserve University, Cleveland, OH, U.S.A (May 1982).

B.Sc. (Physics/Mathematics), University of Guyana, Turkeyen, Guyana (June 1978).

ACADEMIC EXPERIENCE

Canada Research Chair	2001 - present	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Professor	1999 - present	Elect. & Computer Engineering	McMaster University, Hamilton, Ontario.
Dist. Visiting Prof.	2008-2013	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

Doctor of Engineering - Honoris Causa	University of Waterloo (18 June 2011).
Fellow (Foreign)	INAE, The Indian National Academy of Engineering (September 2007).
Fellow	CAE, The Canadian Academy of Engineering (April 2007).
Fellow	RSC, The Royal Society of Canada - The Academies of Arts, Humanities and Sciences of Canada (June 2006).
Fellow	APS, The American Physical Society (November 2008).
Fellow	AAAS, The American Association for the Advancement of Science (Oct. 2005).
Fellow	ECS, The Electrochemical Society (May 2004).
Fellow	EIC, The Engineering Institute of Canada (December 2003).
Fellow	IEEE, The Institute of Electrical and Electronic Engineers (November 2002).
Honorary Member (highest honor)	WIF, The World Innovation Foundation (May 2006).
Royal Society of Canada Keynote Lecture	Canadian Congress of Applied Mechanics – CANCAM (6 June 2011).

AWARDS/HONORS (continued)

Càtedres d'Excel·lència	Universitat Rovira I Virgili (URV), Tarragona, Spain (Jan-March 2011).
Fessenden Silver Medal	IEEE Canada (9 May 2011).
Electronics and Photonics Division Award	Electrochemical Society (1 May 2011).
Best Poster Award - Autonomics	Third Int. Symposium on IT Convergence Engineering (14-15 July 2011).
Best Poster Award – Nanosensors	Third Int. Symposium on IT Convergence Engineering (14-15 July 2011).
Best Poster Award - Autonomics	Second Int. Symposium on IT Convergence Engineering (19-20 Aug. 2010).
Science and Technology Award	New Pioneers Awards, Toronto, Canada (February 2010).
Eadie Medal	RSC, The Royal Society of Canada (July 2008).
Yu-gang Bao Chair Professorship	Zhejiang University, Zhejiang, China (August 2009 – for 3years).
Technology Achievement Award	ICCC – Indo-Canada Chamber of Commerce (June 2009).
Guyana Award – Academic Excellence	Guyana Awards Council - Canada (May 2008).
Humboldt Research Award	Alexander von Humboldt Foundation (April 2006).
IBM Faculty Award	IBM Corporation, USA (2006).
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 (May 2005).
Best Paper Award	The Institution of Engineering Technology (formerly IEE) (2004).
Best Student Paper Award	IEEE Canadian Conference on Elec. & Comp. Engineering (2004).
Best Student Paper Award	SPIE Conference on Noise in Devices and Circuits (2003).
Best Invited Paper Award	IEEE Custom Integrated Circuits Conference (2002).
Distinguished Lecturer	IEEE - Electron Device Society (2002 - present).
Thomas D. Callinan Award	Electrochemical Society – Dielectric Science & Technology Div. (2002).
Distinguished Researcher Award	Province of Ontario (July 2001).
Canada Research Chair	Government of Canada (2001 -).
IEEE Outstanding Branch Counselor and Advisor Award for Canada - Region 7	(April 1994).
IEEE Exemplary Student Branch Award for SFU (Deen - Counselor and Kwan - Student Chair) - Region 7	(1995).
Reward and Recognition Award	Silicon Technology Division (P810), Northern Telecom, Ottawa (1993).
NSERC Senior Industrial Fellow	Device Technology (P813), Northern Telecom, Ottawa (1993).
Listed in	Canadian Who's Who (2007).
Listed in	Academic Keys Who's Who in Higher Education Engineering (2006)
Listed in	American Men & Women of Science (from 17th Edition, February 1989).
Member	Eta Kappa Nu – Electrical Engineering Honor Society (1985)
American Vacuum Society Scholar	Elect. Eng. & App. Phys. Department, CWRU (1983-1984).
Fullbright-Laspau Scholar	Elect. Eng. & App. Phys. Department, CWRU (1980-1982).
Irving Adler's Prize	Best graduating mathematics student at the University of Guyana (1978).
Chancellor's Medal	Second best graduating student of the University of Guyana (1978).

EDITORIAL RESPONSIBILITIES

- Associate Editor, *IEEE/OSA Journal of Display Technology* (January 2011 – present)
- Member, Editorial Board, *Nanoscience & Nanotechnology-ASIA* (January 2011 – present).
- Editor (Devices), *Journal of Semiconductor Technology and Science* (January 2010 – present).
- Member, Editorial Board, *Nanotechnology* (January 2010 – present).
- Member, Editorial Board, *Research Letters in Electronics* (January 2009 – present).
- Member, Editorial Board, *The Journal of Nanoelectronics and Optoelectronics* (March 2007 – present).

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

RESEARCH INTERESTS

Microelectronics/Nanoelectronics, Optoelectronics - Biosensors, Imaging Systems, Micro- and Nano-systems, Device Physics and Modeling, Radio Frequency Integrated Circuits, Plastic Microelectronics, Device Characterization.

CAREER PUBLICATION RECORD

Book, Refereed Book Chapters or Edited Books/Conference Proceedings: 39

- Authored/Edited Books or Conference Proceedings 21
- Invited Book Chapters 16
- Contributed Book Chapters 2

Patents: 6

Refereed Journal Publications: 245

- Invited Journal Papers 26
- Journal Papers 219

Refereed Conference Publications: 208

- Plenary, Keynote or Invited Refereed Conference Publications 65
- Contributed Conference Papers 143

Conference Publications (Only Abstracts and Extended Abstracts): 153

- Plenary, Keynote or Invited Conference Abstracts 58
- Contributed Conference Abstracts 95

Commissioned Technical Reports: 59

PROFESSIONAL CITIZENRY/SERVICE

- Offices Held in Professional Societies 37
- Conferences – Organizer, Chair, Program Committee Member, etc. 118
- Session Chair/Co-Chair at Conferences/Symposia 104
- Reviewer for 45 journals
- Reviewing for 78 conferences/symposia
- Invited Seminars - University, Industry and Research Organizations 168
- Short Courses - Industry, University, Conference 9

PERSONNEL TRAINING (Career) 172

• Visiting Professors, Post-Doctoral Fellows and Research Associates	38
• Ph.D. Students	33
• M. Eng and M.A.Sc. Students	52
• B.A.Sc. Students	49

RESEARCH GRANTS IN RECENT PAST (2001 to present) **\$75,365,501**

• Sole Investigator or Principal Investigator (PI) from 2001 to present	\$20,569,894
• Co-investigator from 2001 to present	\$54,795,607



SHORT BIOGRAPHY: M. Jamal Deen was born in Georgetown, Guyana, South America. He completed a B.Sc. degree in Physics and Mathematics at the University of Guyana (1978), a M.S. degree (1982) and a Ph.D. degree (1985) in Electrical Engineering and Applied Physics at Case Western Reserve University (CWRU), Cleveland, Ohio, U.S.A. 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.

From 1978-1980, Dr. Deen was an Instructor of Physics at the University of Guyana, and from 1980 to 1983, he was a Research Assistant at Case Western Reserve University. He was a Research Engineer (1983-1985) and then an Assistant Professor (1985 -1986) at Lehigh University, Bethlehem, Pennsylvania. In 1986, he joined the School of Engineering Science, Simon Fraser University, Vancouver, British Columbia, as an Assistant Professor, and from 1993 to 2002, he was a Full Professor. From summer 1999, he assumed his current position as Professor of Electrical and Computer Engineering, McMaster University, Hamilton, Ontario. In July 2001, he was awarded a Senior Canada Research Chair in Information Technology.

Dr. Deen was a Visiting Scientist at the Herzberg Institute of Astrophysics, National Research Council, Ottawa in summer 1986, and he spent his sabbatical leave as a Visiting Scientist at Northern Telecom, Ottawa in 1992-1993. He was a Visiting Professor in the Faculty of Electrical Engineering, Delft University of Technology, in summer 1997 and a CNRS Directeur de Recherche at the Physics of Semiconductor Devices Laboratory, Grenoble, France in summer 1998 and at the Université de Montpellier II, France in 2002-2003, and an Invited Professor at the Technische Universität Berlin, Fachgebiet Mikrowellentechnik from January to July 2007.

Dr. Deen has published extensively in microelectronics/nanoelectronics and optoelectronics. His research record includes 452 peer-reviewed articles (about 20% are invited), 1 book, 16 invited book chapters, and 6 patents which have all been used in industry. He has also written one book, edited two research monographs and 14 conference proceedings. And he has given one hundred and nineteen plenary/keynote/ invited conference presentations. For his research work, he has also won nine best paper awards. He has also served as a consultant to the semiconductor industry in Canada, the USA and Japan. His current research interests are in microelectronics/nanoelectronics and opto-electronics.

Dr. Deen is a founding Executive Editor of Fluctuations and Noise Letters; Associate Editor, IEEE/OSA Journal of Display Technology and a Member of the Editorial Boards of the following journals – Nanotechnology; Nanoscience & Nanotechnology-ASIA; The Journal of Nanoelectronics and Optoelectronics; the International Journal of High Speed Electronics and Systems; Journal of Semiconductor Technology and Science; the Microelectronics Journal; the Open Journal of Applied Physics; and Research Letters in Electronics. He was also the Solid-State Editor of IEEE Transactions on Electron Devices (2001-2010) and the Regional Editor for Canada and Central USA of the IEEE Electron Devices Society Newsletter (2004-2010). Dr. Deen has served as the technical chair, general chair, principal organizer, member of the technical committee or member of the international steering committee of numerous conferences in his fields of research interest.

Dr. Deen is a member of Eta Kappa Nu, the Electrical Engineering honor society. As an undergraduate student at the University of Guyana, Dr. Deen won the **Chancellor's medal** as the second best graduating student and the **Irving Adler prize** as the best mathematics student (1978). As a graduate student, he was a **Fulbright-Laspau Scholar** from 1980 to 1982 and an **American Vacuum Society Scholar** from 1983 to 1984. He was an **NSERC Senior Industrial Fellow** in 1993 and is a **Distinguished Lecturer** of the IEEE Electron Device Society since 2001. His awards and honors include the 2002 **Thomas D. Callinan Award** and the 2011 **Electronics and Photonics Division** from the Electrochemical Society; the **Distinguished Researcher Award**, Province of Ontario in 2001; a **Humboldt Research Award** from the Alexander von Humboldt Foundation in 2006; an **IBM Faculty Award** in 2006; the **Eadie Medal** from the Royal Society of Canada in 2008; the 2011 **Fessenden Medal** from IEEE Canada; and the degree **Doctor of Engineering - honoris causa** from University of Waterloo in 2011.

Dr. Deen has been elected a Fellow of The Royal Society of Canada (**FRSC**) - The Academies of Arts, Humanities and Sciences of Canada, a Fellow of the Canadian Academy of Engineering (**FCAE**), a Foreign Fellow of the Indian National Academy of Engineering (**FINAE-Foreign**), a Fellow of The Institute of Electrical and Electronic Engineers (**FIEEE**), a Fellow of The American Physical Society (**FAPS**), a Fellow of The Electrochemical Society (**FECS**), a Fellow of The American Association for the Advancement of Science (**FAAAS**), a Fellow of The Engineering Institute of Canada (**FEIC**) and an Honorary Member of the World Innovation Foundation (**HonMWIF**) – the foundation's highest honor.