The Canadian Academy of Engineering

L'Académie canadienne du génie

Media Release

Fifty-seven new Fellows elected into the Canadian Academy of Engineering

Ottawa – (15 May 2025) – President Catherine Karakatsanis announced the election of fifty new Fellows and seven new International Fellows into the Canadian Academy of Engineering on May 15, 2025. The announcement is made in conjunction with the Academy's 2025 Annual General Meeting which was held by video conference. The Induction Ceremony is scheduled for May 27, 2025, in Montréal, Québec.

Ms. Karakatsanis commented: "I am delighted to welcome the new Fellows to the Academy whose impressive accomplishments and leadership in their respective fields have significantly advanced engineering in both Canada and around the world. Their outstanding contributions and dedication to excellence serve as an inspiration to us all." Citations for each of the new inductees follow.

The Canadian Academy of Engineering (CAE) is the national institution through which individuals, who have made outstanding contributions to engineering in Canada, provide strategic advice on matters of critical importance to Canada and to Canadians. The CAE is an independent, self-governing, and non-profit organization established in 1987. Fellows of the CAE are nominated and elected by their peers, in view of their distinguished achievements and career-long service. Fellows of the Canadian Academy of Engineering are committed to ensuring that Canada's engineering expertise and experience are applied to the benefit of all Canadians.

The Canadian Academy of Engineering works in close cooperation with other senior academies in Canada and internationally. The CAE is a founding member of the Council of Canadian Academies (CCA), and a member of the International Council of Academies of Engineering and Technological Sciences (CAETS), which includes 31 national engineering academies around the world. The CAE is also a member of the Partnership Group for Science and Engineering (PAGSE), an association of more than 20 Canadian organizations in science and engineering, whose mandate is to educate and inform federal Parliamentarians, decision makers and other leaders of the importance and significance of Canadian research and innovation to economic development, and society as a whole.

For additional information or interviews, please contact:

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NEW FELLOWS 2025

Suhayya (Sue) Abu-Hakima, Co-Founder/CEO, Alstari Corporation

Dr. Suhayya Abu-Hakima is a serial entrepreneur in Artificial Intelligence who has advanced the field over a 40 year period. She has hundreds of published papers and speeches about AI, security, messaging and entrepreneurship. She published a lessons learned book in 2024 about her two AI startups and two successful exits to NASDAQ companies. Her 48 patents are cited by Google Scholar over 2700 times by companies like Microsoft, Apple, Google, IBM, Ford, and Blackberry. She has won numerous personal and company awards for her 3 startups. She is vested in the order of Ontario for her work in innovation.

Éric Baril, Directeur général, Centre de recherche sur l'automobile et les transports de surface, Conseil national de recherches Canada

Dr. Éric Baril is an influential leader who has played a critical role in advancing Canadian innovation. Currently Director General of the Automotive and Surface Transportation Research Centre at the National Research Council of Canada, he leads 300 engineers and scientists commercializing leading-edge manufacturing and transportation technologies. He has been a catalyst for the progression of next-generation technologies including galvanized steels and magnesium alloys for the automotive industry, materials and processes for batteries and electric motors, and titanium foam for medical devices. His innovative thinking, inclusive leadership and passion for applied engineering have transformed the transportation and manufacturing industries.

Aimy Bazylak, Professor, Dept. of Mechanical and Industrial Engineering, University of Toronto

As Canada Research Chair in Clean Energy at the University of Toronto, Aimy Bazylak is working to advance fuel cells and electrolyzers for clean energy production and storage. She has partnered with leading automotive and energy companies to develop next-generation fuel cells and electrolyzers for zero greenhouse gas emitting power. Professor Bazylak has served as Director of UofT's Institute for Sustainable Energy and in several leadership roles in her research community. She is a Fellow of the Canadian Society for Mechanical Engineering, the American Society of Mechanical Engineers, and the Engineering Institute of Canada, and has received several research awards.

Kankar Bhattacharya, Professor & Department Chair, Department of Electrical & Computer Engineering, University of Waterloo

Kankar Bhattacharya is recognized as a leader in the field of power system operations, economics, planning, electricity market operational and auction models, reactive power ancillary services and demand response provisions. His innovations opened the gateway for power system and electricity market operators to understand new concepts of energy trading, and ancillary services procurement and pricing. His work focuses on economic and technical aspects of generation, transmission and distribution systems, in regulated, deregulated, and smart grid environments. Bhattacharya is a Fellow of the IEEE, a Distinguished Member of CIGRE and recipient of IEEE Canada P. D. Ziogas Electric Power Medal.

Satinder Kaur Brar, Professor and James and Joanne Love Chair in Environmental Engineering, Department of Civil Engineering, York University

Satinder Kaur Brar is an internationally recognized environmental engineer, producing cutting-edge sustainable technologies for global health and environmental safety. She has pioneered innovative approaches in environmental engineering, bridging green chemistry and biotechnology. She has charted new directions in sustainable production and reusing bioproducts, giving new life to wastes by recycling them into industrial processes or back to the Earth. Using interdisciplinary evidence, Brar's groundbreaking work has fostered the value-addition of wastes and simultaneous decontamination in Canada and abroad, emphasizing the circular economy. She is the James and Joanne Love Chair in Environmental Engineering at Lassonde School of Engineering, York University.

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Steven Bryant, Schulich School of Engineering Research Chair in Materials Engineering, Dept. Of Chemical and Petroleum Engineering, University of Calgary

Dr. Steven Bryant's innovations in engineering, geoscience and materials science reduce and even reverse the environmental impacts of fossil fuels. His breakthroughs in carbon capture and storage remediate existing climate issues and prevent future problems, while his transdisciplinary approach gathers perspectives from the humanities, law, business, and communities, ensuring socially responsible development that considers the values of the people directly impacted by it. Industries, universities, and governments around the world seek his counsel on technical and policy solutions to combat the climate crisis. He commercializes his innovations for real-world impact and leads national efforts to help others do the same.

Carol Ann Budd, Wealth Advisor, Woodland Wealth

Dr. Carol Ann Budd is an exemplary advocate for Indigenous persons in engineering and more broadly for education of Indigenous persons in STEM. Her engineering innovation has led to a top-place finish in the Canadian Engineering Design Competition and to the development of novel airbag technology that has been adopted worldwide. Dr. Budd has dedicated her career to advancing Indigenous contributions in engineering through leadership of the Canadian Aboriginal Science and Technology Society (CASTS), the Indigenous Futures in Engineering initiative at Queen's, Indigenous Council at Queen's University, and the new Kingston Native Centre and Language Nest.

Fabrizio Carinelli, President, CANA Construction

Fabrizio Carinelli has exhibited outstanding leadership and innovation in the construction industry for over three decades. He has successfully overseen numerous projects benefiting our community, including those in healthcare, education, office spaces, sports facilities, and cultural venues, all while upholding the highest standards of ethics, quality, and safety. In 2023, the Calgary Construction Association honoured him with the Ted Walden Award, recognizing his extraordinary commitment and dedication to positively impacting the construction sector. Fabrizio remains actively involved with both the Calgary Construction Association and the Canadian Construction Association, continuing to contribute towards building a better community through his professional endeavours.

Richard Chalaturnyk, Professor, Dept. of Civil and Environmental Engineering, University of Alberta

Dr. Rick Chalaturnyk's renowned contributions in subsurface assurance for energy projects focus on well integrity, CO2 storage, and risk assessments to support global climate and energy goals. A leader in major international initiatives, his work shapes global best practices in carbon capture and storage (CCS). Dr. Chalaturnyk chaired the committee that developed the world's first CO2 storage standard (CSA Z741) and contributed to Alberta's CCS regulatory framework. Dr. Chalaturnyk is a distinguished researcher, entrepreneur, and SPE Distinguished Lecturer, attracting over $25M in research funding and leading the development of innovative GeoInnovation Environments at the University of Alberta.

Julian Zhishen Cheng, Professor, School of Engineering, University of British Columbia

For pioneering contributions to optical wireless communication technologies, transformative leadership in engineering education for Interior BC, and dedicated service to the advancement of IEEE and Canadian engineering societies

Lee Chou, Professor, Department of Restorative Sciences & Biomaterials, Boston University

Professor Chou is a renowned educator, clinician and expert in biomedical engineering, translational medicine and oral-maxillofacial medicine. He pioneered the field of molecular biocompatibility of biomaterials, the first biomimetically engineered scaffold for bone tissue engineering, the first epitheliogenic materials for wound healing, the first 3D printer for tissue-engineering, and the first head and neck PET/CT scanners. His innovations have improved/saved tens of millions of lives. He chaired Clinical Research Committee of American Academy of Oral Medicine. He was the sole recipient of the 2002 Metcalf Cup & Prize, Boston University's most prestigious teaching award, chosen from over 3,000 professors university-wide.

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Paul Chow, Professor Emeritus, Dept. of Electrical and Computer Engineering, University of Toronto

A professor emeritus at the University of Toronto, Paul Chow has performed ground-breaking research on the use of field-programmable gate arrays (FPGAs) for reconfigurable computing and their applications in fields from biomedicine to finance. He has also developed and taught innovative courses on integrated chip design and is the co-founder of two start-up companies based on his research. Professor Chow served on the Board of CMC Microsystems for decades and was a leader in their strategic planning, as well as the creation of several research networks. He is a Fellow of the IEEE and the Engineering Institute of Canada.

Constantin Christopoulos, Professor, Dept. of Civil and Mineral Engineering, University of Toronto

Constantin Christopoulos' research at the University of Toronto has earned him international recognition for pioneering work in earthquake engineering. He has led the development of several technologies to enhance the seismic resilience of structures and thus minimize the impact of natural disasters on our infrastructure. Professor Christopoulos has co-founded two successful start-up companies and is a named inventor on more than 40 international patents. He is the author of two textbooks that are used in undergraduate and graduate courses in universities worldwide and has consulted on the implementation of advanced seismic protection technologies on projects around the world.

Maud Cohen, Directrice générale, Polytechnique Montréal

Gestionnaire chevronnée appréciée de tous, Maud Cohen a un parcours professionnel remarquable. Après avoir dirigé des projets d'envergure au Canada, aux États-Unis et en Europe au début de sa carrière, elle est élue présidente de l'Ordre des ingénieurs du Québec. Après trois mandats, elle s'implique en politique, puis devient présidente-directrice générale de la Fondation CHU Sainte-Justine de 2014 à 2022. Férue de sciences et engagée en faveur de la relève et de la place des femmes en science, elle devient, en 2023, la première femme nommée à la direction de Polytechnique Montréal — 150 ans après sa création.

Mark Daymond, Professor, Department of Mechanical and Materials Engineering, Queen's University

Dr. Daymond holds a Canada Research Chair in Mechanics of Materials and leads the Nuclear Materials Group at Queen's University, where his work supports the safe, economic operation of CANDU nuclear reactors. He has carried out ground-breaking research in several fields, including design and development of diffraction instruments for engineering applications, combining crystal plasticity modelling with diffraction data, and developing new capabilities emulating radiation damage in nuclear reactors by ion irradiation. He has published over 350 papers and trained more than 55 graduate students and post-doctoral fellows, many of whom have gone on to key roles in industry or academia.

Elena Di Martino, Professor, Department of Biomedical Engineering, University of Calgary

Professor Elena Di Martino, University of Calgary, and cofounder of ViTAA Medical Solutions is a world-renowned researcher/engineer/entrepreneur. A prolific author of high-impact publications and 10 patents, her research focuses on understanding the biological processes that lead healthy heart tissue to become diseased—with the goal of creating a new generation of technological and bioengineering tools for improved diagnosis and personalized therapies. As an academic leader, she has been Director of the University's Centre for Bioengineering Research and Education, Director of the Schulich School of Engineering's Solutions for Health Research, and Chair of the Department of Biomedical Engineering's EDI+ Committee.

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Abdulhakem Elezzabi, Professor, Dept. of Electrical and Computer Engineering, University of Alberta

Professor Elezzabi has made pioneering contributions to photonics, particularly in ultrafast optical devices for imaging, sensing, and beyond 6G communication. His ground-breaking work on terahertz technology unlocked new possibilities in quantum computing, and his innovations in spinplasmonics, smart windows, and femtosecond laser nanosurgery have revolutionized many technological fields. He has significantly impacted the engineering profession through technology transfer to Canadian industry, teaching and mentoring, organizing international conferences, leading industry-funded research, and founding multiple successful start-ups. His leadership in training future engineers and fostering innovation positions him as a prominent figure in advancing photonics and engineering.

Eli Fathi, Chair of the Board, MindBridge AI

Eli's discipline for hard work with integrity and caring attitude, has created a meaningful impact on the lives of others, making the world a better place. He is recognized as a leader of innovative technology across Canada and internationally. His 2022 Order of Canada citation is a testament to his impact: "Eli Fathi is a trailblazer in innovative technology. He is the co-founder of MindBridge Analytics, which developed the world's first AI machine learning based auditing tool in enabling financial professionals uncover fraud and errors in data. This mentor to future entrepreneurs has also served various sector boards and committees".

Philip Ferguson, Associate Professor, Price Faculty of Engineering, University of Manitoba

FERGUSON, Philip A., PhD (MIT), P.Eng (he/him) Dr. Ferguson is an internationally recognized aerospace engineer and researcher who has developed aerospace control and manufacturing technologies for 25+ active aerospace products and missions ranging from space robotics to satellites and drones. His important contributions have enabled small space systems and drones to point payloads with ten times more accuracy. His research focuses on aerospace technologies that improve system confidence, enabling widespread adoption by industry, government, academia, and communities. His goal is to make aerospace remote sensing technologies more accessible to Arctic communities as climate change alters their traditional way of life.

Jim Gilliland, Director, Engineering Services, Williams Engineering

Jim, Director of Engineering Services at Williams Engineering Canada (WEC), brings over 25 years in building design, focusing on sustainable infrastructure that meets immediate needs and community visions. He emphasizes stakeholder engagement to achieve inclusive solutions, guiding teams to consider diverse perspectives in design. His projects span Canada, from Vancouver Island to the Arctic, tackling unique environmental challenges with resilient designs suited for local conditions. Jim's innovations include designing buildings to resist progressive collapse and addressing Arctic infrastructure issues due to melting permafrost. His roles with CSCE, APEGA, and academic partnerships exemplify his commitment to professional standards and sustainable development.

Doris Hiam-Galvez, Senior Advisor, Metals, Hatch

Doris Hiam-Galvez is an incredible trailblazer and transformative leader in engineering and the metals and mining sectors. Her groundbreaking "Designing Sustainable Prosperity" (DSP) approach redefines mining by aligning resource extraction with environmental stewardship and long-term community prosperity. With decades of global experience, Doris pioneered innovative solutions to drive business growth in extraordinary ways - by minimizing environmental impacts, accelerating project timelines, and fostering trust amongst stakeholders. Her leadership, most-notably at Hatch, and her influential role at global industry forums, demonstrate her commitment to advancing sustainable practices, making her an exemplary candidate for fellowship in the Canadian Academy of Engineering.

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Dominic Ho, Professor, Dept. of Electrical Engineering and Computer Science, University of Missouri

Prof. Dominic Ho is a renowned researcher, inventor and leader in statistical signal processing and wireless communications. His research results in target localization set a benchmark for other researchers and are employed in vehicle-mounted landmine localization, in-home elderly health care, environmental monitors, etc., used all over the world. His patented technologies are part of the wireless gateway products and geolocation equipment sold worldwide. For nearly two decades, Prof. Ho sat on the UN committee setting standards in international wireless communications. He was also on the editorial board of several prestigious international technical journals.

Ming Hou, Principal Scientist, Defence Research and Development Canada, Department of National Defence, Canada

Dr. Ming Hou is a Principal Defence Scientist within DND Canada. He is a world-renowned expert and authority in human-artificial intelligence (AI) interactions, autonomous systems, and human-autonomy teaming (HAT). He has made seminal contributions to systems engineering with evolutional interaction-centered design (ICD) theory, methodology, and applications in AI-enabled socio-technical intelligent adaptive systems (IASs). The paradigm-shift ICD approach is incremental to the development of international academic IAS programs, innovative industrial IAS technologies, international HAT standards, and government and United Nations' AI and autonomy policy and regulation frameworks. These remarkable contributions have made outstanding and lasting impacts on engineering practice and humanity.

Jimmy Huang, Tier 1 York Research Chair in Big Data Analytics, School of Information Technology, York University

Dr. Huang is a world-renowned researcher and an extraordinary educator. He is internationally respected for his seminal contributions to theoretical foundations of information retrieval that draw on probabilistic modelling and machine learning such as incorporating semantic matching to BM25 probabilistic model, as well as to the demonstration of their applications in industry and his exemplary leadership, firmly establishing him as a global leader in information retrieval, AI and NLP. His proposed task-oriented and context-sensitive information retrieval research brought remarkable impacts and led to some promising research (e.g.,ChatGPT). He is an IEEE Fellow and has 360+ highly reputable publications in top-tier venues.

Lesley James, Professor, Dept. of Process Engineering, Memorial University of Newfoundland

Dr. Lesley James is globally recognized for her knowledge of subsurface energy and the use of innovative enhanced oil recovery techniques. Working closely with industry and government, Dr. James has increased the efficiency, sustainably, and safe production of Canada's offshore oil and gas. Her state-of-the-art laboratory was recently expanded with capabilities for carbon capture research making it one of few such facilities in North America. Currently, Dr. James and a team of collaborators from across eastern Canada are leading efforts to reduce greenhouse gas emissions by evaluating the safe geological storage of CO2 offshore.

Shesha Jayaram, Professor, Director of High Voltage Engineering Laboratory, Dept. of Electrical and Computer Engineering, University of Waterloo

Dr. Shesha Jayaram has built an extraordinarily successful career rooted in research and teaching excellence and technological innovation. Recognized worldwide as an expert in the field, she has made significant research contributions to the applications of high voltage engineering and the integrity of electrical insulation in power grids. She has delivered over 100 invited presentations around the globe and has over 350 publications to her credit; ~100 published in well-recognized journals, most in IEEE Transactions. Her research has resulted in technology transfer to industries, and her innovations are patented in Canada, USA, Brazil, Japan, and Europe.

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Gord Johnston, President and CEO, Stantec

Gord Johnston's leadership reflects his vision and integrity which is not only an asset in his CEO role, but a value to the CAE. His contributions to the community, passion for industry, and pride in being an engineer are reflected in his commitment to the values of the engineering profession. Gord is highly influential through organizational participation and global advocacy. He drives transformative growth, champions sustainable practices, and fosters diversity and inclusivity. His laudable characteristics align with CAE's vision. Bestowing a fellowship upon Gord would not only recognize his contributions, but inspire continued excellence and innovation within the engineering community.

Michel Julien, Vice-President Environment and Critical Infrastructure, Agnico Eagle Mines Limited

We all reach a point in our career where we look back at what we accomplished. In my case, I have been fortunate to join an industry (mining) supposedly with no future in those days. People were often puzzled by my choice. In retrospect, I can humbly say I wish everybody to join an industry with no future! More importantly, my professional journey has been characterized by a series of encounters with exceptional persons (supervisors, mentors, teachers, students, colleagues, team members, etc. who contributed in their own way in making who I am today and I am grateful for that.

Georges Kaddoum, Professor, Department of Electrical Engineering, ETS

Georges Kaddoum is a globally recognized leader in wireless communications, particularly in advancing 5G and beyond. He has authored 400+ research articles, with over 17,000 citations, and has ranked in the top 2% of researchers worldwide since 2020. His collaborations with Ericsson, Hydro-Québec, and Ultra reflect the trust industry leaders place in his research on secure networks and smart grids. A dedicated mentor and champion of EDI, he has guided 40+ students from underrepresented groups. A member of the Royal Society of Canada, Prof. Kaddoum has also earned prestigious awards, including the 2023 MITACS Award, for his visionary leadership.

Sam Kwong, Associate Vice President (Strategic Research), School of Data Science, Lingnan University

Dr. Sam Kwong is an extraordinary researcher and technology innovator in evolutionary computation and video processing. His groundbreaking contributions to video coding are highly influential and impactful, used by the multimedia industry. His discoveries have resulted in 40 U.S. patents, over 500 journal and conference papers, three monographs, and multiple awards. His works have attracted over 36,500 citations with an H-index of 86. In 2022, 2023, and 2024, he was listed as a Highly Cited Researcher by Clarivate. He is a fellow of the IEEE, the US National Academy of Inventors, and the Hong Kong Academy of Engineering.

Irving Leblanc, Advisor on First Nations Safe Water, Independent

Irving Leblanc has pioneered efforts for 30 years to enhance the quality of life for First Nations through his engineering talents and advocacy. With his work at Ontario First Nations Technical Services Corporation and the Assembly of First Nations, he has implemented creative engineering and planning technologies to enable First Nations to better address infrastructure and water quality needs. He has played a major role in reducing long term drinking water advisories in First Nations and in making plans to Close the Infrastructure Gap in First Nations by 2030. He has advocated strongly for educating more First Nations' engineers.

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Chao-Jun Li, Distinguished James McGill Chair Professor, Dept. of Chemistry, McGill University

Chao-Jun Li, a pioneer and global leader in Green Chemistry and Engineering, has made seminal and fundamental contributions to global sustainable production through the discovery and development of green solvents and new transformations. He has published >500 original research papers, inventing a wide range of new catalytic reactions to convert greenhouse gases (methane and CO2), N2, and biomass into high-value products. His research led to the creation of two Canadian startup companies (ACSynam and CataLum), and has trained >200 HQPs working in chemical industry/academic institutions worldwide. He was the founding Co-Chair of the Canadian Green Chemistry and Engineering Network.

Ren-Ke Li, Professor, Toronto General Hospital Research Institute, University Health Network

Dr. Ren-Ke Li, Professor in Cardiac Surgery and Institute of Biomedical Engineering at the University of Toronto, is a world-leading expert in tissue engineering and cell therapy. He innovatively used engineering principles to generate conductive biomaterial to rewire heart conduction to cure arrhythmia. His contributions in cell therapy for heart repair have been clinically translated, solidifying the field of cardiac regeneration and tissue engineering in Canada. These innovations have received international recognition, including a Fellow of the Royal Society of Canada, and Canadian Research Chair in Cardiac Regeneration (Tier 1). He has 286 publications, 4-granted patents and over 100 trainees.

James Marzocca, Vice Chair, Project Management and Construction, Hatch

As a Fellow of the Canadian Academy of Engineering, I endorse the nomination of James Marzocca as a Fellow. James has over 40 years of leadership in innovative engineering, project management and emerging metallurgical technologies. He is an expert in his field as identified by our clients who overwhelmingly ask for his assistance to manage their toughest capital projects. James also has exceptional people skills which is reflected in his lifelong concern for safety of our professionals, the need to have diversity in our project teams, and a natural ability to mentor others. John Bianchini

Gregory Patience, Professor, Department of Chemical Engineering, Polytechnique Montréal

Professor Patience addresses societal preoccupations related to sustainability and well-being of vulnerable populations. His work to fight malaria in Africa was recognized by the Ordre des Ingénieurs du Québec (2022). He collaborates with industry to reduce natural gas flaring, recycle plastics, derive chemicals from residual dairy lactose, and synthesize battery materials. The University of Calgary conferred to him the Schulich Technical Achievement Alumni Award (2020) and he was elected Fellow of the Chemical Institute of Canada (2023). The Canadian Journal of Chemical Engineering has published 2300 articles since 2018, 13% of all citations were to his experimental methods series.

Aminah Robinson Fayek, Vice-President (Research and Innovation), University of Alberta

Dr. Aminah Robinson Fayek's innovative use of fuzzy logic to model subjective variables and uncertainty allowed the creation of construction management solutions previously thought inaccessible to researchers and practitioners. Credited with developing fuzzy hybrid decision support systems as a new area of study within construction, Dr. Fayek's tools and approaches have helped improve the productivity and competitiveness of the Canadian construction industry. As Vice-President (Research and Innovation), she substantially increased the university's annual research revenue. Dr. Fayek was awarded a Tier 1 Canada Research Chair in 2017 and served as an NSERC Industrial Research Chair for 15 years.

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Amer Shalaby, Professor, Department of Civil and Mineral Engineering, University of Toronto

Amer Shalaby is a Professor and Bahen/Tanenbaum Chair in Civil Engineering at the University of Toronto. He is well known for his expertise in transit planning and operations, intelligent transit systems, and transportation planning for large-scale events. He made numerous significant contributions which enriched the state of transit knowledge and practice worldwide. He trained a large number of graduate students, postdoctoral fellows and practitioners on advanced analytical methods for transit planning and operations. Professor Shalaby has led several research centres and institutes throughout his career. He received several awards and honours, and he served on various technical and editorial committees.

Caijun Shi, Professor, College of Civil Engineering, Hunan University

Dr. Caijun Shi is a world-renowned leader in research, development and application of low-carbon high performance civil engineering materials. The numerous innovative technologies and products he developed have been utilized or commercialized internationally. They have helped the cement and concrete industry to reduce substantial amounts of greenhouse gas emissions. As a highly accomplished entrepreneur and university professor, Dr. Shi has founded multiple companies to translate his research into practical applications demonstrating his leadership in engineering innovation. Throughout his career he has actively promoted engineering education and research to the public and various communities.

Tian Tang, Professor, Dept. of Mechanical Engineering, University of Alberta

Dr. Tian Tang is a Professor and Tier-1 Canada Research Chair in the Department of Mechanical Engineering at the University of Alberta. Dr. Tang is a leading expert in the study of soft materials and interfaces, with an outstanding record of research and training that has made her an internationally recognized scholar. She is an exceptional engineering educator and has led the advancement of equity, diversity, and inclusion in STEM. She is the recipient of many awards, including the Rutherford Award for Excellence in Undergraduate Teaching, the Martha Cook Piper Research Prize, Killam Annual Professorship, and the University Cup.

Jessica Vandenberghe, Assistant Dean, Community and Culture. Dean's Office, University of Victoria

Jessica Vandenberghe is an Engineering Leader. She envisions a more inclusive, welcoming, community of Engineering where everyone - regardless of race, gender identity, or background - can participate to the fullest and better the profession through diverse thoughts and ideas. She champions the 30x30 initiative, and has developed tools to facilitate action on the TRC calls in Engineering and Academia. She brings equity, diversity and inclusion to her work at the local, municipal, provincial and national level. She has been recognized by the Women in Leadership Foundation as an EDI Champion and received the Engineers Canada Fellowship in 2022.

Vincent Wong, Professor, Dept. of Electrical and Computer Engineering, University of British Columbia

Dr. Vincent Wong, Professor at the University of British Columbia, is an internationally recognized expert in the areas of wireless networking and energy systems. He has developed novel and practical resource allocation algorithms for wireless communications networks. He has designed innovative demand side management algorithms for smart grid and sustainable energy systems. His work is pioneering and instrumental in shaping the new and quickly evolving areas of wireless networking and energy systems. He has contributed more than 260 journal and conference publications and co-edited a book. Dr. Wong is a Fellow of the IEEE and the Engineering Institute of Canada.

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Peidong Wu, Professor, McMaster University

Dr. Peidong Wu is an internationally renowned expert in the constitutive modelling of materials and in metal forming. His constitutive models have been widely used in industry. He pioneered rigorous crystal-plasticity-based methodologies used to construct technologically important forming limit diagrams for metal forming, and to assess roping-type surface defects in aluminum. He has made significant contributions to enhancing the use of aluminum in automobiles and to reducing the mass of aluminum cans, minimizing resource usage and protecting the environment. He was the recipient of the 2009 International Journal of Plasticity Medal and the 2020 International Magnesium Science & Technology Award.

Simon Xianyi Yang, Professor, School of Engineering, University of Guelph

Professor Simon Yang is an internationally recognized researcher in intelligent robotics. His significant accomplishments include the original and innovative development of biologically inspired intelligent methodologies for real-time motion planning, control and cooperation of various robotic systems, and novel e-nose systems. He has made impactful contributions in developing engineering technologies for intelligent robots and e-nose systems with industrial and agricultural applications, and in training graduate students and research associates. He has published over 600 refereed papers in journals and conference proceedings. He has provided leadership in research communities, serving as EICs/AEs of journals, conference organizing committees and NSERC/CIHR grants panel members.

Winnie Ye, Professor, Dept. of Electronics, Carleton University

Dr. Winnie Ye, a full professor at Carleton University, is celebrated for her pioneering silicon photonics research in stress engineering, opto-electronic integration, and subwavelength metamaterials. Her research excellence, community service, and dedication to diversity distinguish her as an exceptional leader. A Fellow of Optica, Dr. Ye's contributions are highlighted by prestigious honors like the Canada Research Chair. Her leadership roles in IEEE and Optica, demonstrate her commitment to advancing the field of photonics on a global scale. Her receipt of the IEEE MGA Leadership Award stands as a testament to her leadership within the engineering community.

Zhibin Ye, Professor of Chemical and Materials Engineering, Dept. of Electronics, Concordia University

Zhibin Ye is internationally recognized for his research on polymers and advanced polymerization techniques, catalysis technologies, and advanced materials for energy storage. He developed polyethylenes with complex architectures and enabling catalyst technologies. He discovered new organic cathode materials for rechargeable Li-ion batteries. He has published 145+ papers in top journals. His research contributions have been recognized by the Canadian Catalysis Lectureship Award, Canada Research Chair, and Fellow of Royal Society of Chemistry. He has provided leadership to the Canadian chemical societies.

Aiping Yu, Professor, University of Waterloo

Dr. Aiping Yu is an internationally renowned scholar, innovator, and entrepreneur in the fields of nanomaterials and renewable energy. She has ten patents, over 200 papers, and a seminal textbook in these areas, has commercialized her graphene production and lithium-ion battery innovations through four Canadian start-up companies, and is the Founding Editor of Carbon Energy. Prestigious awards include the NSERC Steacie Memorial Fellowship, the Royal Society of Canada (RSC) Rutherford Memorial Medal in Chemistry, and the WXN Canada's Top 100 Most Powerful Women award. She is a University Research Chair and elected member of the RSC College.

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Hui Zhang, Adjunct Prof., Department of Chemical and Biochemical Engineering, Faculty of Engineering, UWO

Dr. Zhang is a global authority in sustainable coatings who has demonstrated exceptional strength in diverse activities, from conceptual innovation to technology development and product commercialization. His pioneering research and multidimensional leadership have yielded several game-changing green technologies and commercial products, as exemplified by the advanced, fast-growing ultrafine and functional powder coatings being produced in industrial scale. His dedication has led to renowned and transformative technologies and businesses that are reshaping the coatings industry, accelerating the shift from pollutant-heavy to eco-friendly solutions. His achievements not only significantly elevate Canada's prominence in this field, but also bring worldwide benefits to society.

Lei Zhang, Senior Research Officer, National Research Council Canada

Dr. Lei Zhang has made remarkable strides in advancing clean energy technologies focused on achieving zero/low emissions. By overseeing numerous high-profile collaborative projects, she has directly contributed to meeting both industry and societal needs in clean energy applications. She is consistently ranked among the Top 2% of Most-Cited World Scientists (career-long achievement in 2024) by the Stanford study. She was elected as a Fellow of the Royal Society of Chemistry (2017) and a Fellow of Industry Academy of the International Artificial Intelligence Industry Alliance (2024).

Xuehua Zhang, Professor, Department of Chemical and Materials Engineering, University of Alberta

Dr Xuehua Zhang is a pioneering researcher for bubbles and drops in multicomponent systems. Her scientific contributions have a major impact on our fundamental understanding that has been leveraged to drive innovations worldwide in clean and sustainable technologies. Her invention draws strong interest from industry toward commercialization. Through her exceptional teaching and mentorship, Dr Zhang has made a lasting impact on her trainees' academic and professional development. Dr Zhang's roles as an elected council member of international associations, founding committee member for conferences, editor, and grant assessor demonstrate her commitment to advancing the research field and engaging the international community.

Ming Zheng, Professor & Director of Clean Combustion Engine Laboratory, Dept. of Mechanical, Automotive & Materials Engineering, University of Windsor

Dr Ming Zheng is internationally renowned authority in cleaner combustion engines. He has made lasting significant impacts in automotive industry on fuel use including low-carbon engine development with biofuels through his reactivity-modulated low temperature combustion control, ignition innovations, and active-flow aftertreatment. His patented technologies showcase the design and development of sustainable and efficient products with ultra clean engine-out emissions. His breakthroughs in on-demand ignition energy management for adapting low-carbon fuels have effectively expanded current engine scopes towards carbon neutral power and propulsion. He has trained a large number of engineers who serve as leaders and specialists in automotive industry.

NEW INTERNATIONAL FELLOWS 2025

Huiling Duan, Dean of Faculty of Engineering, Dept. of Mechanics and Engineering Sciences, Peking University

Huiling Duan is an internationally renowned researcher and educator. Her seminal work in solid and fluid mechanics has significantly advanced micromechanics, fluid-structure interaction mechanics, and four-dimensional additive manufacturing. Her research has strongly promoted the development of continuum mechanics and inspired further studies on interface mechanics. As Dean at Peking University, she has strongly contributed to international academic communities, fostered collaborations with institutions across 26 countries and significantly enhanced diversity and inclusion both within Peking University and beyond. Her accolades include State Natural Science Award of China, Alexander von Humboldt Research Award, and Member of the Chinese Academy of Sciences.

Trung Duong, Canada Excellence Research Chair, Memorial University

Professor Duong is a Canada Excellence Research Chair at Memorial University, an IEEE Fellow, EIC Fellow, IET Fellow, AAIA Fellow. He is a world leading expert in the field of wireless communications and networks. His research has focused on quantum machine learning, quantum optimization for wireless communications. He was the only UK-based researcher to receive both prestigious awards from the Royal Academy of Engineering: Research Fellowship and Research Chair. In 2017, he was awarded the first Newton Prize from the UK government. He is the Editor-in-Chief of IEEE Communications Surveys and Tutorials and a Distinguished Lecturer of IEEE COMSOC.

Dehua Liu, Professor, Department of Chemical Engineering, Tsinghua University

Prof. Dehua LIU is an internationally recognized leader and innovator in research and commercialization of biorefinery technologies for producing biofuels and biochemicals. Based on his innovation and under his leadership, both the enzymatic production of biodiesel and bio-PDO fermentation directly from crude glycerol have been globally and firstly commercialized, winning the BlueSky award from UNIDO and gold medal in Geniva Invention Show. He led the technology transfer and demonstration of the above enzymatic biodiesel in Brazil, featured as a typical case of South-South bioeconomic cooperation by UNOSSC. He is also an outstanding educator, training 72 PhD/MSc students, filing 132 patents.

Jianmei Lu, Chair of Suzhou Science and Technology Association, College of Chemistry, Chemical Engineering and Materials Science, Soochow University

Dr. Jianmei Lu is a distinguished leader in adsorption science and engineering education, celebrated for her transformative contributions to environmental technologies. Her pioneering theories have broken barriers in the field, leading to innovative adsorption technologies utilized worldwide for oil spill response, wastewater treatment, and VOC emissions reduction. Her work has significantly advanced environmental protection and public health. A driving force behind international collaborations, particularly with Canada, she has created a remarkable global impact. Additionally, she is a passionate advocate for advancing female scholars. Her exceptional achievements have garnered her numerous prestigious national and international awards.

Vijay Singh, Distinguished Professor, Regents Professor, & Caroline & William N. Lehrer Distinguished Chair in Water Engineering, Dept. Of Biological & Agricultural Engineering, Texas A&M University

Professor Singh is an eminent researcher in water engineering and has positively impacted the water engineering field in Canada. His contributions include: (1) collaboration with researchers and academics; (2) service on panels; (3) organization of conferences; (4) examination of Ph.D. theses; (5) lectures at universities, and (6) advising Ph.D. students. These activities have greatly contributed to enriching water engineering in Canada. For his impactful contributions to water engineering in Canada, he has received honorary doctorates from three Canadian universities: Dr. Eng. (HC) from University of Waterloo (2010), D.Sc. (HC) from University of Guelph (2014), and D.Sc. (HC) from McGill University (2023). He has also been awarded Medal of Honor by University of Guelph.

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Zhishen Wu, Chair Professor/President, Southeast University/Henan University of Technology

Dr. Wu is a world-renowned expert who has pioneered the growth of the emerging fields of Structural Health Monitoring and Fiber Reinforced Polymers for Sustainable, Resilient and Intelligent Infrastructure in Civil Engineering. He has also made seminal contributions to the creation, manufacturing and application of advanced basalt fibers, as well as the establishment of the global basalt fiber industry. Dr. Wu's innovations are evidenced by over 700 publications and 100 patents. Additionally, he has promoted strong and sustained international collaborations through his leadership roles in three global technical societies, advancing research projects, technical standards, and talent cultivation across Canada and other countries.

Kiat Seng Yeo, Advisor (Global Partnerships), Singapore University of Technology and Design

Kiat Seng YEO, a senior professor at SUTD, has 35 years of experience in industry, academia, and consultancy. A world-class expert in low-power RF/mm-wave IC design, he has published 14 books, 7 book chapters, 650 papers, and holds 55 patents. Yeo is Fellow of the Singapore National Academy of Science, Singapore Academy of Engineering, ASEAN Academy of Engineering and Technology, AAIA, AIIA, and IEEE. He was conferred the Public Administration Medal on National Day by the President of the Republic of Singapore, Nanyang Alumni Achievement Award by NTU, and ranked among the World's Top 2% Scientists by Stanford University (2020-2023).