Media Release

Fifty-four new Fellows inducted into the Canadian Academy of Engineering

Ottawa – (21 June 2019) – President Eddy Isaacs inducted 49 new Fellows and five new International Fellows into the Canadian Academy of Engineering on 21 June 2019. The ceremony took place in Quebec, in conjunction with the Academy's 2019 Annual General Meeting and Symposium. Dr. Isaacs commented: "Over our past 32 years, Fellows of Academy have provided insights in the fields of education, infrastructure and innovation, and we are expecting the new Fellows to expand upon these contributions to public policy considerably. They are engineers from widely varying backgrounds, from Industry, Academe and Government, but they all have in common the demonstrated desire and ability to go beyond the normal practice of engineering and serve as role models in their fields and to their communities." Citations and photographs for each of the new inductees follow.

The Canadian Academy of Engineering (CAE) is the national institution through which Canada's most distinguished and experienced engineers provide strategic advice on matters of critical importance to Canada. The CAE is an independent, self-governing and non-profit organization established in 1987. Members of the CAE 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 Canadian Academy of Engineering 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 CAE 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.

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NEW FELLOWS 2019

Marco Amabili, Professor and Canada Research Chair, Mechanical Engineering, McGill University

Dr. Marco Amabili of McGill University is an international leader in education and research in mechanical engineering. His specialty is mechanical vibrations and fluid-structure interactions and his research has made tremendous progress in nonlinear vibrations of structural components. He is the author of a large number of highly-cited scientific contributions in prestigious journals and he is the sole author of two monographs published by Cambridge University Press. He serves in editorial positions in several top-ranked scientific journals. Dr. Amabili was recognized by valued awards at his home institution and internationally.

Majid Bahrami, Professor and Canada Research Chair in Alternative Energy Conversion Systems , Simon Fraser University

Dr. Majid Bahrami is a visionary leader and researcher who has made significant impacts on society by advancing fundamental aspects of thermofluidic transport phenomena and advanced materials and by applications of novel sustainable energy-water systems. His research and engineering innovations have opened new avenues for translational research and received global attention, with exceptional contributions to the fields of waste-heat driven air-conditioning systems, sorption composites, heat exchangers, thermal storage, passive cooling, fuel cells, batteries, and atmospheric water harvesting. He has an exemplary track record in publications, citations, technology transfer, entrepreneurship, funding and training of engineers and engineering professors.

Kathy Baig, Présidente, Ordre des Ingénieurs du Québec

Kathy Baig has distinguished herself by her exceptional contribution to the restoration of confidence in the engineering profession in Quebec following the Charbonneau Commission, and by her contributions to several companies (Aéroports de Montréal, PyroGenesis Canada and others) and Boards of Directors (VIA Rail, Engineers Canada). President of the Ordre des ingénieurs du Québec since 2016, she implements the ING2020 Strategic Plan to make the Order the benchmark for the protection of the public. Her achievements have been recognized by Engineers Canada and the Federation of Chambers of Commerce of Quebec (Mercure Award for her leadership).

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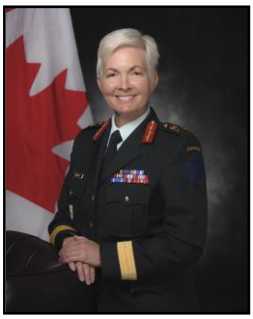
Clive Brereton, Senior Process Engineer, Noram Engineering and Constructors Ltd.

Dr. Clive Brereton is a creative innovator and problem solver with an extraordinary record of outstanding accomplishments. His innovations have made key contributions to the development of NORAM's highly successful nitrobenzene technology, which accounts for more than half of the world production. Among his strategic initiatives, he has led the creation of an electrochemical business, which has grown in enterprise to a status comparable to the nitrobenzene business. He is an enthusiastic mentor and teacher, passing on his passion for engineering innovation to the next generation of engineers within NORAM and in his capacity as an Adjunct Professor at UBC.

Marie-Annabelle (Jennie) Carignan, Brigadier General, Commander 2nd Canadian division and Joint Task Force East, Canadian Armed Forces



A graduate of the Royal Military College of Canada in Engineering, Brigadier-General Jennie Carignan was appointed Commander of the 2nd Canadian Division and Joint Task Force (East) in June 2018. She also commanded 5 Combat Engineer Regiment, Task Force Kandahar Engineer Regiment and Royal Military College Saint-Jean. Overseas, she served in Bosnia-Herzegovina, the Golan Heights, and Afghanistan. BGen Carignan earned a Master's degree from the United States Army Command and General Staff College and the School of Advanced Military Studies. She is a graduate of the National Security Studies Programme and earned a Master's degree in business administration from Université Laval. BGen Carignan was awarded the Order of Military Merit and the Meritorious Service Medal. She was awarded the Major-General Hans Schlup Award for excellence in international relations.

Pascale Champagne, Professor and Canada Research Chair, Queen's University and Director, Beaty Water Research Center

Pascale Champagne is Director of the Beaty Water Research Centre, as well as a Professor at Queen's University in the Civil and Chemical Engineering departments. She is an innovative and collaborative researcher and an internationally-recognized authority in the development of alternate water and waste management technologies and sustainable environmental approaches with a focus on integrated bioresource management. Her diverse background spanning biology, green chemistry, and environmental and civil engineering supports her creative approach to developing solutions to environmental problems. Her work has important societal, economic and environmental implications, for which she has been recognized both nationally and internationally.

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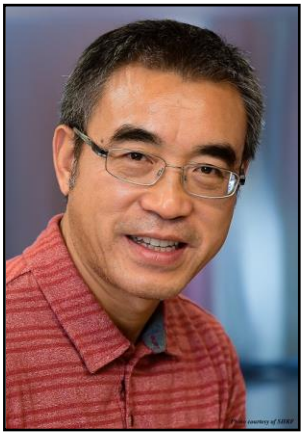
Xiongbiao Chen, Professor, University of Saskatchewan



Dr. Xiongbiao Chen is an international leading scholar in bio-fabrication. His most notable achievement is creating and leading an interdisciplinary research program in tissue engineering with the aim of developing scaffolds for repairing damaged tissue and organs. He displayed remarkable vision and leadership in initiating and conducting a series of successful research collaborations across the University of Saskatchewan and worldwide. He developed novel methods and technologies, leading to significant progress and breakthroughs in the design and fabrication of scaffolds for tissue engineering. He is the recipient of numerous awards in recognition of his research excellence.

Ying-Hei Chui, Professor, University of Alberta

Dr. Ying-Hei Chui is one of Canada's leading researchers in wood structural systems and engineered wood products. He is currently Professor and NSERC Industrial Research Chair in Engineered Wood and Building Systems at the University of Alberta. In addition to being a leading researcher, Dr. Chui has also demonstrated an ability to lead multi-institutional and multi-disciplinary research programs, which have led to increased use of engineered wood products in high-rise buildings. Over the last 35 years, Dr. Chui has made significant contributions in making wood structures better, safer, and more affordable.

Gina Parvaneh Cody, Corporate Director, Canadian Apartment Properties REIT, European Residential REIT and Board of Trustees, Concordia University

Dr. Gina Cody is a prominent business leader and engineer. She started her career as the first woman to be awarded a PhD in building engineering by Concordia University and went to conquer the business and engineering world as the principal shareholder of a national engineering firm. Throughout her career, Dr. Cody made it a priority to raise the status of the engineering profession with women and minorities, while working with numerous professional associations. In 2018, Concordia University renamed its engineering and computer science faculty in her honour, Gina Cody School of Engineering and Computer Science.

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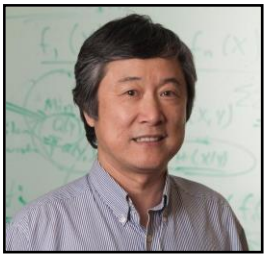
Katherine Crewe, Chair, TEC-Canada

Katherine Crewe is currently a group chair with TEC-Canada and serves on Boards of various profit and non-profit organizations. She is Lean certified and had a successful career in life science operations where she is the holder of a patent of a coronary stent. She is making contributions to society through the increased participation of women in STEM and diversity in the workplace by her involvement with Engineering Women's Advisory Committees, Women in Bio, University Engineering Advisory Committees and corporate diversity committees.

Kevin J. Deluzio, Dean & Professor, Faculty of Engineering and Applied Science, Queen's University

Dr. Kevin Deluzio is Dean of the Faculty of Engineering and Applied Science at Queen's University and an international leader in biomechanical engineering. Dr. Deluzio collaborates across disciplines to develop new biomedical technologies for the measurement and assessment of human motion and has over 200 publications in refereed journals and proceedings. He has served on the Executive Committee of the Canadian Society for Biomechanics and is Past-President of the Canadian Orthopaedic Research Society. He is recognized for his research and teaching excellence, his leadership in ensuring education standards and increasing diversity in engineering, and his mentorship of faculty and students.

Li Deng, Chief Artificial Intelligence Officer, Citadel America LLC



Li Deng is an internationally prominent researcher, engineer, educator, and technology leader in artificial intelligence, machine learning, signal processing, financial engineering, speech recognition, and natural language processing. He has invented a series of ground-breaking machine learning paradigms, architectures, methodologies, and algorithms for hidden Markov models and deep neural networks. He has been widely recognized for his 2009-2013 pioneering contributions to world-wide speech recognition industry using large-scale deep learning. His original and landmark research, over 30 years, combined with his outstanding leadership in advancing engineering knowledge, have culminated in the spectacular effects of deep learning and AI on society today.

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Clayton Deutsch, Professor, University of Alberta

Canada's preeminent expert in natural resources uncertainty management and a Tier 1 Canada Research Chair, Dr. Deutsch's extensive body of work has significantly influenced the direction of research in the field of computational geostatistics both in Canada and abroad. For over 20 years, Dr. Deutsch has been developing computer models to better predict resource quantities in unsampled locations. Widely adopted by the oil-and-gas industry and recognized by a number of academic organizations, his techniques have helped countless practitioners more efficiently produce natural resources while lessening the impact such production has on the environment.

Stephen Elop, Senior Advisor, TPG

Stephen Elop has made pioneering contributions that have led to the rapid evolution of computing technology, producing advances in foundational tools and technologies for telecommunication networks and the modern Internet. He has demonstrated global leadership in some of the world's largest tech companies, providing consumer and business solutions based on web- and cloud-based delivery and operations. His entrepreneurial and business leadership have significantly impacted Canada and the world, as anyone who has used Microsoft Office would attest. Stephen Elop is also a philanthropist committed to promoting rigorous STEM-based education and a deep appreciation for the arts.

Farid Golnaraghi, Professor and Director, School of Mechatronic Systems Engineering, Simon Fraser University

Dr. Farid Golnaraghi is a highly published and cited researcher with 400+ journal papers, conference presentations, professional reports, invited presentations, and 17 patents. In addition, his work has been the basis for four start-up companies. These companies address issues of assisting the visually impaired, sensors for the automotive industry, brain injury mitigation, and optical breast cancer detection. His textbook on Automatic Control Systems is internationally renowned and is in its 10th edition. He is the founding and only Director to date of the highly successful School of Mechatronic Systems Engineering at SFU.

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Randy Herrmann, Director - ENGAP, University of Manitoba

Randy Herrmann has provided exceptional leadership as the Director of the Engineering Access Program in the Faculty of Engineering at the University of Manitoba. This program has graduated well over 100 engineers of Indigenous heritage who have gone on to demonstrate the importance of engineers who share the cultural heritage of Indigenous Peoples. Randy is widely recognized as the leading Canadian authority on programs that support Indigenous Peoples, particularly those from isolated communities, as they pursue engineering degrees. More than any other Canadian engineer, Randy has shaped the future of Indigenous Peoples in Canada.

Ekram Hossain, Professor, University of Manitoba

Dr. Ekram Hossain is an internationally recognized expert in wireless communications and networking. His pioneering research contributions in radio resource management for cellular wireless and cognitive radio networks have significantly impacted research and development in this area and enabled advancement of broadband wireless communications technology. His research works have been highly cited and have received international recognitions. He is an extraordinary engineering educator and mentor of engineering graduate students. He has provided outstanding professional services to the communications research community through involvement in numerous journal editorial and conference activities.

Stephen Howe, Executive Vice President & Chief Technology Officer, Bell Canada

Stephen Howe is a Canadian innovator who leads a talented and committed Bell Network team that designs, builds and operates the company's leading broadband fibre, wireless, satellite and media networks. During his career at Bell and with incumbent and start-up communications companies in Canada and internationally, Stephen has led the development and implementation of world-class advances in both wireless and wireline communications technologies. Under Stephen's leadership, Bell deployed the most extensive broadband fibre and wireless networks that keep Canadian consumers and businesses connected.

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Peter Huck, Professor and NSERC Industrial Research Chair, University of Waterloo

Dr. Peter Huck's stature as a national and internationally recognized leader in the quality and safety of drinking water comes from his successful employment of biofiltration and membrane technologies in protecting water from pathogens and trace contaminants. He has made profound advances in knowledge and practice, assembled a world class research team, trained a generation of skilled future leaders, and established a network of collaborating organizations. He has been appointed to an unprecedented six continuous terms as an NSERC Industrial Research Chair. His prestigious honours and awards attest to his contribution to the confidence we have in the water we drink.

Jeffrey Karp, Professor of Medicine, Brigham & Women's Hospital, Harvard Medical School

Dr. Jeff Karp heads the Laboratory for Accelerated Medical Innovation at Brigham and Women's Hospital. In doing so, he has developed multiple products undergoing clinical development, trained 20 new faculty members, and founded 7 companies (that have collectively raised $200 million). He has won numerous international awards, and is well known as a captivating public speaker. Karp's research harnesses materials science and stem cell biology to solve medical problems with emphasis on nanoscale/microscale materials and bio-inspired approaches in regenerative medicine and drug delivery, translating a variety of exciting new technologies into treatments for the patients who need them the most.

Shanna Knights, Director – Research, Ballard Power Systems Inc.

Shanna Knights is recognized by the international science and engineering community for her significant contributions in advancing the polymer electrolyte fuel cell. This is particularly demonstrated by her pioneering work in the area of fuel cell durability where she has over 33 issued patents and 110 publications. With over 30 years' chemical engineering experience, she has demonstrated strong technical leadership in research and development as a Manager and Director at Ballard Power Systems for over twenty years. Shanna's many professional contributions have provided leadership on a variety of boards and task-forces, which have facilitated the rapid growth of the cleantech sector in North America.

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Leo Lau, Professor, University of Science & Technology Beijing

Mastering the synergy among frontier research, professional engineering and business management, Professor Lau has translated the results in his 400+ scientific publications and 100+ inventions into 40+ technology-transfers and several start-ups. Through his capacity as Faculty Dean, in six Center Directorships, as a Journal Associate-Editor, and in several Corporation-Board-Directorships, he has inspired thousands of young engineers to excel themselves in learning, innovation and incubation. He has received the Green Chemistry & Engineering Award in Ontario, several national/regional awards in China, and over $50 million in research grants, industrial contracts and start-up investments.

Thomas Lee, Chief Education Officer, Quanser Consulting

A visionary, Tom Lee has integrated technologies, methods, and perspectives into innovative new concepts by contributing to three highly successful Canadian startups: Maplesoft (mathematical computing), Certicom (cryptography), and Quanser (engineering education). His work combines the technical depth of academic research with pragmatic and goal-directed approaches to advanced technology commercialization. He pioneered the application of symbolic mathematical computing in engineering modeling. Dr. Lee's recent work integrated advanced mechatronic and robotic technologies with innovative pedagogy for teaching the design of complex, intelligent engineering systems. He is also passionate about outreach and is a leading figure in the FIRST Robotics organization.

Pierre Léger, Professor, Polytechnique Montreal

Dr. Pierre Léger, professor at Polytechnique Montreal, is widely recognized for his outstanding achievements in teaching, research and professional practice. His pioneering contributions in the analysis, design and safety assessment of concrete dams include guidelines and novel practical analytical tools disseminated through publications, courses, and computer software, and adopted worldwide. His numerical and experimental research on the cracking of unreinforced concrete considering water pressure effects has significantly influenced engineering practice. He received many teaching awards including a prestigious Teaching Fellowship from the Quebec Government and the CSCE Whitman Wright Award for developing advanced computerized tools used in teaching and practice.

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Ping Liang, Chairman, Cellular Nanomed Inc. and RF DSP Inc.

Dr. Ping Liang is a serial entrepreneur and researcher whose technologies improved mobile device connectivity for billions of users. He was elected a Fellow of the US National Academy of Inventors for the significant economic and societal impact of his inventions. He developed award-winning 5G wireless products, pioneered active controllable wireless channels for millimeter-wave that brings artificial intelligence to over-the-air channel, made key contributions to widely used industry standards on USB On-the-Go and wireless coexistence, and pioneered technologies that use signal processing and multi-mode magnetoelectric interface for non-invasive or non-surgical read/write Brian-Computer Interface, intracellular drug delivery, cancer treatment and detection.

Jiangchuan Liu, Professor, Simon Fraser University

Dr. Jiangchuan Liu is an internationally renowned researcher and technology innovator in multimedia communications and content distribution. He has published extensively in this multidisciplinary field, receiving over 13,900 citations, and his work has made significant impact on industrial product development. He is a key contributor to the world's first million-user-scale live streaming system, which inspired the development of numerous commercial systems. His pioneering contributions to the areas of social and cloud media have assisted product development in Canadian companies and have been acknowledged with numerous international awards. He is an IEEE Fellow and an NSERC E.W.R. Steacie Memorial Fellow.

Chandra Madramootoo, Professor, McGill University

Dr. Chandra Madramootoo is nationally and internationally recognized for his engineering research, leading to new technologies and improved water management practices in agriculture. He has received several awards for his research, teaching and contributions to the engineering profession. He has published extensively and presented his research findings at national and international conferences. At McGill University, he was the founding Director of the Brace Centre for Water Resources Management, Dean of the Faculty of Agricultural and Environmental Sciences, and Associate Vice-Principal of the Macdonald Campus. He actively contributes at leadership levels in international water organizations, and international research and development institutions.

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David Manz, President, Manz Engineering Ltd.

Dr. David Manz is a world-renowned expert in the field of irrigation engineering and an award-winning educator. He invented and champions the Manz BioSand Water Filter, internationally recognized as an affordable and effective technology providing safe water for people around the world including communities in Western Canada. He is a climate change specialist and developed technologies for cost effective treatment of fracture flow-back waste water resulting from exploitation of natural gas reserves. His humanitarian agenda includes initiatives to reach billions of people who could benefit from his water treatment technology. He is a Member of the Alberta Order of Excellence.

Jayalingam Nagendran, Registrar and CEO, Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Jay Nagendran's outstanding engineering career has been dedicated to protecting the environment and the public interest. He has provided leadership to environmental challenges, including those at Canada's first hazardous waste management facility at Swan Hills, and implementing stringent standards to protect the Athabasca River basin from pulp mills and oil sands development. Internationally, he facilitated major improvements in river pollution control in Indonesia and waste management in south India. A multiple award winner in Alberta and the U.S., Jay has now capped a distinguished career of professional service at senior leadership levels becoming the Registrar/CEO of APEGA in 2017.

James Politeski, President, Ductmate Canada Limited

James Politeski is recognized for his technical designs, business leadership and strategic vision in leading the growth and transformation of the North American consumer electronics industry over the past 20 years. He is known for building high performing teams and high growth based cultures. Throughout his career, James Politeski has showcased Canadian engineering and design to the world. Leveraging upon his success in leading global corporations, he now promotes Canadian innovation by growing small businesses so that they are able to reach global markets. He is a philanthropist and volunteers on boards to improve the reach and impact of education.

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Milos Popovic, Institute Director, KITE – Toronto Rehabilitation Institute, University Health Network

Dr. Milos Popovic is the Director of Research at the Toronto Rehabilitation Institute at the University Health Network and a professor in the Institute of Biomaterials and Biomedical Engineering at the University of Toronto. He was previously the Toronto Rehab Chair in Spinal Cord Injury Research. In 2008, Dr. Popovic co-founded MyndTec Inc. to commercialize MyndMove, a neuromodulation system for restoration of voluntary upper limb function, which he developed. He also helped establish the Centre for Advancing Neurotechnological Innovation to Application (CRANIA) and the Canadian Spinal Cord Injury Rehabilitation Association.

Geordie Rose, CEO, Sanctuary

Dr. Geordie Rose is a pioneer and global thinker in two of the most transformative technologies of our time: quantum computing and artificial general intelligence. Dr. Rose has been the founder of three technology companies to commercialize these technologies. He is considered one of the leading strategists in the world on the commercialization of quantum computing with his successful founding of D-Wave, the first company in the world to build a quantum computing system. Dr. Rose is working toward the ultimate goal of a future where intelligent machines work together with people.

Laurier Schramm, Chief Scientist, Saskatchewan Research Council

Dr. Laurier Schramm was the President and CEO of the Saskatchewan Research Council (SRC). Under his visionary leadership, SRC became one of Canada's premier innovation-enabling organizations quadrupling its revenues, more than doubling the number of employees, and establishing a solid track-record of demonstrable economic impacts in Saskatchewan and Canada. He has substantial R&D leadership, management, and governance experience, having worked in each of the industry, not-for-profit, university, and government sectors – including previously serving as Vice President of the Alberta Research Council, President and CEO of the Petroleum Recovery Institute, and Senior Staff Research Scientist with Syncrude Canada Inc.

NEW FELLOWS 2019

Sadie Sellars, Project Execution Advisor, ExxonMobil Canada

Sadie Sellars has made significant technical and leadership contributions in a series of progressive roles associated with the development and modifications of oil and gas facilities, in particular the Hibernia, Sable and Hebron assets offshore Eastern Canada. Most recently as Technical Manager and member of the Senior Leadership Team, she helped lead the Hebron Project, one of the most complex feats of engineering and construction in Canada's history which also achieved world class safety and schedule performance. She is a founding member and former president of Women in Science and Engineering (WISE-NL) and serves on the C-CORE Board of Directors.

Howard Shearer, Chief Executive, Hitachi Canada

Howard Shearer is nationally recognized for his contributions made at the forefront of nuclear power and energy engineering in Canada. As a business leader, he has worked to make Canada a world leading powerhouse in smart systems and big data by helping build capacity for Canadian innovation in the digital world. His outstanding and selfless service on boards, committees and councils is notable. As one of a few Black engineers who is a corporate leader in Canada, Howard Shearer is a role model for the engineering community through his technical work, strategic thinking, business leadership and advocacy.

Weiming Shen, Principal Research Officer, National Research Council Canada

Dr. Weiming Shen, NRC Principal Research Officer, IEEE & EIC Fellow, is an internationally renowned leader in collaborative intelligent systems. He has been a major source of leadership, influence and impact through key new ideas, concepts and techniques in collaborative engineering design, intelligent manufacturing, and intelligent building. His recent significant impacts are demonstrated through the development and implementation of intelligent building technologies at 30+ federal government buildings. He has received many prestigious awards at the national and international levels. He has served as Editor-in-Chief and Associate Editor of over 10 international journals and as Chair/Co-Chair of 20+ international conferences.

NEW FELLOWS 2019

Sarah Shortreed, Member of Board of Governors, Western University

Sarah Shortreed has global experience in many roles including business consulting, complex program management, operations, sales, customer relationship management, and product management. Her leadership as CIO of a $3B corporation, focused on technology implementation in a heavy industrial environment, is responsible for the impact of technology convergence issues, especially cybersecurity. At Blackberry, Sarah served as a VP responsible for strategy, planning, procurement, process improvement and business continuity across four Blackberry (RIM) operating units. She has contributed to the advancement of information technology in the engineering profession and supported community groups through her expertise.

David Sinton, Professor, University of Toronto

Dr. David Sinton, Canada Research Chair in Microfluidics and Energy at the University of Toronto, was the first to propose widely applying microfluidics technologies (which were developed largely for medical applications) to energy. He is a co-founder and the CTO of Interface Fluidics Ltd, a start-up focused on improving the environmental and economic performance of energy operations. Dr. Sinton has contributed in several leadership roles, including Interim Vice-Dean Research for U of T Engineering and Editor-in-Chief of the CSME Bulletin. He is a Fellow of ASME, CSME, the Engineering Institute of Canada, and the American Association for the Advancement of Science.

Liang Song, Chief Scientist, OMESH Group

Dr. Liang Song is a world-class engineer and entrepreneur in smart wireless systems, an emerging area of artificial intelligence (AI) and next-generation wireless systems. Due to his contributions in both L2 cognitive multi-hop wireless networks and distributed AI, large-scale and ubiquitous smart infrastructure can be possible, by interconnecting smart terminals with data sensing, wireless communications, and processing. His work represented Canada in 5G telecommunications, impacting all cellular subscribers; and is leading the development of global smart infrastructure. Dr. Song has received world-wide recognitions, and mentored over fifty graduate students, younger researchers and business managers/executives partly through his honorary professorships.

NEW FELLOWS 2019

Gina Succi, Executive Vice President, Westhill Innovation Inc.

Gina Succi's career in engineering spans over three decades in roles from design engineer to Executive Vice President of her own company. For the past 20 years, her focus has been on product development and commercialization in four vastly different market sectors including steelmaking, logistics, mining and construction. She is recognized for integrating technological innovation, operational excellence and customer pull as the basis of a successful corporate strategy. Gina is an inventor with three current patents-pending and more in the making. She mentors aspiring engineers and is a role model for women who are considering a career in technology and trades.

Pearl Sullivan, Professor and Dean – Faculty of Engineering, University of Waterloo

Dr. Pearl Sullivan has demonstrated exceptional leadership in her roles as academic leader and research investigator. Her work in collaboration with industry has developed important knowledge and practice with advanced material systems. She has championed education and research in disruptive technologies such as: advanced manufacturing, nanotechnology, artificial intelligence, machine learning and robotics. Dr. Sullivan has been a strong voice for women in engineering as a discipline of choice for their education and careers. Her leadership has enabled the University of Waterloo to achieve national and international prominence for engineering education and research.

Dong Sun, Professor, City University of Hong Kong

Dr. Dong Sun is a global leader in micro-robotics for biological cell manipulation and micro-surgery. He has invented robot-aided automated processes of using micro-engineering tools such as optical tweezers, micro-needles, and electromagnetic devices to achieve single cell manipulation and cell surgery. His other pioneered work includes synchronized motion control with successful technology transfer to industry. He has made impactful contributions to Canadian industry through successful collaborative projects and training of highly qualified engineers. His accomplishments have been recognized through prestigious awards, including the Hong Kong Awards for Industry and Fellow of IEEE.

NEW FELLOWS 2019

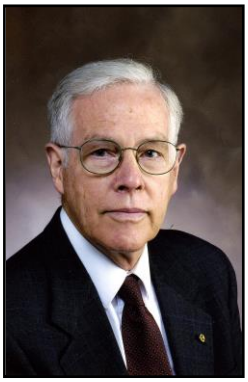
Robert Tong, Vice President & General Manager – Computing and Cloud Division, ON Semiconductor Mobile

Robert Tong is an exemplar for Canadian innovation in semiconductor-based digital signal processing. Through his career he has provided solutions for energy efficient power management, analog, sensors, logic, timing, connectivity, discrete, system on chip and custom devices. As an engineer, entrepreneur and business leader, his work has helped overcome unique design challenges in automotive, communications, computing, consumer and medical applications. Today's high quality digital hearing aids and wireless headsets have become possible because of his engineering solutions. While the products that he has enabled are sold globally, his career, centred in Canada, has led to thriving Canadian companies and jobs.

Lihui Wang, Chair Professor, KTH Royal Institute of Technology

Dr. Lihui Wang, a registered Professional Engineer and active on the world stage, is an internationally renowned scholar in manufacturing research and education. With rich multi-national experience in Canada, China, Japan and now Sweden, he has been promoting Canada beyond the borders. His contributions to manufacturing science include a novel algorithm that enables adaptive mesh generation for dynamic finite element analysis, and methods for improving the responsiveness and dynamism of manufacturing operations under uncertainty conditions. He has been recognized with honors and awards, including election as a Fellow of CIRP/SME/ASME and as the Chairman of the Swedish Production Academy.

Frank Wheeler, Senior Consultant – Iron & Steel (Retired), FMW Consulting



Dr. Frank Wheeler has been eminently successful in the generation and application of new knowledge associated with direct reduction of iron ore and steelmaking operations. With over forty years' experience, he has provided superb engineering leadership in the conceptual design and start-up of new facilities within Canada and abroad. In addition to journal publications, conference papers and patents, he has coauthored a textbook entitled "Metallurgical Plant Design". Throughout his distinguished career, he has made significant contributions to the training of Engineering students. Facilitating knowledge exchange between industry and academia, Wheeler has served as an excellent ambassador for the Engineering Profession.

NEW FELLOWS 2019

Carole Wilson, Ford OEM Field Manager - Ontario, AutoAlert, LLC

Carole Wilson is a strategic thinker with a global mindset and entrepreneurial focus who has implemented change nationally and abroad. She has developed stratagems and driven organizational change during a dynamic career in the automotive industry touching on manufacturing, product development, finance, marketing, sales and service. She developed the market equations for all current and future model Lincoln vehicles sold in Canada, successfully launching two new nameplates and three redesigned vehicles. Her philanthropy touches women in engineering at McMaster University. She has volunteered to build homes in Milton, ON, Detroit and Phuket, Thailand (after the 2004 Tsunami).

Q. M. Jonathan Wu, Professor, University of Windsor

Dr. Q. M. Jonathan Wu is a University of Windsor Engineering Professor and a Tier-1 Canada Research Chair, first awarded in 2005 and renewed in 2012. He is a world-leading expert in the field of computer vision and machine learning with one book and 350 publications in prestigious journals and conference proceedings. His works have been cited more than 7,300 times. He has developed many novel methodologies and systems for a wide variety of real-world applications, ranging from machine vision systems for manufacturing automation, machine learning and sensor fusion for autonomous driving to big data analytics for medical image analysis.

Chunbao Charles Xu, Professor, Western University

Dr. Xu is an internationally recognized leader and innovator in converting agro-forestry biomass/residues into bio-based chemicals and polymer materials. His contributions are not only generating over 20 inventions & patents in biorefinery/bioproducts, but also in transferring new technologies to industry, such as founding Western Maple Bioresources Inc. for commercialization of VOC-free coatings and formaldehyde-free adhesives. Dr. Xu has received many awards/recognitions from Canada, China, Japan, Demark and New Zealand, including the prestigious Syncrude Canada Innovation Award from CSChE. He is also an outstanding educator, having graduated ~80 PhD/MESc students and published 190+ refereed journal papers.

NEW FELLOWS 2019

Halim Yanikomeroglu, Professor, Carleton University

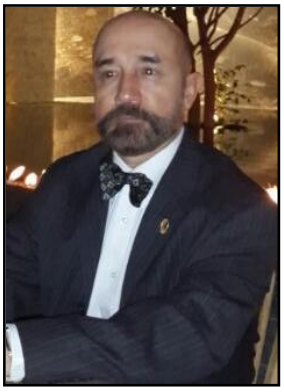
Dr. Halim Yanikomeroglu is a world-renowned academic, inventor, and researcher in wireless communications. His collaboration with the Canadian and international industry on 4G and 5G wireless networks resulted in 27 granted patents in key technologies. He is best known for his visionary and pioneering work on relaying technology which resulted in several seminal publications with thousands of citations; this technology was adopted in various standards including 4G LTE and 5G. He received several awards for his research, teaching, and service. He is a Fellow of IEEE and a Fellow of Engineering Institute of Canada (EIC); he is an IEEE Distinguished Speaker.

Hongbo Zeng, Professor, University of Alberta

Dr. Hongbo Zeng is a Tier 1 Canada Research Chair and Member of The College of The Royal Society of Canada. As a world leading expert in interfacial science and engineering, he has made major contributions to understanding how intermolecular and surface forces in polymers, colloids, emulsions and bubbles determine their physicochemical properties and performance in various engineering processes. He has applied this knowledge to the development of new functional materials and surfaces via tunable intermolecular interactions. He has published 220 peer-reviewed papers in top journals, one book and nine patents, and has supervised over 80 graduate students and postdoctoral fellows.

NEW INTERNATIONAL FELLOWS 2019

Victor Castaño, Professor, Universidad Nacional Autonoma de Mexico



Professor Victor Castaño has pioneered the surface modification of nanostructures, in particular carbon nanotubes, where some of his papers are among the most cited in literature. He has received numerous awards in Mexico and internationally and is one of the most prolific and cited Latin American scholars, with over 700 peer-reviewed articles and more than 12,500 citations. He has had academic and industrial relations with Canada for more than three decades, promoting student and faculty exchanges, starting Mexican-Canadian companies and organizing joint conferences. He is the only scientist elected to all three Academies in Mexico (Sciences, Engineering and Medicine).

NEW INTERNATIONAL FELLOWS 2019

Nader Engheta, H. Nedwill Ramsey Professor, University of Pennsylvania

Professor Engheta is recognized for his trailblazing contributions in engineering and physics of light-matter interaction in metamaterials. He has pioneered several transformative new fields in electromagnetic/optical sciences, including optical metatronics (circuits with light at the nanoscale); zero-parameter materials (e.g., near-zero-index media); and plasmonic cloaking. His work on metatronics has unified the fields of electronics and photonics with nanocircuit elements for photons and electrons. His work on epsilon-near-zero materials has introduced an entirely new paradigm for light-matter interaction. His cloaking work provided a new mindset in stealth engineering. He has an ongoing collaboration with the University of Ottawa.

Meyya Meyyappan, Chief Scientist for Exploration Technology, NASA Ames Research Center

Dr. Meyya Meyyappan is a pioneer and internationally recognized leader in nanotechnology. He has excelled in application development using nanomaterials in chemical sensors, biosensors, electronics and energy storage devices. He holds 25 patents, has published over 375 journal articles with an excellent citation record and given over 250 Plenary/Keynote talks. His peers have recognized him with numerous awards including election to Fellow by nine professional societies. He has an exceptional public service record devoted to nanotechnology education, benefiting a wide range of audiences, which has earned him numerous education awards. He has collaborated with Canada's NRC and private Canadian start-ups.

Nicholas Peppas, Cockrell Family Regents Chair in Engineering, The University of Texas at Austin

Dr. Nicholas A. Peppas is Cockrell Family Regents Chair in Engineering and Professor of Chemical Engineering, Biomedical Engineering, Medicine and Molecular Pharmaceutics at the University of Texas at Austin. Peppas is internationally known for his work on the preparation, characterization and evaluation of biopolymers and hydrogels, used as biomaterials in artificial organs, and in devices for delivery of drugs, peptides and proteins, He has also made significant advances to biomedical transport phenomena, bioadhesion and in rational design of recognitive, responsive and intelligent biomedical devices. He has had numerous interactions with Canadian universities including the University of Alberta and University of Toronto.

NEW INTERNATIONAL FELLOWS 2019

Zhong Lin Wang, Regents' Professor, Hightower Chair, Georgia Institute of Technology

Dr. Wang is nominated for his pioneering and seminal contributions to the discovery and development of nanogenerators for self-powered systems and large-scale blue energy, which represent an unprecedented and innovative technology for harvesting energy from the environment and biological systems, for applications in personal electronics, internet of things, sensor networks, biomedical devices, environmental monitoring and security devices. His innovations also provide a revolutionary approach for harvesting large scale energy from tidal and ocean waves, aimed at solving the future energy needs of the world. He has collaborated with groups at the University of Waterloo, University of Toronto, University of Alberta and Western University in developing such technologies.