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## News Release

### **Forty-eight new Fellows inducted into the Canadian Academy of Engineering**

**Ottawa – (June 3, 2010)** – President Axel Meisen inducted 48 new Fellows into the Canadian Academy of Engineering on June 3, 2010. The ceremony took place in Toronto, in conjunction with the Academy's 2010 Annual General Meeting. Dr. Meisen commented: "The Academy welcomes the new Fellows, engineers of outstanding calibre, and looks forward to their participation in the Academy's activities. While the Academy's recent work has placed considerable emphasis on the subject of energy, its interests are wide ranging. The new Fellows will help shape the Academy's future directions and contribute to the sustainable development of Canadian society."

The Canadian Academy of Engineering is the national institution through which Canada's most distinguished and experienced engineers provide strategic advice on matters of critical importance to Canada. The Academy is an independent, self-governing and non-profit organization established in 1987. Members of the Academy are nominated and elected by their peers to honorary Fellowships, in view of their distinguished achievements and career-long service to the engineering profession. Fellows of the Academy are committed to ensuring that Canada's engineering expertise is applied to the benefit of all Canadians.

The Canadian Academy of Engineering works in close cooperation with other senior academies in Canada and internationally. It is a founding member of the *Council of Canadian Academies*, along with the *Royal Society of Canada* and the *Canadian Academy of Health Sciences*. The Academy works in close collaboration with the other members of the *Canadian Engineering Leadership Forum* which brings together representatives from *Engineers Canada*, the *Engineering Institute of Canada*, the *Association of Consulting Engineering Companies - Canada*, the *National Council of Deans of Engineering*, and the *Canadian Federation of Engineering Students*, all working together to ensure a safer, cleaner, healthier and more competitive Canada. The Academy is also a member of the *International Council of Academies of Engineering and Technological Sciences*, which includes some 26 similar national bodies around the world.

Citations are attached for each of the new inductees, along with an identification of some of the major societies and associations in which each new Fellow has indicated participation.

**For additional information or interviews, please contact:**

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## THE CANADIAN ACADEMY OF ENGINEERING

The Canadian Academy of Engineering is the national institution through which Canada's most distinguished and experienced engineers provide strategic advice on matters of critical importance to Canada.

The Academy is an independent, self-governing and non-profit organization established in 1987. Members of the Academy are nominated and elected by their peers to honorary Fellowships, in view of their distinguished achievements and career-long service to the engineering profession. There are at present some 307 active members, 124 emeritus members and 3 Honorary members. Fellows of the Academy are committed to ensuring that Canada's engineering expertise is applied to the benefit of all Canadians.

The Canadian Academy of Engineering works in close cooperation with other senior academies in Canada and internationally. It is a founding member of the *Council of Canadian Academies*, along with the *Royal Society of Canada* and the *Canadian Academy of Health Sciences*. The Academy works in close collaboration with the other members of the *Canadian Engineering Leadership Forum* which brings together representatives from *Engineers Canada*, the *Engineering Institute of Canada*, the *Association of Canadian Engineering Companies*, the *National Council of Deans of Engineering*, and the *Canadian Federation of Engineering Students*, all working together to ensure a safer, cleaner, healthier and more competitive Canada. The Academy is also a member of the *International Council of Academies of Engineering and Technological Sciences*, which includes some 26 similar national bodies around the world.

The Mission of the Canadian Academy of Engineering is to provide leadership in engineering advice and to enhance, through the application and adaption of scientific and engineering principles, the promotion of engineering, the well-being of Canadians and the creation of wealth in Canada.

Specifically, the Academy:

- speaks out on issues of importance to Canada and abroad to highlight emerging issues in which engineering has a role and to comment on their importance and their implications, and more generally to provide an understanding of the need for engineering excellence in professional practice, research, development, innovation and education in Canada's economy.

- provides advice in the appropriate form to government, industry, academia and Canadians at large on specific issues where engineering considerations play a role,
- promotes recognition of engineering excellence by electing Fellows of the Academy from among Canada's most experienced and outstanding engineers, and thus highlighting the contributions of engineers to the well-being of Canadians and the economic development of Canada.
- participates appropriately, actively, and effectively with like-minded national and international organizations in developing a common voice on issues important to Canada and the world.

June 2010



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**CITATIONS 2010**

**Abd El Halim Omar Abd El Halim**



A. O. Abd El Halim (Halim) has achieved national and international recognition for his inventions in asphalt pavement construction which have had a profound impact on productivity, better performance and better economy. He has combined technical and academic leadership in not only pavement engineering but also unique applications of geosynthetics in reducing effects of blast loads on structures and in transportation of hazardous materials. His professional and societal contributions are many and varied, he has guided many students, he has been a prolific contributor to the technical literature and his achievements have been recognized by numerous awards and honours.

PEO, CSCE, TRB

**Stavros A. Argyropoulos**



Using novel experimental techniques coupled with mathematical modeling, Professor Argyropoulos has established a comprehensive knowledge base pertaining to the thermo-chemical principles that govern the assimilation and recovery of various solid additions in different molten metals. In this context, exothermic interfacial reactions were studied in great detail. Recognized by international honours and awards, this distinguished researcher has made substantial and sustained contributions to the Engineering Profession through his research achievements, his mentoring of young engineers, his communication of new knowledge to industry and his numerous activities within technical societies.

PEO, CIM, AIST, AIME, TMS

**Yves Beauchamp**



Depuis sa nomination au poste de directeur général, Yves Beauchamp a apporté une contribution sans précédent au développement de l'ÉTS qui se classe maintenant parmi les trois premières écoles ou facultés de génie au Canada. Près de 200 millions de dollars ont été investis dans la construction et la réfection d'installations qui soutiennent la croissance rapide des activités de recherche et d'enseignement, le rapprochement avec l'industrie, ainsi que l'amélioration du milieu de vie des étudiants. Visionnaire et rassembleur, il pilote présentement la création d'un « Quartier de l'innovation », un vaste projet de développement technologique et économique de Montréal.

*Since his appointment as Director, Yves Beauchamp has made an unprecedented contribution to the development of the ÉTS, which now ranks among the three best engineering schools or faculties in Canada. Nearly 200 million dollars have been invested in the building and renovation of installations that support the rapid growth of research and teaching activities, the establishment of closer ties with industry and the betterment of student living quarters. A visionary and leader, Yves currently directs the establishment of an "Innovation Neighborhood", a large Montreal technological and economic development project.*

OIQ, Alpha Pi Mu, Sigma XI, AQHSST, AQME, AIIE, HFS, HFAC

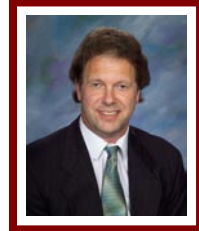
### **Gouri S. Bhuyan**



For significant contributions to the engineering profession in Canada and abroad through his technical contributions and leadership roles in enabling the development of ocean energy sector in Canada and around the world and in the development and application of structural integrity & reliability based methods for managing electrical transmission and distribution assets.

APEGBC, ASME, CSC/IECTC114, PMAPS, IPCC, IEA

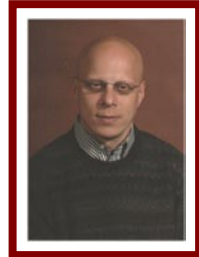
### **Jens Bornemann**



Jens Bornemann is an internationally recognized expert in the areas of microwave circuits, filters and antennas. He has more than 25 years of experience and a proven track record of extensive publications and industry interactions. His most significant contributions are innovations in numerical modeling and computer-aided design of waveguide components and planar structures. Especially his pioneering work in modal matching algorithms has been widely acclaimed by university researchers and industry, for yielding highly accurate, fast and powerful numerical tools for real-life design applications. He is a Fellow of the IEEE and the Chair of the Department of Electrical and Computer Engineering at the University of Victoria.

APEGBC, IEEE, EuMA

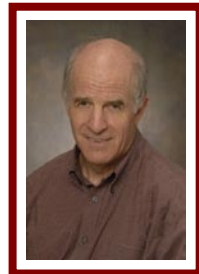
### **Azzedine Boukerche**



Azzedine Boukerche is a Professor and Canada Research Chair at the University of Ottawa. He earned an international reputation in the field of wireless networking, distributed and mobile computing areas, and for fundamental research contributions to performance evaluation of dynamic load balancing and data distribution management for large scale distributed simulation systems & design of novel localization and coverage protocols for wireless and mobile ad hoc and sensor networks. His research is widely recognized by his peers, and the results have been published in highly regarded IEE and ACM journals and conferences. He is highly respected within the scientific community and has been actively leading several IEEE/ACM conferences and serves as Associate Editor of several IEEE Trans. journals.

IEEE

### **J. Douglas Boyd**



With over forty years experience in university, government and private industry, Professor Boyd is internationally recognized for applying microstructural design to the development of new steel processing technologies and improved product properties. With participation by industry, his approach has involved experimental simulation of thermomechanical processes coupled with characterization of microstructures using advanced electron optic techniques. Professor Boyd has also compiled a splendid record of contributions through service with government agencies, accreditation boards and as Editor-in-Chief for the Canadian Metallurgical Quarterly. An International Symposium with invited papers which reflected Professor Boyd's distinguished career was held in his honour in 2005.

PEO, ASMI, TMS, CIM

### **Zhizhang (David) Chen**



Dr. Chen is recognized for his exceptional contributions as a scholar and educator in computational electromagnetics and RF/microwave engineering. Dr. Chen has published extensively and has been a Killam Chair in Wireless Technology. His work on time-domain modeling, simulation techniques and ultra-wide-band applications of electromagnetic fields has enabled seminal advances in the area; especially his unconditionally stable modelling schemes have been extensively referenced and commercialized. He is the recipient of an Engineering Award and several other awards recognizing 20 years of distinguished contributions to teaching and research.

Engineers Nova Scotia, IEEE

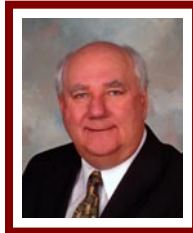
### **Tom Closson**



Currently the President and CEO of the Ontario Hospital Association, Tom Closson has had a highly distinguished career as a senior executive in multiple health-care organizations, a government executive and a health-care management consultant. He has served as CEO of several major Canadian health-care organizations, and has consistently improved patient care and accountability. A graduate of the University of Toronto's Industrial Engineering program, Mr. Closson has pioneered the use of industrial engineering practises in health-care using process improvement principles to ensure our hospitals and community health-care organizations run more efficiently and effectively.

PEO, CCHSE

### **Darrel John Danyluk**



As a leader of industry, academe and the engineering profession, Mr. Danyluk has been a champion of engineering in Canada and abroad. As Chief Operating Officer and Chairman of Reid Crowther, he oversaw the growth and international expansion of the company resulting in Canadian engineering expertise being applied to great benefit in Europe, China and the developing world. He has served the profession with distinction, having held several senior appointments including president of Engineers Canada, APEGGA and the Consulting Engineers of Alberta, as well as vice-president of the World Federation of Engineering Organizations. In each of these appointments his visionary insights and energy generated and innovative paths that have brought great benefit to the profession.

APEGGA, EIC, CSCE, Engineers Canada, Pan American Academy of Engineering

### **Nedjib (Ned) Djilali**



Dr. Djilali has made outstanding contributions to engineering through the development of technologies, the leadership of engineering knowledge-based organizations, and the training of engineers and engineering professors. He has a track record of research in energy systems that is exemplary in all respects including publications, citations, technology transfer, funding and training. Dr. Djilali has also supported engineering initiatives and informed energy policy through service on numerous national and international committees. His leadership roles in the Computational Fluid Dynamics Society of Canada, the Institute for Integrated Energy Systems and the Pacific Institute for Climate Solutions have led to major advancements.

APEGBC, CSME, ASME, IAHE, ECS

### **Guy Albert Dumont**



Guy Dumont has made outstanding contributions to the field of adaptive control with applications to the process industries and the development of the theory behind the BrainWave controller, the most successful adaptive controller commercially available. For the last two decades, he has also performed pioneering work in the theory, design and application of cross-directional control on paper machines, leading to successful worldwide commercialization.

APEGBC, IEEE, ISA, PAPTAC, TAPPI

### **Bruce Francis**



Professor Bruce Francis of the University of Toronto is a highly respected researcher in the area of control theory, having authored several influential textbooks on the subject as well as award-winning and highly cited articles. He is one of only 15 engineering researchers in Canada to be listed on ISI's 'Highly Cited' website. Professor Francis has developed ground-breaking algorithms for control design, which are widely used in commercial software, and he has supervised the design of control systems for space applications and autonomous convoys of military vehicles. Professor Francis is a dedicated educator; many of his graduate students have gone on to become professors themselves.

IEEE

### **Frank Frantisak**



Dr. Frantisak began his professional career in 1957 as a process engineer and later as a manager of the chemical engineering department at the Research Institute of Inorganic Chemistry in Usti, Czechoslovakia. Following the Soviet invasion of that country in 1968, he and his family emigrated to Canada where he continued a highly successful career as an advocate for corporate responsibility for sustainability and environmental protection. At the Ontario Ministry of the Environment he developed the Air Pollution Index and Hazardous Substances Programs, the first of their kind in Canada. Joining Noranda in 1984, he became Senior VP Environment. His leadership resulted in major reductions in energy use and air and water emissions. He has received numerous awards, including the Order of Canada.

### **Andrew Goldenberg**



Dr. Goldenberg is an outstanding Canadian engineer with a world-wide reputation who has contributed significantly to the field of robotics by sustaining a long and leading academic career in parallel with the founding and leading innovative and commercially successful robotics and automation commercial enterprises. He has been extremely productive in every aspect of his academic work, and has undertaken great challenges in his business career. The two activities give him a unique perspective of the engineering profession, also inspiring many engineers. He has succeeded to make a direct connection between the research and practice of engineering, and he continuously provides evidence that research topics based on practical requirements and experience can be challenging, progressive and lucrative. The concurrence of the academic and commercial careers is an inspiration and an example worth following.

PEO, ASME, IEEE, CIE, SME

### Sheldon Green



Dr. Green is a distinguished scholar and educator who has carried out pioneering research on the fluid mechanics of papermachines, on the spraying on non-Newtonian fluids, and on the aerodynamics of wing propeller tip vortices. The research has spanned the spectrum from fundamental to applied. Most has been industrially supported. He has authored or co-authored over 100 peer-reviewed articles in these areas, mentored 35 Masters and Ph.D. students, and has edited the major text “Tip Vortices”. Dr. Green’s excellence in teaching has been recognized through receipt of four major teaching awards, including national and international awards.

APEGBC, CSME, ASME

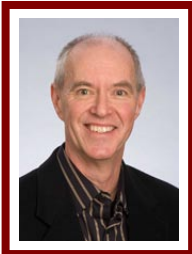
### Ling Guan



Dr. Ling Guan is a Professor of Electrical Engineering at Ryerson University. He holds a Tier I Canada Research Chair in Multimedia and Computer Technology. Professor Guan is highly respected by his peers for his pioneering work on the paradigm of “elemental concept”, and “hierarchical processing architecture” which laid the foundational framework for diversified research frontiers in information engineering and technology, firmly establishing him a world leader in adaptive image processing, human computer interaction, and video transmission over distributed communications systems. Professor Guan has been awarded numerous prestigious awards and honours for his outstanding achievements, including FIEEE, FEIC and 2005 Best Paper Award of IEEE Trans on Circ. and Sys. for Video Technology.

IEEE, EIC

### Eric R. Hall



A Professor of Civil Engineering at UBC and former Head of the Department, Dr. Eric Hall is a world authority in the areas of pulp and paper treatment, anaerobic treatment technology and membrane treatment systems. His research spans the theoretical aspects of novel biological treatment technologies and their application to real-world facilities. He is a respected consultant sought out by stakeholders in the pulp and paper industry, and has contributed significantly to the engineering profession, serving such organizations as the International Water Association and the Water Environment Federation, for which he received its Willem Rudolfs Medal for outstanding contribution to industrial waste control.

APEGBC

### Andrew Hrymak



Andy Hrymak has made significant contributions to the literature for large scale computation of fluid flows with free and moving boundary problems, complex rheology, liquid coating technology, mixing and polymer processing. He has also made great contributions to the Canadian engineering profession by serving as Director of an interdisciplinary manufacturing research centre and as the founding Director of the Walter G. Booth School of Engineering Practice, an interdisciplinary graduate school for professional engineering master’s degrees. He has held leadership positions in professional organizations, chaired major international conferences, served as Department Chair and Dean of Engineering, and is an editor for two journals. He has been recognized through awards by the Chemical Institute of Canada and the American Institute of Chemical Engineers.

PEO, CSCChE, AIChE, Polymer Processing Society, SPE, The Society of Rheology, ISCST

### **Jin Jiang**



Dr. Jiang is an internationally recognized expert on fault-tolerant control, and instrumentation & control for nuclear power plants. He has made significant contributions to engineering in many different ways. His research has resulted in a clear understanding between available redundancies and degree of fault-tolerance. His pioneering work in this area has led to improvements in desirable control system architecture and implementation practice in nuclear power plants. Dr. Jiang has also contributed extensively in the development of several IEC and ISA standards and has been named as an IAEA technical expert to develop technical guidebooks for nuclear industries. He is an excellent teacher and a mentor to his students. He has received several teaching and research excellence awards in his 21 years career.

PEO, IET, IEEE, ISA

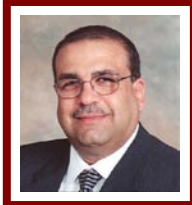
### **Brenda Gail Kenny**



Dr. Brenda Kenny has distinguished herself as a thought leader and practitioner in the sustainable management of pipeline systems across Canada. As a regulator at the National Energy Board for many years she led the move to standards-based regulation and new approaches to risk assessment. As the CEO of the Canadian Energy Pipeline Association, she has made significant contributions to pipeline and energy policy in Canada. Brenda is a pioneer for women in this technical and political field of pipelining. Her research work into environmental sustainability and her contribution to organizations committed to sustainability are further examples of her leadership.

APEGGA, IWF

### **Raafat R. Mansour**



Throughout his industrial and academic career, Dr. Mansour has been a pioneer in employing emerging materials and technologies such as high temperature superconductor and micro-electro-mechanical system (MEMS) to build novel devices with unprecedented performance. He holds 31 US and Canadian patents (25 awarded and 6 pending), has more than 200 publications, is a co-author of Wiley book, and has contributed four chapters to other two books. He is the Founding Director of the Center for Integrated RF Engineering at the University of Waterloo. Dr. Mansour is a Fellow of the IEEE and is a Fellow of the Engineering Institute of Canada (EIC). He has received several Best Paper Awards and outstanding research performance awards from both COM DEV and the University of Waterloo.

PEO, IEEE, EIC

### **José R. Martí**



Dr. Martí has advanced the state of the art in modelling and simulation of power system transients. His contributions include the JMarti transmission line model and the CDA numerical integration technique. These contributions have been adopted in major power system and power electronics transients simulation software. He has also pioneered the field of real-time online simulation of power systems using readily available personal computer clusters. He is now extending his power systems experience to coordinate in real time the response of multiple critical infrastructure systems during large disaster events with the objective of minimizing loss of lives and property.

APEGBC, IEEE

### Farid N. Najm



Professor Farid Najm is Chair of the Department of Electrical and Computer Engineering at the University of Toronto. Professor Najm's research contribution is in the area of computer-aided design (CAD) for integrated circuits, with emphasis on circuit level issues related to power dissipation, timing, and reliability. His ground-breaking work is focused on managing the design challenges related to power dissipation and circuit timing. Professor Najm has authored over 130 journal and conference publications and contributed to 4 books. Much of his research is considered seminal and has been widely referenced in academia and widely used in industry. He is an IEEE Fellow.

PEO, IEEE

### Yonghao Ni



Dr. Ni has made major contributions to pulp and paper science and engineering. He has demonstrated an outstanding capability in identifying industry problems, and then applying chemistry and chemical engineering principles to find innovative solutions to these problems. His contributions are not only in advancing the knowledge in pulp and paper science and engineering, but also in transferring new technologies and novel process concepts to mill practices. He has been a key player in the development of many innovative pulp and paper processes/products in collaboration with industry, many of which have been commercialized. Dr. Ni has received many awards from Canada, the US, China, and Australia, including 2 of the 3 major awards sponsored by the Canadian Society for Chemical Engineering.

APEGNB

### Michel Perrier



Par sa contribution exceptionnelle à la pratique et à la théorie du génie des systèmes, le professeur Perrier a permis de repousser les limites de l'application de l'automatique aux procédés chimiques et biochimiques, aussi bien à l'échelle laboratoire qu'à l'échelle industrielle. Il a aussi contribué de façon significative à l'enseignement du génie afin de faciliter l'intégration des connaissances. Ses idées sur l'évaluation de l'enseignement ont conduit à une politique institutionnelle qui est maintenant citée en exemple à l'extérieur de nos frontières.

*Through his outstanding contribution to the practice and theory of systems engineering, Professor Perrier has made it possible to push the limits of automatic control applications to chemical and biochemical processes at both laboratory and industrial scales. He also significantly contributed to the ways of teaching engineering to make knowledge integration easier. His ideas on teaching assessment have resulted in the creation of an institutional policy which is now being quoted as an example beyond our borders.*

OIQ, CSCChE, AIChE, ASEE

### Dorina C. Petriu



Dorina C. Petriu has made outstanding contributions to software engineering research and engineering education. Her work on software performance engineering is of great importance for computer, telecommunication and other IT-based industries using mission critical real-time and embedded systems. She is recognized for pioneering contributions in bridging the gap between performance analysis and model-driven software development based on the Unified Modeling Language, a known standard for software specification and design. As Professor and Director of the School of Information Technology at Carleton University, she is a mentor and role model for many generations of engineering students and young professors.

PEO, EIC, IEEE, ACM

### **Alan Plumtree**



Dr. Alan Plumtree holds the prestigious title of Distinguished Professor Emeritus at the University of Waterloo where he has made outstanding contributions as researcher and educator. He was a founding member of the Faculty of Engineering at Waterloo and has worked tirelessly to build it into one of Canada's most influential engineering schools. As a true materials scientist, his research spans the range from basic understanding of materials processes to the application of his results for the benefit of industry. He is also well known internationally as the co-designer and developer of an inexpensive water pump currently used by millions of people in developing countries around the world.

PEO, ASMI, IOM3, CIM

### **Eugene V. Polistuk**



Eugene Polistuk is one of Canada's most prominent business leaders and the founder of one of its most successful high-tech companies. A graduate of the University of Toronto's Electrical Engineering Program, Mr. Polistuk spent 24 years at IBM, where he turned an outmoded packaging plant into one of IBM's highest performing manufacturing facilities. In 1994 he created the IBM spin-off company Celestica Inc. His exceptional entrepreneurial skill guided Celestica to a position as the world's third-largest high-tech outsourcing manufacturer, employing over 50 thousand people in 18 countries. Mr. Polistuk has received honorary degrees from Ryerson University and the University of Toronto, as well as numerous industry awards.

PEO

### **Anoush Poursartip**



Dr. Anoush Poursartip has distinguished himself in R&D of polymer matrix composites, in particular, damage growth in service and processing science for efficient manufacturing. He is recognized internationally for his original contributions and has endeavoured to transfer his research results to industry by various means. In recognition for his contributions Dr. Poursartip has won two Outstanding Performance Awards from The Boeing Company, as well as the University of Delaware Center for Composites Materials Medal of Excellence in recognition for the high quality and large impact of his work. Dr. Poursartip is a Professor in the Department of Materials Engineering at the University of British Columbia, where he directs the Composites Group.

APEGBC

### **Gamal Refai-Ahmed**



Gamal Refai-Ahmed is an AMD Fellow at Advanced Micro Devices (AMD) Canada. He is an internationally recognized expert in thermal management in relation to electronic and optical packaging, and has developed innovative electronic/optical packaging products for Nortel, Astec-Emerson, Cisco, Ceyba, ATI and AMD. Dr Refai-Ahmed is the author of more than 60 technical papers, which are widely referenced by practitioners in both academia and industry, and more than 25 granted patents and patent applications. He has demonstrated leadership in his field not just through his own research, but through his outstanding efforts to advance research in this area through the organization of international conferences and the facilitation of academic-industrial research partnerships.

PEO, ASME, IEEE, AIAA

### **Partha (Sam) Sampath**



Dr. Sampath is a recognized expert in Combustion with 39 years in research pertaining to aviation engines at Pratt & Whitney Canada. He has authored 30 publications and 15 international patents. His achievements include advancements in physics of combustion, advancements of computational tools and combustion technologies. Substantial contributions to the work of Intergovernmental Panel on Climate Change on global warming resulted in the award of Nobel Prize to IPCC. Other major contributions include ICAO on pollutant mitigation and management of major projects on alternate and biofuels research. Major contributor to the Canadian aviation environmental technologies roadmap and to advancements in university-industry collaborations in Canada and abroad.

PEO

### **David Sanborn Scott**



Dr. Scott is an internationally recognized authority on energy systems. He has received several honours. At the University of Toronto, he chaired the Mechanical Engineering Department and founded the Institute for Hydrogen Systems. He chaired the Canadian Advisory Group on Hydrogen Opportunities that produced the seminal report “Hydrogen, National Mission for Canada”. In 1989, he joined the University of Victoria, where he founded the Institute for Integrated Energy Systems. In 2006 he received the prestigious Jules Verne award for outstanding contributions to the development of energy systems. He is the author of “Smelling Land: The Hydrogen Defense Against Climate Catastrophe” (2007). In 2008, the University of Ontario Institute of Technology awarded him an honorary Doctor of Science.

CSSE, IAHE

### **Tarlochan Singh Sidhu**



Dr. Tarlochan Singh Sidhu is a renowned scientist, electrical engineer, educator and technical leader. His distinguished leadership and innovations in the area of power system protection and automation have been recognized nationally and internationally through various awards and fellowships. Through his volunteer work as editor of journals, member of editorial boards and in technical professional societies, he has provided outstanding service to the power system community. Dr. Sidhu's achievements in academia are enormous in both quantity and innovative quality. In addition to numerous scholarly publications, he has contributed to engineering education in Canada by developing unique educational programs and research laboratories in collaboration with industry for training of future engineers.

PEO, IEEE, IET, EIC

### **Peter Lewis Silveston**



Prof. Silveston's primary contribution has been pioneering the application of periodic or transient operation to chemical processes. He showed through many experiments that properly designed modulation of feed composition or flow rate can either substantially increase selectivity to desired products or dramatically raise the rates of reaction for several industrially important reactions. He has shown that system response to modulation can be used to discriminate among proposed mechanisms or reaction models. Thirty years later, some 20 research teams worldwide are working on periodic operation of reactors. A further original and innovative contribution has been the first application of population balance methods to coke gasification and to porosity development during the coking of coal.

PEO, CSC, CSCChE, AIChE, ACS, ASES

**Phillip J. Simmons**

Dr. P. J. Simmons has ensured ownership of his vision of corporate responsibility for sustainability and environmental protection has been adopted by Eco-Tec employees and many of the company's clients. He lectures regularly on entrepreneurship, innovation and environmental sustainability to students at the Universities of Toronto and UOIT. He has driven the innovative process in part by adapting and integrating other technologies to include, for example, reverse osmosis membranes and filtration of particulate matter. He served as a governor during the establishment of University of Ontario Institute of Technology (UOIT), and later served as Chairman of the Board. He also serves on the University of Toronto, Department of Chemical Engineering and Applied Chemistry's Board of Advisors.

PEO, CIC

**Vijay K. Sood**

Dr. Vijay Kumar Sood has been widely recognized for his significant developments in the modeling and simulation of High Voltage DC Transmission technology in Canada and internationally. His pioneering simulator studies of High Voltage DC and Multi-Terminal DC transmission projects prior to their implementation have contributed enormously to viability and cost effectiveness of electrical grid systems. His contributions as Editor of the IEEE Transactions in Power Delivery, and his promotion of the flagship journals IEEE Canadian Review and Canadian Journal for Electrical and Computer Engineering for IEEE Canada, have brought significant benefits to the profession. Dr. Sood's contributions in the education of electrical power engineers and the training of highly qualified personnel at various institutions continue to benefit society.

PEO, IEEE, EIC

**Torstein Utigard**

Holder of the Gerald R. Heffernan Chair in Materials Processing at the University of Toronto, Professor Torstein Arnfinn Utigard has established an international reputation as an outstanding researcher in the science and technology of pyrometallurgical processing of non-ferrous metals. With over 150 publications, eleven patents and three others pending, Professor Utigard has pioneered numerous developments pertaining to the physical chemistry aspects of metals refining. Throughout his distinguished career Professor Utigard has supervised close to forty researchers, played a major role within professional societies and facilitated international collaborations between industry and academia. In all of these activities he has been an ambassador par excellence for the engineering profession.

PEO, CIM, TMS

**William J. Vangool**

Mr. William Vangool, the co-founder of Triodetic Building Products Limited has been involved on the design and development of space frames, domes, and freeform systems for the past 38 years. The holder of patents for the assembly of modular layouts he has worked internationally with architects such as I. M. Pei, Douglas Cardinal, and Sir Roy Grounds in projects in China, Saudi Arabia, Spain, Mexico, Martinique, Cuba, Barbados, Chile, the USA, and Dubai. An internationally known engineer he has published papers on the design and construction of space frames and foundation systems for permafrost applications.

PEO, CSCE

### **Carlos Estuardo Ventura**



A Professor of Civil Engineering and Founding Director of the Earthquake Engineering Research Facility at UBC, Carlos Ventura has achieved world renown as a structural engineer. He is a well-recognized international consultant on vibration problems of structures and on seismic risk studies, and is recognized as a leader of earthquake engineering in Canada. He has accomplished global outreach to practicing engineers, including Technical Advisor to the United Nations and to the World Bank. His humanitarian work is far-reaching—he volunteers on a number of non-profit projects to aid less-developed countries and particularly focuses on projects protecting children.

APEGBC, ASCE, CSCE, CAEE, AGIES

### **Henry Wakabayashi**



Over the past 40 years, Henry Wakabayashi, CM, OBC, P.Eng. has directed major construction projects in British Columbia worth a total of over \$12 billion. He has built a reputation as a successful manager of mega-projects, including high-profile infrastructure projects such as Northeast Coal Development, Vancouver's SkyTrain and Convention Centre, the Greater Vancouver Regional District's drinking water treatment program, and the International Terminal and Parallel Runway at the Vancouver International Airport. Mr. Wakabayashi has also earned widespread respect for his involvement in charitable work, particularly in initiatives to build and enhance relations between Canadians in general and those of Japanese ancestry, and for his support of engineering undergraduate education.

APEGBC

### **David S. Wilkinson**



David Wilkinson, Dean of Engineering at McMaster University is internationally recognized as a researcher specializing in the effect of thermomechanical processing on the properties of metals and alloys, the incorporation of damage into models of deformation and ductile fracture and the creep behaviour of structural materials. He has authored over 200 scientific publications specializing in the mechanical behaviour of both metals and ceramics, including an undergraduate textbook published by Cambridge University Press. Dr. Wilkinson is also the founding Director of the McMaster Center for Automotive Materials. He has received honours and recognition from the Royal Society of Canada, the Canadian Institute of Mining and Metallurgy (CIM), the American Ceramic Society, and he holds the title of Distinguished University Professor.

PEO, CIM, ACerS, TMS-AIME, ASM

### **Hugh Charles Wood**



For contributions to the development of new electronic technologies and processes enhancing the export of Canadian products, the training of many successful graduate students, and especially for key-role in the growth of a new Canadian high tech company, Vecima Networks; Vecima has grown from a 3-person basement startup to a \$150Million publicly listed company in exporting Canadian designed and manufactured electronic and software products to the international telecommunications marketplace. Successful products include new technologies to deliver broadband data over wireless networks, and over coaxial cable and fibre optic networks, as the telecommunications industry transforms to a fully digital configuration. Over 50% of the global Internet-over-cable traffic passes through Vecima equipment.

APEGS, IEEE

### Michael Worswick



Dr. Michael Worswick is a Professor in the Department of Mechanical and Mechatronics Engineering of the University of Waterloo and holds a Tier 1 Canada Research Chair in Light Weight Materials Under Extreme Deformation. His research activities encompass forming, joining and machining for automotive manufacturing. He led Waterloo Centre for Automotive Materials and Manufacturing and was the founding Director of the Waterloo Centre for Automotive Research. He is also co-Principal Investigator for the \$46.5M "Initiative for Automotive Manufacturing Innovation". These successful collaborative efforts have brought together diverse groups of researchers to provide essential support for Canadian Industry.

PEO, SAE

### Safwat Zaky



University of Toronto Professor Safwat Zaky has a long record of exemplary service as a leader in engineering education. He recently completed a six-year term as Vice-Provost, Planning and Budget, during which he introduced a new, more transparent budget model which changed academic and financial planning in the University in a fundamental way. Professor Zaky served as Chair of U of T's Department of Electrical and Computer Engineering from 1993-2003, spearheading a major curriculum redevelopment in response to changes in the field. He has published over 70 refereed scientific papers in international journals and conferences, and coauthored two books: "Computer Organization" and "Microcomputer Structures".

PEO, IEEE

### Shiping Zhu



Shiping Zhu is Professor, Canada Research Chair, and Department Chair of McMaster Chemical Engineering. He is a world leading expert in the reaction engineering research of controlled/living radical polymerization and has made major contributions to the understanding and development of advanced polymerization technologies and to establishing polymer structure-property relationships. His work emphasizes engineering fundamentals and problem solving, and is of high impact. He has trained over fifty highly qualified personnel and published over two hundred refereed journal papers, receiving over 4,000 SCI citations. He is also an active consultant and volunteer, and a public advocate for the profession, delivering over eighty public seminars worldwide.

PEO, CIC, AIChE, ACS

### David Zingg



Professor David Zingg is Director of the University of Toronto's Institute for Aerospace Studies (UTIAS), and holds the Canada Research Chair in Computational Aerodynamics and Environmentally Friendly Aircraft Design. He has made fundamental contributions in algorithms for computational fluid dynamics and aircraft design, as well as aerodynamic shape optimization. His research is highly cited and appears in the most prestigious journals in the field. In 2004 Professor Zingg was awarded a Guggenheim Fellowship to pursue his current area of research, the aerodynamic design of novel aircraft configurations with reduced greenhouse emissions. He has championed the need to reduce the impact of aviation on climate change and has built a team at UTIAS to address this urgent priority.

PEO, CASI, AIAA, SIAM

**Jean W. Zu**

Professor Jean W. Zu is Chair of the University of Toronto's Department of Mechanical and Industrial Engineering. Her research focuses on vibrations and dynamics, particularly in relation to automotive belts and serpentine belt drive systems, and has resulted in a number of extremely successful partnerships with automotive firms. Professor Zu has served as President of the Canadian Society for Mechanical Engineering (CSME) and as a member of the National Council of the Engineering Institute of Canada (EIC). She is also a member of the Canadian National Committee for the International Union of Theoretical and Applied Mechanics. Jean Zu is a Fellow of the American Association for the Advancement of Science, the American Society of Mechanical Engineers, CSME and EIC.

PEO, ASME, EIC, CSME, AAAS