DEPARTMENTS

Fall 2026 Section News

To cite this article: 2026 *Electrochem. Soc. Interface* **35** 62

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ECS Canada Section

Canada's Rising Stars in Electrochemical Systems: Showcasing the Next Generation of Electrochemical Innovators

Canada is fortunate to benefit from one of the world's lowest-carbon electricity grids. Yet, despite this advantage, Canadians remain among the highest per-capita emitters of greenhouse gases globally. Achieving significant decarbonization will require transformative technologies capable of electrifying transportation, enabling sustainable chemical manufacturing, supporting renewable energy integration, and reducing industrial emissions, with electrochemical systems playing a central role in this transition.

Recognizing both the opportunity and the growing talent emerging across the country, the *Canada's Rising Stars in Electrochemical Systems* symposium was established to celebrate early-career researchers whose work is advancing electrochemistry in academia, government, and industry. The inaugural virtual event was launched in 2022 through the leadership of Drs. **Drew Higgins** (McMaster University), **Anna Klinkova** (University of Waterloo), **David Sinton** (University of Toronto), and **Erik Kjeang** (Simon Fraser University). Since then, the symposium has evolved into a biennial tradition that brings together emerging leaders from across the Canadian electrochemical community.

The 2026 edition was hosted on April 16 and organized by co-chairs Drs. **Samantha Gateman** (Western University) and **Sami Khan** (Simon Fraser University), together with organizing committee members Drs. **ChungHyuk Lee** (Toronto Metropolitan University), **Lindsay Grandy** (Royal Military College of Canada), and **Jason Lee** (University of Victoria). The meeting was well attended, with more than 150 participants from around the world.

This year's symposium featured 17 invited speakers representing 11 universities, two industrial organizations, and one federal government laboratory. The program was organized into four thematic sessions spanning batteries, energy systems, electrochemical manufacturing, electrocatalysis, advanced characterization, modeling, and environmental electrochemistry. Each session combined lightning-talk research presentations which sparked interactive panel discussions with audience Q&A, providing attendees with a unique opportunity to engage directly with emerging leaders in the field.

Engineering Electrochemical Interfaces for Advanced Batteries

The symposium opened with a session focused on battery technologies and electrochemical interfaces. Speakers highlighted advances in lithium-metal batteries, next-generation rechargeable battery chemistries, solid state battery mechanics, and low-cost energy storage solutions. Presentations from Drs. **Weilai Yu** (University of Toronto), **Sixu Deng** (Concordia University), **Teng Cui** (University of Waterloo), and **Jinhyuk Lee** (McGill University) showcased the breadth of Canadian expertise aimed at improving battery performance, safety, and reproducibility across the field.

Architectures and Materials for Scalable Electrochemical Energy Systems

The second session examined the materials and architectures required for large-scale electrochemical technologies. Drs. **Maxime van Der Heijden** (University of Waterloo), **Jasneet Kaur** (Brock University), **Jay Werber** (University of Toronto), and **Bertrand Neyhouse** (University of Toronto) discussed topics that ranged from architected porous media and two-dimensional materials to ion-exchange membranes and electrochemical manufacturing. Together, these talks highlighted the importance of engineering materials and transport phenomena across multiple length scales to enable future energy systems.

Electrochemical Synthesis and Industrial Decarbonization

Electrochemical manufacturing and industrial decarbonization formed the focus of the third session. Presentations from Drs. **Sunmoon Yu** (University of Toronto), **Mohammadreza Karamad** (Simon Fraser University), **Eric Lees** (University of British Columbia), **Shaoxuan Ren** (National Research Council Canada), and **Holly Fruehwald** (Wilfrid Laurier University) explored carbon capture, electrocatalytic synthesis, reactor modeling, industrial electrochemical technologies, and advanced interface characterization. These talks illustrated how electrochemistry is transforming chemical production and reducing industrial carbon emissions.

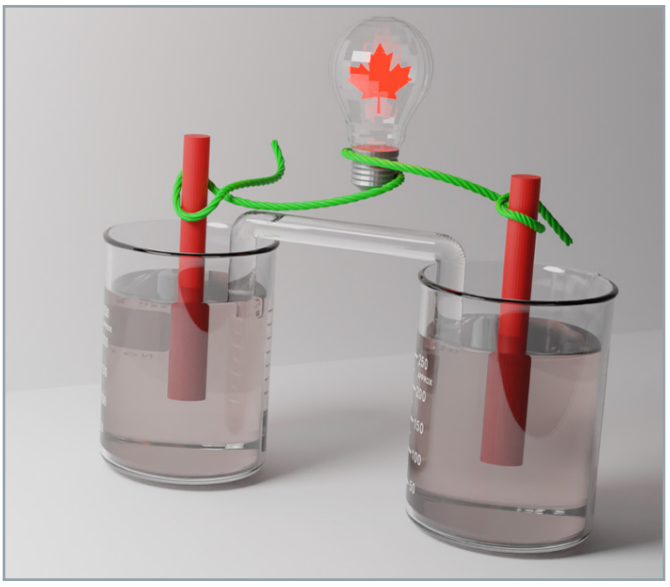
Seeing, Modeling, and Diagnosing Electrochemical Systems in Real Time

The final session emphasized emerging tools for understanding electrochemical systems through advanced characterization, modeling, and diagnostics. Drs. **Chunyang Zhang** (Canadian Light Source), **Conrard Giresse Tetsassi Feugmo** (University of Waterloo), **Dhésmon Lima** (Mount Saint Vincent University), and **Desmond Williams** (Canadian Nuclear Laboratories) presented research spanning in situ spectro-microscopy, physics-informed machine learning, environmental electrochemistry, and materials degradation in nuclear systems. These presentations demonstrated the growing role of advanced analytical and computational approaches in accelerating electrochemical discovery.

ECS Canada Section Mixer

To further strengthen community connections, the organizers partnered with the ECS Canada Section to host an in-person networking mixer on May 25 in Toronto. The event provided an opportunity for attendees to meet many of the Rising Stars speakers face-to-face while fostering new collaborations and connections across Canada's electrochemical community. The organizers gratefully acknowledge the support of the ECS Canada Section, Metrohm Canada, and HEKA Instruments for helping make the 2026 *Canada's Rising Stars in Electrochemical Systems* symposium and networking events possible. The future of electrochemistry in Canada is bright, and, judging by the enthusiasm, creativity, and scientific excellence on display throughout the symposium, it is in very capable hands.

For more information, visit the event website.



ECS Detroit Section

The ECS Detroit Section hosted a dynamic series of seminars in early 2026, starting with a virtual event in January featuring Prof. **Jeff Dahn** (Dalhousie University), who discussed challenges and opportunities in $LiFePO_4$ (LFP) batteries, including strategies to address limitations in energy density and elevated-temperature performance. Building on this momentum, the section transitioned to in-person programming with strong participation from industry and academic communities. In April, **Boaz Mamo** (Addionics) presented on the impact of porous 3D current collectors in enabling next-generation battery performance and scalable manufacturing, followed by a joint seminar featuring Drs. **Yong Seok Kim** (Samsung SDI R&D America) and **Ping Liu** (University of California San Diego), who provided complementary industrial and academic perspectives on US battery development and solid state sulfur battery chemistry. The spring series concluded in May with Dr. **Jeff Lowe** (General Motors), who highlighted how atomistic modeling can accelerate electric vehicle battery design through multiscale simulation frameworks that bridge fundamental chemistry and engineering applications.

Each event included student poster sessions, providing valuable opportunities for emerging researchers to present their work, engage with experts, and build connections across academia and industry. To further support career development, the section introduced "Open to Work" identifiers during poster sessions, helping connect students and job seekers directly with industry attendees and strengthening career pathways within the electrochemical community. These programs reinforce the Detroit Section's role in fostering collaboration, innovation, and professional development within the electrochemical community.



A seminar hosted by the ECS Detroit Section on April 15, 2026, included joint presentations by Drs. **Yong Seok Kim** *(Samsung SDI R&D America) and* **Ping Liu** *(University of California San Diego) highlighting the industrial and academic perspectives on advanced battery technologies, along with a student poster session.*
All Photos: Deepesh Gopalakrishnan and Shweta Lingaya



The May 12, 2026, ECS Detroit Section seminar featured Dr. **Jeff Lowe** *(General Motors) presenting atomistic modeling approaches for accelerating electric vehicle battery design.*



Section Leadership

Connect with Local Scientists and Engineers

ECS Sections introduce and support activities in electrochemistry and solid state science within specific regions and bring technical news and activities to those not able to attend ECS meetings. Sections participate in overall ECS affairs, work to increase ECS membership, and help create awareness for science. Getting involved with a section is an excellent networking opportunity for those new to the field or advanced in their careers!

For more information on your region's section, go to https://www.electrochem.org/sections. For more information on joining, contact ECS Section & Chapter Engagement Specialist Maggie Hohenadel.

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