

The Canadian
Academy of
Engineering



L'Académie
canadienne
du génie

Communiqué de presse

Cinquante-cinq nouveaux Fellows élus à l'Académie canadienne du génie

Ottawa – (5 juin 2023) – Le président Soheil Asgarpour a annoncé l'élection de quarante-six nouveaux Fellows, de huit nouveaux Fellows internationaux et d'un Fellow honoraire à l'Académie canadienne du génie le 5 juin 2023. La cérémonie d'intronisation est prévue pour le 20 juin 2023 à Victoria, en Colombie-Britannique.

Dr Asgarpour a déclaré : « Au cours des 36 dernières années, les Fellows de l'Académie ont fait preuve de leadership en ingénierie dans les domaines de l'éducation, des infrastructures, de l'innovation, de l'énergie, des transports, et bien d'autres. De nouveaux Fellows ont été sélectionnés pour leurs contributions exceptionnelles à l'ingénierie au Canada et dans le monde, et pour leur service en tant que modèles dans leurs domaines et dans leurs communautés. » Des citations et des photographies pour chacun des nouveaux intronisés suivront.

L'Académie canadienne du génie (ACG) est l'institution nationale par l'intermédiaire de laquelle les personnes qui ont apporté des contributions exceptionnelles au génie au Canada, fournissent des conseils stratégiques sur des questions d'importance critique pour le Canada et les Canadiens. L'ACG est un organisme indépendant, autonome et à but non lucratif créé en 1987. Les Fellows de l'ACG sont nommés et élus par leurs pairs, en raison de leurs réalisations remarquables et de leur longue carrière. Les Fellows de l'Académie canadienne du génie s'engagent à faire en sorte que l'expertise et l'expérience en ingénierie du Canada soient appliquées au profit de tous les Canadiens et les Canadiennes.

L'Académie canadienne de génie travaille en étroite collaboration avec d'autres académies supérieures au Canada et à l'étranger. Elle fait partie des membres fondateurs du Conseil des académies canadiennes, et est un membre du Council of Academies of Engineering and Technological Sciences (CAETS), qui regroupe 31 académies nationales de génie dans le monde entier. L'ACG est également membre du Collectif en faveur des sciences et de la technologie, une association de plus de 20 organisations canadiennes en sciences et en génie, dont le mandat est d'éduquer et d'informer les parlementaires fédéraux, les décideurs et autres dirigeants de l'importance de la recherche et de l'innovation canadiennes pour le développement économique et la société dans son ensemble.

Pour de plus amples renseignements ou des entrevues, veuillez communiquer avec :

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NEW FELLOWS 2023



Laleh Behjat, NSERC Prairie Chair for Women in Science and Engineering, University of Calgary



Laleh Behjat is an innovative researcher, educator, and champion for underrepresented groups in STEM. She has made outstanding contributions to the field of electronic design automation. She works with researchers across fields to break the silos that exist between disciplines, to solve the challenges we face with creativity and innovation. Dr. Behjat is dedicated to educating the next generation of engineers in Canada and strives to make engineering education inclusive. She is an advocate for ethical science and fostering diversity, equity, and inclusivity in the profession.

Richard Berry, Chief Technology Officer – Retired, CelluForce



Dr. Berry has made exceptional contributions in process innovation and chemical process technology throughout his long career in the Canadian pulp and paper industry. His process innovations have been widely adopted by industry to reduce pulping & bleaching costs and environmental impacts. Dr. Berry also led the initiative to develop and commercialize cellulose nanocrystals, resulting in a manufacturing facility that is the first and largest in the world, and that allowed Canada to position itself as a world leader in this new nanotechnology industry. Dr. Berry has 36 patents, 159 peer-reviewed publications, and received 19 industry awards recognizing his work.

Glenn Byczynski, Research & Development Manager, Nematik USA/CANADA



Dr. Byczynski has provided superb engineering leadership within the automotive manufacturing industry in Canada, the United States and Europe. He has successfully invented and implemented novel metal casting technologies in the automotive sector, enabling reduced vehicle mass and improving performance of traditional propulsion and EV powertrains. He has an outstanding record of multiple technical publications, patents, awards, Adjunct Professorships at three Canadian universities, and invited lectures in Canada and internationally. For nearly three decades, Dr. Byczynski has made significant contributions to the Engineering profession, strongly supported engineering co-op programs, and encouraging students to enter STEM careers through his volunteer work.

Lin Cai, Professor, University of Victoria



Dr. Cai is a world-renowned researcher and technology innovator, and an extraordinary educator and mentor, widely recognized for her seminal contributions to network topology control, connectivity theory, and large-scale wireless networking techniques. Her groundbreaking contributions are highly influential in wireless product development and standardization. She is an EIC Fellow, IEEE Fellow, RSC College Member, and NSERC Steacie Fellow, and serves as a Board member of the IEEE Women-in-Engineering and a Vice President of the IEEE Vehicular Technology Society. Her students become entrepreneurs or technical leaders in leading networking companies in Canada and research institutions worldwide.

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Yunxing Cao, Professor, Henan Polytechnic University



Prof. Cao has made major contributions to clean energy and safety engineering research and practice. He is the pioneer to establish the integrated geology and engineering as a solution system to enhance energy production while eliminating safety risks and carbon emissions. He is the innovator and published the first paper on CO₂-fracking that launched this field of research for sustainable energy development. He has established companies to transfer his research to field application that demonstrated his leadership in engineering innovation. He has played active roles in promoting engineering education and research to the public, to communities and throughout his profession.

Zengtao Chen, Professor, University of Alberta



Dr. Chen is an internationally recognized expert and award-winning educator in mechanical engineering, with pioneering contributions to the design and application of lightweight automotive materials, smart materials and structures, and high precision machine parts. His work has been used in the transportation industry and in advanced manufacturing to help reduce greenhouse gas emissions, design high precision CNC machines, and regulate engineering design. He has published over 400 papers and three books. Dr. Chen has trained more than 80 graduate students and post-doctoral fellows, who have become leaders in both academe and industry. He is a Fellow of ASME and CSME.

Shuguang Cui, X.-Q. Deng Presidential Chair Professor, The Chinese University of Hong Kong, Shenzhen



Dr. Shuguang Cui is a world-class engineering researcher with contributions in developing the widely-adopted energy-profiling framework for wireless communication systems, the efficient linear cooperative spectrum sensing algorithm, and the intelligent AI-driven networking mechanism, helping build next-generation environment-friendly information systems. He has established leadership in IEEE with journal Editor-in-Chief, committee chairs, and conference chairs, and in universities as school dean and directors. He is devoted to engineering education with outreach to young kids. He was listed in the Highly Cited Researchers by Thomson Reuters and the World's Most Influential Scientific Minds by ScienceWatch. He is an IEEE Fellow.

Ali Dolatabadi, Professor, University of Toronto



Ali Dolatabadi is a Professor in the Department of Mechanical and Industrial Engineering and Associate Director of the Centre for Advanced Coating Technologies at the University of Toronto. His research on multiphase flows advances our fundamental understanding of sprays for thermal spray processes, as well as droplet dynamics, heat transfer and phase change, for development and characterization of novel functional coatings and surface engineering solutions. Professor Dolatabadi served as President of the Canadian Society for Mechanical Engineering from 2014-2016 and as President of the Engineering Institute of Canada from 2020-2022. He has received multiple awards for his research and teaching.

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George Eleftheriades, Professor of Electrical and Computer Engineering, University of Toronto



Professor George Eleftheriades, of the University of Toronto, is a pioneer in the field of metamaterials and metasurfaces, which are engineered electromagnetic materials and surfaces with unprecedented capabilities. Most notably, he demonstrated how to realize metamaterials using networks of loaded transmission lines. These new materials have found applications in several areas, including wireless communications, radar, super-resolution imaging, security, and defence. Professor Eleftheriades is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and the Royal Society of Canada and has received many of the most prestigious national and international awards in his field.

Janet A. W. Elliott, Distinguished Professor and Canada Research Chair in Thermodynamics, University of Alberta



Dr. Janet A. W. Elliott is a University of Alberta Distinguished Professor recognized as being among the world's leading engineering scientists, known for her profound insight into fundamental and applied thermodynamics. Her creative and elegant integration of mathematics and experimental data has addressed many long-standing problems across a wide array of disciplines in science, engineering, and medicine, particularly in surface science and cryobiology. Her work has expanded thermodynamics to new complexity, new length scales, and new disciplines, has provided some of the most cited works on the osmotic virial equation and statistical rate theory, and has provided leading cryopreservation protocols.

Monica Emelko, Professor and Canada Research Chair in Water Science, Technology & Policy, University of Waterloo



Monica Emelko is the Canada Research Chair in Water Science, Technology & Policy. Her pioneering contributions to drinking water treatment, public health protection, and climate change adaptation support international source water protection guidance and pathogen treatment regulations. Her team was the first cited by IPCC regarding wildfire threats to water treatability. She assembled and leads the ground-breaking, multi-sectoral, pan-Canadian and internationally-partnered *forWater* Network for integrating green and built infrastructure for water security. She provides expert advice to Health Canada, U.S. National Academies, and governments internationally, and has received recognition from peers and governments, including a citation from the Alberta Premier.

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Marcia Friesen, Dean, Price Faculty of Engineering, University of Manitoba



Dr. Marcia Friesen's leadership practice has resulted in new programs that cross disciplinary and professional boundaries. Her work in pathways for newcomer engineers has shaped provincial and national approaches to foreign credentials recognition. She developed one of the first formal graduate credentials in the discipline of engineering education in Canadian universities. Her integrative approach makes EDI and Indigenous perspectives an ongoing dialogue in the activities, policies, curricula, and people at the University of Manitoba. She advances professional governance, accreditation, and EDI in the profession through board service on provincial and national organizations.

Camille Gagnon, Founder and Senior Partner, Innovitech Inc.



A visionary and passionate leader, Camille Gagnon has over 50 years of experience in the fields of innovation and economic development and is known as a rare innovation expert in Quebec and in Canada. As President and CEO at Innovitech, a private firm he founded in 1989, he has left a lasting mark with the ability to mobilize academia, industry and government. Innovitech, through Camille Gagnon's expertise and leadership, has been at the forefront of major urban development projects, managed major research/innovation consortia. Through Innovitech, Camille has mentored, financed and coached 100 startups that have engineering capabilities at their heart.

Ian Gates, Professor, University of Calgary



For his ground-breaking discoveries, insights, and engineering solutions to heavy oil and oil sands recovery energy systems and routes for lowering their environmental impacts, re-imagining the use of heavy oil and oil sands systems for producing clean hydrogen and valuable carbon-based products, training, and mentorship of trainees in the area of energy research, and leadership of energy-related initiatives and efforts to move research to solutions for the benefit of society.

Elizabeth Gillies, Professor and Canada Research Chair in Polymeric Biomaterials, Western University



Elizabeth Gillies is an international leader in the development of new designs to control the degradation of polymers. She developed a new class of polymers that unzip upon stimulation by light, heat, pH, or redox change. These unique polymers are currently being applied to release drugs at specific sites in the body, as traceless inks for 3D printing, and as replacements for conventional non-degradable plastics. She has mentored > 110 trainees, and published 142 papers with > 9600 citations. She received an NSERC EWR Steacie Fellowship, Canada Research Chair, membership in the RSC College, and two Engineering Teaching Awards.

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Kevin Hall, President and Vice-Chancellor, University of Victoria



Kevin Hall is President and Vice-Chancellor of the University of Victoria and an innovative academic leader and civil engineer known for his strong commitment to sustainability, innovation, community engagement, and unwavering belief in equitable access to education, and equity, diversity and inclusion. He has made a global impact putting research into practice by delivering knowledge to industry and community. His academic interests are focused on hydraulic and environmental modelling and water and health in marginalized communities. Kevin has built entrepreneurship and innovation initiatives in Canada and Australia and is a founding board member of the Sydney School of Entrepreneurship.

Kelly Hawboldt, Professor, Process Engineering, Memorial University of Newfoundland and Labrador



Dr. Kelly Hawboldt is internationally recognized as a key contributor to the development of the bioeconomy and is committed to helping Canadians produce, use, and conserve resources while protecting the environment. Her discoveries have improved the methods used for removing contaminants from gas streams, transformed waste material to value added products, and reduced emissions from offshore oil and gas operations. The strength of Dr. Hawboldt's work is her engagement and contributions to the forest, fishery, and mining industries, as well as local and federal governments, who have benefitted from her innovative and integrated approaches to green engineering.

Mina Hoorfar, Dean, Faculty of Engineering and Computer Science, University of Victoria



Dr. Mina Hoorfar is an accomplished academic leader and engineer known for her inspired teaching, award winning research, innovative administrative leadership and championing of equity, diversity and inclusion. Her research in microfluidics and nanotechnology is applied to energy, health and the environment. An outstanding teacher, she has received the EGBC Teaching Excellence Award and has been recognized by Engineers Canada as an Equity Diversity and Inclusion Leader. She has served in senior academic leadership roles including Director, School of Engineering at UBC Okanagan and Dean of Engineering and Computer Science at the University of Victoria.

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Steve Hranilovic, Professor, Vice-Provost and Dean of Graduate Studies, McMaster University



Dr. Steve Hranilovic is a research pioneer in optical wireless communications, an academic innovator and a technology leader developing Canadian-made solutions to bring equitable internet access to Canada's northern, remote, and rural communities. He ranks in the top 2% of researchers worldwide, his research has been applied widely in academia and industry and he is a Fellow of the IEEE and Optica. He led the transformation of engineering education for 6,000 undergraduates, championing experiential project-based curricula. As Vice-Provost and Dean of Graduate Studies, he is responsible for fostering innovation and maintaining a rich learning environment for graduate students across campus.

Mihaiela Isac, Associate Director of the McGill Metals Processing Centre, McGill University



As Associate Director of the McGill Metals Processing Centre, and President and CEO of MetSim Inc., Professor Isac has established an exemplary record of sustained contributions of excellence to the field of Physical Metallurgy. Over a period of forty-five years, she has made major contributions in collaboration with industry to research and development on the metallurgical processing of ferrous and non-ferrous materials, to teaching and training of engineers, and to professional organizations in Canada and overseas. As evidenced by over three hundred publications, numerous invited presentations, patents, and international recognitions, she is clearly an excellent ambassador for the Engineering Profession.

Hossam Kishawy, Dean & Professor, Ontario Tech University



Dr. Hossam Kishawy has made significant contributions to research, education, and academic leadership. He has led the Faculty of Engineering and Applied Science to a significant growth in infrastructure, enrolments, student diversity and research capacity. His research contributions have led to new understanding of surface quality, integrity, and detection of residual stresses particularly for hard turning technology in automotive applications. Dr. Kishawy's development of new nanoparticle-based cooling techniques have led to significant advances of more environmentally friendly and sustainable manufacturing processes.

Baochun Li, Professor, University of Toronto



Prof. Baochun Li is an internationally renowned researcher and technology innovator in multimedia systems, networking, cloud computing, and distributed systems. As the Bell Canada Endowed Chair, he has developed the world's first large-scale deployment of network coding in commercial media streaming systems. Working closely with industry partners such as Bell Canada and Microsoft, his published papers, many of which are highly cited, have attracted over 23000 citations with an H-index of 84. He is an IEEE Fellow, played leadership roles towards automating review assignments in flagship IEEE conferences, and received numerous awards acknowledging his pioneering contributions in network coding systems.

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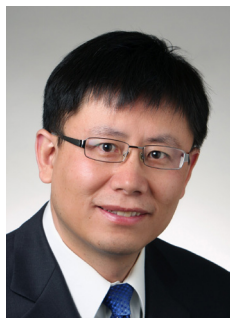


Chenzhong Li, Chang-jiang Chair Professor, The Chinese University of Hong Kong (Shenzhen)



For his outstanding contributions to technology innovation in biomedical devices development for disease Point of Care Testings (POCTs) and treatment, and leadership of global efforts to promote international collaborations and diversity education. He has successfully expanded the basic research and translated scientific breakthroughs into new technology. He is a fellow of the National Academy of Inventors (NAI) and the American Institute for Medical and Biological Engineering (AIMBE). He has established leadership in research communities, serving as the Editor-in-Chief of the journal Biosensors and Bioelectronics, the NAI Society journal Technology and Innovation, and the National Science Foundation program director in the US.

Peter Liu, Professor, Carleton University



Dr. Liu's research has led to over 470 peer-refereed publications and his papers have been cited extensively. He is very active in IEEE technical societies and has played numerous leadership roles. He had extensive collaborations with industry sectors and other researchers around the world. His research results have been adopted, such as to improve healthcare service. Dr. Liu held a Tier-2 Canada Research Chair position and is currently a Professor. He has received numerous prestigious awards and recognitions. He is a licensed member of PEng, a Fellow of EIC and a Fellow of IEEE.

Xinyu Liu, Professor, University of Toronto



Professor Xinyu Liu is a world-renowned innovator who has tackled challenging interdisciplinary problems in microrobotics and microfluidics to create enabling technologies for real societal benefits. His seminal contributions in microrobotic biomanipulation and diagnostic biosensors have significantly advanced the-state-of-the-art and provided practical solutions to in vitro fertilization treatment and point-of-care diagnostics. His technologies have resulted in competitive products (sold in over 20 countries), global commercialization, and real-world impact. He has trained over 110 next-generation engineers and researchers. He was elected Fellow of ASME and CSME in recognition of his academic excellence and exemplary leadership in the profession.

Jun Long, Senior Associate, Syncrude Canada Ltd.



Dr. Long is a world-leading expert in developing innovative technologies for effective recovery of bitumen from Canada's massive oil sand resources. With 24 patents, his step-change inventions, most notably the Secondary Process Aids technology, resulted in revolutionary advances in oil sands processing, creating billions in value and helping secure Canada's energy future by unlocking oil sands resources in a more efficient, sustainable, and environmentally responsible manner. Dr. Long also made substantive contributions to collaborative research and education in engineering through his initiatives and involvement in several NSERC Industry Research Chairs and CRD programs.

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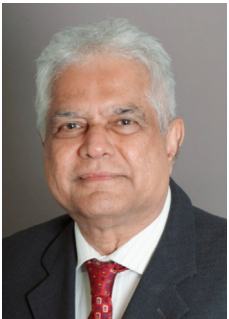


Dominic (Mark) Martinez, Professor, University of British Columbia



Prof. Mark Martinez has made outstanding contributions to the pulp and paper industry, one of Canada's largest manufacturing industries. He has developed new knowledge for improved operations in papermaking and co-invented several new products and processes. He has trained a large number of engineers at the post-graduate level and disseminated knowledge through university teaching and industry courses. He has also played a significant leadership role as director of several university-industry initiatives for the traditional industry as well as the newly emerging bio-products sector. His accomplishments have contributed to the strengthening of a vital pulp and paper industry in Canada.

Arokia Nathan, Bye Fellow and Graduate Tutor, Darwin College, Cambridge, UK



Professor Arokia Nathan is a visionary technologist as reflected in his 600 technical publications, 6 books, and over 150 granted patents. His approach to engineering research and development is broad and comprehensive, encompassing fundamental device science, process development and manufacturing, device and circuit inventions to achieve new systems in large-area and flexible electronics. He was awarded the 2020 IEEE EDS JJ Ebers Award. The impact of his research led to the formation of IGNIS Innovation (Founder), Cambridge Touch Technologies (Co-Founder), ACXEL (Co-Founder), CAM-XT (Co-Founder), ibmetrix (Co-Founder) and VISBAN Networks (Co-Founder) with combined venture capital investment more than US \$100 million.

Ya-Jun Pan, Professor, Dalhousie University



Dr. Ya-Jun Pan is an internationally renowned researcher, distinguished educator, and volunteer leader. She is a Professor at Dalhousie University and has made significant contributions in nonlinear control and cyber physical systems with in-depth applications to intelligent robotics and industrial automation. Dr. Pan has contributed extensively to engineering and professional societies and been recognized with fellowships in EIC, CSME, and ASME, Research Excellence Award, and Humboldt Fellowship. She has provided dedicated leadership in Canadian and international research communities, serving as the Senior Editor, Associate Editors, IES AdCom, conference organizing committees, WiE Chair, VP Atlantic of CSME, and NSERC EG member.

Igor Piore, Professor, University of Ontario Institute of Technology



I. Piore is a leading world expert in nuclear energy and related engineering systems. His contributions to the field are well documented in 535 publications including reputable journal publications (100), publications in refereed proceedings of international conferences (300), 50 chapters, 26 inventions, 11 books, and 2 handbooks he edited. He has been actively involved in heat transfer, thermohydraulics, and developments of Generation-IV reactor concepts. He has trained many students, who are now practicing engineers in these fields. Also, he is a Fellow of ASME, CSME, EIC, Foreign Fellow of National Academy of Sciences of Ukraine, P.Eng. (Ontario), and Founding Editor - Editor-in-Chief of ASME Journal of Nuclear Engineering and Radiation Science.

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Hesham Rakha, Samuel Reynolds Pritchard Professor of Engineering, Virginia Tech



Professor Hesham Rakha conducts leading-edge research at Virginia Tech aimed at reducing traffic congestion, reducing transportation system energy consumption and greenhouse gas emissions, and enhancing the safety of the transportation system. His achievements include the establishment and leadership of the Centre for Sustainable Mobility at the Virginia Tech Transportation Institute, the continuous development of the INTEGRATION agent-based multi-modal transportation software, and the invention of numerous energy and emission modeling tools. Rakha's record includes service to IEEE, SAE, TRB, and ASCE. He is a fellow of IEEE and ASCE; received numerous awards; and serves on the editorial boards of numerous journals.

Carolyn Ren, Professor of Mechanical and Mechatronics Engineering, University of Waterloo



Carolyn Ren is renowned for her pioneering contributions to droplet and air microfluidics innovation. Her physical and theoretical models, as well as her design and optimization tools, have enabled new, integrated Lab-on-a-Chip devices for life sciences, environmental monitoring, and material synthesis applications. She is forging a new frontier in soft, wearable assistive robotics technologies development, enabled by air microfluidics techniques. These lightweight, tetherless innovations are transforming prosthesis design, and treatment of lymphedema, edema, and arthritis. She has co-founded four start-up companies to commercialize her team's inventions, is a Fellow of the CSME, and a Member of the RSC College.

Janaka Ruwanpura, Professor, Vice-Provost and Associate Vice-President Research (International), University of Calgary



Janaka Ruwanpura, introduced as a Top 25 Canadian Immigrant by the Prime Minister in 2022, is an internationally-renowned award-winning scholar, leader, consultant, and entrepreneur in construction automation and productivity. Janaka, former Canada Research Chair in Project Management Systems, now serves as the University of Calgary's Vice-Provost International and Associate Vice-President Research. He is also the President of JYR Consultants and i-Booth, Inc., A member of the US National Academy of Construction and a fellow of the Canadian Society for Civil Engineering, his outstanding impact on construction engineering education, research, and practice has been recognized by organizations across Canada and overseas.

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Karen Savage, President, Horizon Engineering Inc (a RAMCompany)



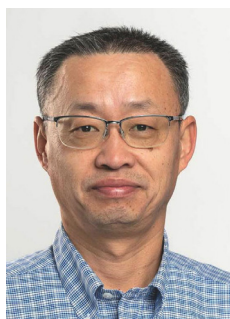
A passionate professional, Karen's extensive and unrelenting servant leadership to the engineering profession is evident through the trailblazing success of her female-led consulting company, numerous awards and distinctions from engineering and business organizations and her contributions to professional guidelines, policy and education with ACEC-BC, BC Housing, Engineers and Geoscientists BC, Engineers Canada, and government, community and academic organizations. Beginning early in her career and continuing today, Karen has catalyzed change in the engineering community to the betterment of technical practice, and for meaningful culture change to support diverse participation in the profession.

Abdallah Shami, Professor, Department of Electrical and Computer Engineering, Western University



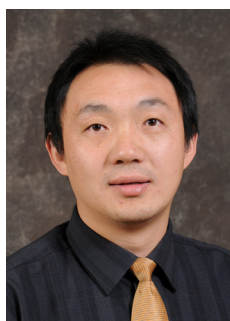
Dr. Shami is a renowned global leader in the fields of telecommunications network planning, orchestration, and optimization, as well as smart cyber-physical systems. His pioneering contributions to these areas have been integrated into the products of major international companies. Dr. Shami is also an outstanding academic leader and educator, serving as the Acting Associate Dean Research and led the development of the pioneering interdisciplinary Artificial Intelligence System Engineering (AISE) program at Western Engineering. He has trained over 65 graduate students and has authored over 250 publications, which have received over 9,000 citations. He is a Fellow of the Engineering Institute of Canada.

Jinjun Shan, Professor and Chair, York University



Dr. Shan is a visionary leader, an exceptional educator and a prominent scholar in space engineering. He is internationally recognized for his significant contributions to many national and international space missions, and enabling technologies through his over 200 publications, many of which have been highly influential and widely cited. His accomplishments are well-recognized through his exceptional leadership and services in local community and professional organizations. Dr. Shan is a Fellow of Engineering Institute of Canada (EIC) and a Fellow of American Astronautical Society (AAS), also the recipient of numerous prestigious awards.

Yang Shi, Professor, University of Victoria



As Fellow of Engineering Institute of Canada, IEEE, ASME, P.Eng., Dr. Shi is an international authority on networked and distributed control, model predictive control, and cyber-physical systems. His pioneering work, with a seminal impact from the advancement of scientific knowledge to industrial innovation, has been acknowledged with numerous awards, including Clarivate-Analytics Highly Cited Researcher (2014-2022) and the 2023 CSME Mechatronics Medal. His research has been patented and applied by industry and has led to commercialization. He serves as IEEE IES Vice-President and Co-Editor-in-Chief of two premium IEEE journals. He has received outstanding teaching awards and trained over 170 next-generation researchers/engineers.

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Gregory Smallwood, Principal Research Officer, National Research Council of Canada



Dr. Greg Smallwood's foundational work in aerosol measurement has contributed to the improvement of worldwide air quality and health. The method his team developed for measuring non-volatile particulate matter in aircraft exhaust led to the standardization of measurement of black carbon particles. His persistence also ensured the adoption of improved air quality regulatory changes for aircraft and may also help set new marine emissions standards. Furthermore, his particulate measurement expertise helped to rapidly develop particulate filtration efficiency testing, meeting Canada's need for respirator evaluation during the COVID pandemic. Dr. Smallwood's innovation, mentorship, and collaborative leadership continue to shape Canadian engineering.

Marilyn Spink, Independent Non-Executive Board Director, Avalon Advanced Materials & Star Diamond Corporation



As an expert in metallurgical and mining processes, Marilyn Spink has managed the successful delivery of complex mine development projects throughout the world ranging in value from \$US500M to 9B. In recognition of her illustrious career, in 2020, Marilyn was bestowed the prestigious United Kingdom WIM 100 Global Inspirational Women in Mining. In 2018, she was named a Canadian Institute of Mining Distinguished Lecturer and in 2017, the inaugural Ursula Franklin Memorial Lecturer for the University of Toronto. Marilyn has also served her profession as an Ontario Lieutenant Governor Appointee and Vice President to Professional Engineers Ontario Council.

Uttandaraman Sundararaj, Professor and Schulich Industry Research Chair University of Calgary



Professor Uttandaraman Sundararaj is a highly-esteemed researcher, educator and leader in polymer multiphase materials, polymer processing and nanotechnology. He is a Schulich Industry Research Chair, holds several patents and has over 250 high-impact refereed publications with 16,000+ citations. Dr. Sundararaj has received many national and international awards and fellowships and was named an "Established Leader in Chemical Engineering" by the Canadian Society for Chemical Engineering (CSCHE). Prof. Sundararaj was awarded Engineers Canada Medal for Distinction in Engineering Education and received a 3M Teaching Fellowship, Canada's highest post-secondary teaching honor. He served in several leadership positions including being President of CSCHE.

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David Tennenhouse, Strategic Advisor and Independent Researcher



David is passionate about innovation and has led pioneering research enabling software-defined networking and software radio. He has worked in academia, as a faculty member at MIT; in government, at DARPA; in industry at Intel, Amazon/A9.com, Microsoft and VMware; and as a partner at New Venture Partners and co-founder of Vericom Systems Ltd. Dr. Tennenhouse has championed a wide range of technologies, including networking, distributed computing, blockchain/digital assets, computer architecture, storage, machine learning, robotics and nano/bio-technology. David holds a BSc and MSc in Electrical Engineering from the University of Toronto and obtained his PhD at the University of Cambridge.

Guy van Uytven, Consultant, Guy Van Uytven Consultant Inc.



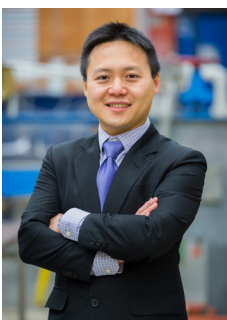
Guy van Uytven is a leader in high voltage power transmission system planning, design and construction. As a consulting engineer, he has been instrumental in the provision of low cost electricity to citizens of 19 less developed countries, thereby improving living standards and contributing to global energy equity. He has ensured the sustainability of the electrical power infrastructure by establishing training programs for local engineers. Guy served as Vice-President Power, Eastern Region for Monenco. He is an advocate for a North American macro grid to enhance the resilience of electrical supply and accelerate the transition to carbon free power.

Ning Yan, Tier 1 Canada Research Chair, University of Toronto



The Tier 1 Canada Research Chair in Sustainable Bioproducts at the University of Toronto, Dr. Ning Yan is an internationally renowned expert in converting biomass materials into bio-based chemicals and functional materials. She pioneered numerous bio-based platform technologies for using renewable biomaterials to produce sustainable bio-based adhesives, resins, polyols, foams, and other industrial products. Dr. Yan's has more than 200 peer-reviewed journal publications and 8 patents. She has collaborated with academic, government and industry research partners around the world. She is an elected fellow of the Engineering Institute of Canada and the International Academy of Wood Science.

Tony Yang, Professor, The University of British Columbia



Prof. Yang is a preeminent leader in structural and earthquake engineering, acclaimed for his ground-breaking innovation in performance-based design, structural simulation and testing, robotic inspection and construction, and high performance, carbon-neutral and resilient infrastructure. He has led many large research projects, collaborated with many leading engineering firms worldwide and made significant impacts to the national and international codes. His exceptional leadership and mentorship have inspired and trained numerous highly qualified personnel. His outstanding achievements earned him numerous coveted national and international awards. His legacy as a visionary and influential researcher will continue to shape the future of engineering and infrastructure.

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Osmar Zaiane, Professor, University of Alberta



Dr. Osmar Zaiane is Professor and Canada CIFAR AI Chair at the University of Alberta, and is a world-renowned researcher with high impact in artificial intelligence and data mining. Dr. Zaiane is actively involved in the community as an organizer and as an established and respected researcher. He demonstrated tremendous leadership directing the Alberta Machine Intelligence Institute for more than 10 years, steering the research institute to international recognition. He developed data mining engineering systems advancing our knowledge. His work and contributions, already influential in the AI ecosystem, will continue creating social and economic advantages for Canada and beyond.

Joe Zhou, Vice-President, Engineering Governance & Research Programs, Chief Engineer, TC Energy



Dr. Zhou has played a prominent role in developing and introducing new high-impact technologies to the pipeline industry through vision casting, collaboration, advocacy, and research. He has accomplished this through outstanding leadership of international collaborative organizations, including his service as Chair of the Technical Committee for the CSA Pipeline Standard. He has assembled and led large engineering teams that have achieved outstanding performance by applying new technology to mega infrastructure projects and systems. He has been recognized with numerous awards including the CSA Award of Merit, three ASME Global Pipeline Awards, and TC Energy CEO Safety Awards.

NEW INTERNATIONAL FELLOWS 2023



Jason Burdick, Bowman Endowed Professor, University of Colorado Boulder



For seminal contributions to the development and understanding of the formation and structure of biodegradable materials towards tissue regeneration and drug delivery therapies. For application of engineering principles in the development of innovative biomaterial technologies that have transformed human health including the synthesis of elastomers for a new class of approved vascular sealants, the identification of hydrogels that enable controlled release of microRNA for treatment of heart attacks, and the advancement of novel hydrogels and sealants to treat cartilage damage. For transformative contributions to the development of self-healing and shear-thinning hydrogels and lithographic approaches that have advanced 3D printing.

Liang-Shih Fan, Distinguished University Professor, C. John Easton Professor in Engineering, and Professor of Chemical and Biomolecular Engineering, The Ohio State University



L.-S. Fan influences the field of multiphase reaction engineering through his research (6 authored books, 470 journal-articles) and invention (70 U.S. patents), transformed to 8 demonstrated or commercialized clean energy processes and an Electrical-Capacitance-Volume-Tomography flow imaging device. His work has helped strengthen Canada's positions in clean energy through engineer training and technology transfer. Fan's 90 professional awards include highest honors in research from AIChE, ACS and major conferences, a top chemical engineering educator in United States, and professional leadership service recognition. Fan is AIChE's one of the "One Hundred Engineers in the Modern Era", and Fellow of National Academies of 6 countries.

Jinlong Gong, Professor, Tianjin University



Jinlong Gong holds a Peiyang Chair Professorship at Tianjin University. As an internationally renowned chemical engineer, he is recognized for his pioneering contributions to the development of sustainable chemical technologies and for educating the next generation of scholars. He has advanced catalytic technologies such as dehydrogenation of alkanes and photoelectrochemical solar devices. He has been an active promoter for global academic exchange.

NEW INTERNATIONAL FELLOWS 2023

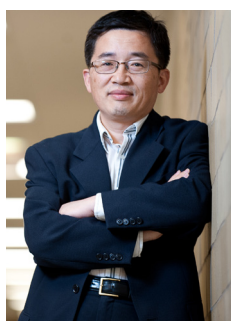


Yun Hang Hu, Charles and Carroll McArthur Professor, Michigan Technological University



Prof. Yun Hang Hu made seminal contributions to advanced catalysts, novel materials and innovative processes for clean energy and renewable energy. His collaborations with Canadian universities created a new direction not only for heterogeneous catalysis but also for the utilization of solar energy and greenhouse gases, which is truly important for Canada. As a world-renowned leading expert in energy materials and processes, he was recognized with numerous prestigious honors and awards including election to Fellow by six major societies (AAAS, ACS, APS, AIChE, ASM International, and RSC) and the Rudolf Erren Award from the International Association for Hydrogen Energy.

Yonggang Huang, Jan and Marcia Achenbach Professor, Northwestern University



Huang is a scientific creator and pioneer of a transformative technology – stretchable electronics. He found how pre-strain with shape control can endow brittle inorganic semiconductors (e.g., silicon) with enormous stretchability (>150% strain), extremely low stiffness matching that of soft biomaterials, and conformability to arbitrary curvilinear surfaces. His theories constitute the scientific foundation of new technology such as stretchable batteries, sensors, circuits, radios and many commercial biomedical devices transforming medicine.

Xiaonian Li, President, Zhejiang University of Technology



Professor Xiaonian Li has made major contributions to Chemical Catalysis. His original work has helped transform the catalysts synthesized in laboratory to industrial settings, and his catalysts have been widely applied in global industries. Li has also made outstanding contributions to the engineering profession through his leadership as a university president and his dedication to training the next generation of great young engineers with international visions. His innovation is evidenced by 500+ publications and 60+ patents. He has led major international academic exchange programs that directly benefited hundreds of students from both Canada and China.

NEW INTERNATIONAL FELLOWS 2023



Xueqing Qiu, Professor and President, Guangdong University of Technology



Professor Qiu is a world-leading expert in biomass utilization and green chemical engineering. His original contributions to molecular structure modulation has enabled the transformation of lignin from massive pulping and biorefinery waste into green fine chemical products and functional materials, generating considerable economic benefits while significantly strengthening sustainability. He has 400+ journal papers and holds 150+ patents. Through 15-year presidency in two major Chinese engineering universities, he has implemented innovative competency-based engineering training programs to enhance engineering education. He also promoted international cooperation with worldwide universities including 10+ Canadian universities to cultivate the next generation of great young engineers.

Armistead Russell, Howard T. Tellepsen Chair and Regents' Professor, Georgia Tech



Professor Russell's ground-breaking applied science and engineering research has made profound impacts on air quality policies. His work is featured in multiple US National Academy reports. His key scientific advances set the foundation for air quality policies and modeling approaches now adopted globally. His award-winning research relates pollutants and health that has led to our important understanding of clean air in health. Policies driven by his work have directly benefited the world including Canada from the adoption of effective controls that decreases locally-generated and long range transport of pollutants. He is a renown educator who trains environmental talents including Canadian.

NEW HONORARY FELLOW 2023



Rosa Galvez, Independent Senator, Senate of Canada & Associate Professor Université Laval



Rosa Galvez, originally from Peru, is one of Canada's leading experts in pollution control and its effect on human health. She has a Ph.D. in Environmental Engineering from McGill University and has been a professor at Université Laval in Québec Québec City since 1994, heading the Civil and Water Engineering Department from 2010 to 2016. Dr. Galvez was appointed to the Senate of Canada as an independent senator for Québec on December 6, 2016.

Senator Galvez specializes in water and soil decontamination, waste management and residues, and environmental impact and risk assessment. Throughout her career, she has been requested by private, governmental and community organisations to offer expert advice. She has advised an important number of international organisations including on Canada-US and Quebec-Vermont agreements regarding the protection of the Great Lakes, the St. Lawrence River and Lake Champlain. She also conducted an important study on the catastrophic oil spill at Lac-Mégantic, Québec. Senator Galvez is a member of the Ordre des ingénieurs du Québec and a Fellow of the Canadian Society for Civil Engineering and of Engineers Canada. Her research has led her around the world to countries such as France, Italy, Belgium, Japan, and China.

At the Senate, she is Chair of the Standing Senate Committee on Energy, the Environment and Natural Resources and is a member of the Standing Senate Committee on National Finance. She is also President of the ParlAmericas' Parliamentary Network on Climate Change.

Senator Galvez has received numerous awards including the Top 25 Women of Influence 2023, the 2022 Ecological Society of America (ESA) Regional Policy Award and the 2021 Clean50 Award for her parliamentary work on environmental policy. She has participated in COP25, COP26 and COP27 as GLOBLE Legislators and Inter-Parliamentary Union panelist advocating for legislative action requiring financial activities to align with and support climate commitments.

In March 2022, she introduced Bill S-243, the Climate-Aligned Finance Act, a piece of legislation to align the activities of federal financial institutions and federally regulated entities with Canada's climate commitments. She was sponsor in the Senate of the Canadian Net-Zero Emissions Accountability Act which was adopted in June 2021.