Chemists, chemical engineers, and chemical technologists are society’s problem solvers. From advances in healthcare and pharmaceuticals, to energy, the environment, food and water, they find solutions for our future.

The Canadian Society for Chemistry (CSC) is one of three constituent societies of the Chemical Institute of Canada (CIC), which is committed to advancing the chemical sciences and engineering. CIC serves its approximately 6,000 members and achieves its mission by

- organizing Canada’s two premier annual conferences for the chemical sciences and engineering;
- publishing ACCN, Canadian Chemical News and The Canadian Journal of Chemical Engineering;
- conferring awards;
- overseeing a network of Local Sections, Student Chapters, and Subject Divisions;
- lobbying the government on issues of research funding and regulations;
- accrediting university programs and certifying chemical technologists; and
- reaching out to the public to advance their understanding and appreciation of the chemical sciences and engineering.

As well as enjoying several benefits, such as discounted rates for our conferences and a complimentary subscription to our magazine, members of the constituent societies of the CIC become part of Canada’s diverse and prestigious community of chemical scientists, engineers, and technologists. To find out more, visit www.cheminst.ca.

---

Canadian Society for Chemistry (CSC) Officers

President    Vice-President    Treasurer    Past President    Executive Director
Rui Resendes    Kim Baines, FCIC    Hugh Horton    Neil Burford, FCIC    Roland Andersson, FCIC

Conference Organizing Committee

Robert Batey, Conference Chair, University of Toronto, Mark Lautens, FCIC, Technical Program Chair, University of Toronto, Doug Stephan, FCIC, Sponsorship Chair, University of Toronto, Lindy Chan, Local Committee Coordinator, University of Toronto, Roland Andersson, FCIC, Executive Director, CSC, Joan Kingston, Director, Finance and Operations, CSC, Bernadette Lockyer, Director, Communications and Marketing, CSC, Gale Thirlwall, Manager, Awards and Local Section, CSC, Michelle Payne, Manager, Technical Programs, CSC, Krista Leroux, Manager, Creative Services, CSC, Emily Connolly, Membership and Events Coordinator, CSC, Chris Muldoon, Member Development Leader, CSC, Alicia Haines, Career Development Leader, CSC

Upcoming CSC Conferences

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Edmonton, AB</td>
<td>May 27–31</td>
</tr>
<tr>
<td>2019</td>
<td>Québec City, QC</td>
<td>June 3–7</td>
</tr>
<tr>
<td>2020</td>
<td>Winnipeg, MB</td>
<td>May 24–28</td>
</tr>
</tbody>
</table>

Final Program Book

This program book is produced by the Canadian Society for Chemistry. It provides a general overview of the conference at the time of its printing. Please note that last-minute changes are unavoidable and will be indicated at the session room.

The official language of the conference is English. No translation or simultaneous interpretation will be provided.
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Sponsors  
Meeting and Event Schedule  
CSC Professional Development Track:  
CSC President’s Event  
Plenary Lectures  
Joint CSC/Public Outreach Event:  
This Molecular World  
Award Lectures  
CIC Fellows 2017  
Exhibition  
Symposia  
Scientific Program Schedule  
Author Index  
Floor Plans  
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On behalf of the Canadian Society for Chemistry (CSC), it is my pleasure and privilege to welcome you to the 100th Canadian Chemistry Conference and Exhibition (CSC 2017) in Toronto, Ontario. This event marks the 100th anniversary of the CSC annual conference and fittingly the theme is: **A Celebration of Chemistry**.

We have a lot to celebrate from the last 100 years. Through personal ingenuity and as part of global collaborations chemists have made their mark on society by contributing to the myriad of technology platforms that currently underpin our quality of life. Looking to the future, I am confident that Canadian chemistry discovery and innovation will help address and overcome today’s global challenges around sustainability, climate change and renewable energy generation. A special issue of ACCN, the *Canadian Chemical News* has been created to celebrate the history of the chemical enterprise. This issue will be proudly circulated and distributed at the conference.

The conference will feature a world class technical program starting with an opening plenary lecture delivered by Charles Lieber, Harvard University and will close with Sir Martyn Poliakoff, University of Nottingham, that will take place as a public outreach event titled *This Molecular World: From the Depths of the Earth to Infectious Disease*. Other plenaries will be given by CIC Medalist Eugenia Kumacheva, University of Toronto and Montréal Medalist Neil Burford, University of Victoria. Also, I invite you to join me on Tuesday at noon for the CSC President’s Event to hear our panel of chemical professionals who will discuss the changing face of chemistry and the chemical industry.

Finally, I would like to thank Robert Batey, Conference Chair, Mark Lautens, Technical Program Chair, Doug Stephan, Sponsorship Chair and Lindy Chan, Local Committee Coordinator. They along with the CSC national office staff have organized an excellent event that is truly fitting of this milestone anniversary.

I look forward to celebrating 100 years of chemistry discovery and innovation with you at the 100th Canadian Chemistry Conference and Exhibition.
A WARM WELCOME TO CSC 2017
FROM UofT CHEMISTRY

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UNIVERSITY OF TORONTO

www.chem.utoronto.ca
Robert Batey
Message from the Conference Chair

On behalf of the local organizing committee from the University of Toronto, I am delighted to welcome you to Toronto to celebrate the science and practice of chemistry for the 100th Canadian Chemistry Conference and Exhibition (CSC 2017).

Canada’s premiere chemistry event takes on a special significance this year, coinciding with both the CSC meeting’s centennial and the 150th anniversary of the Confederation of Canada. CSC 2017 will feature plenary, invited and submitted lectures, jointly organized international symposia, poster sessions, panel discussions, and special events including a closing day outreach event. We are pleased to welcome Charles Lieber, Harvard University and Sir Martyn Poliakoff, University of Nottingham as plenary speakers. The conference program will showcase outstanding science from across Canada and around the world, featuring the latest innovations in research in the traditional sub-disciplines of chemistry, both fundamental and applied, as well as emerging areas of chemistry that involve cross-disciplinary translational research.

The conference will take place from May 28 – June 1, 2017 at the Metro Toronto Convention Centre in the heart of downtown Toronto. We are confident that CSC 2017 will provide all participants with an unforgettable professional and personal experience in the wonderfully vibrant and diverse metropolis of Toronto. The city offers an array of cultural and entertainment opportunities, with wonderful restaurants, clubs, concerts, sporting events, art galleries, and eclectic neighbourhoods. There will be many events across Canada for our country’s 150th anniversary of Confederation, and for our international visitors Toronto is a gateway to the beautiful province of Ontario and the country as a whole.

The organizing committee gratefully acknowledges the financial support of our sponsors, and the participation of all those contributing to the success of the conference. We hope that CSC 2017 will serve as an inspiration to the next generation of scientists and will be an opportunity for you to celebrate great chemistry with your fellow chemists, colleagues and friends.
We thank the following sponsors for their generous support of our conference. They have allowed us to offer you an exciting and rewarding program.

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University of Waterloo Faculty of Science
University of Western Ontario
Waterloo Institute for Nanotechnology, University of Waterloo
Wellington Laboratories Inc.

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## Saturday, May 27

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00–17:00</td>
<td>CREATE Workshop: Scientific Horizons for Mass Spectrometry in Academia</td>
<td>MTCC, Room 205B</td>
</tr>
<tr>
<td>12:00–17:00</td>
<td>CIC Board of Directors Meeting</td>
<td>MTCC, Room 104B</td>
</tr>
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## Sunday, May 28

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00–15:00</td>
<td>CSC Board of Directors Meeting</td>
<td>MTCC, Room 104D</td>
</tr>
<tr>
<td>08:00–17:00</td>
<td>CREATE Workshop: Scientific Horizons for Mass Spectrometry in Industry</td>
<td>MTCC, Room 205B</td>
</tr>
<tr>
<td>10:00–12:00</td>
<td>Canadian Journal of Chemistry Editors Meeting</td>
<td>MTCC, Room 206B</td>
</tr>
<tr>
<td>10:00–14:00</td>
<td>Professional Development Track: Green Chemistry Crash Course and Industry Case Study</td>
<td>MTCC, Room 104A</td>
</tr>
<tr>
<td>12:00–20:00</td>
<td>Registration</td>
<td>MTCC, Level 200</td>
</tr>
<tr>
<td>12:00–17:00</td>
<td>Speaker Ready Room</td>
<td>MTCC, Room 104B</td>
</tr>
<tr>
<td>12:00–15:00</td>
<td>Canadian Council of University Chemistry Chairs (CCUCC) Meeting</td>
<td>MTCC, Room 101</td>
</tr>
<tr>
<td>13:00–17:00</td>
<td>Connect the Chemistry Education Research Community</td>
<td>MTCC, Room 206B</td>
</tr>
<tr>
<td>14:30–17:00</td>
<td>Professional Development Track: Career Discussion Panel and Coffee Mixer</td>
<td>MTCC, Room 104A</td>
</tr>
<tr>
<td>15:00–16:00</td>
<td>Organic Chemistry Division Executive Meeting</td>
<td>MTCC, Room 104C</td>
</tr>
<tr>
<td>17:00–19:00</td>
<td>Conference Opening and Plenary Lecture</td>
<td>MTCC, Rooms 105 and 106</td>
</tr>
<tr>
<td>19:00–22:00</td>
<td>Welcome Reception and Exhibition</td>
<td>MTCC, Hall C</td>
</tr>
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</table>

## Monday, May 29

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:00–10:00</td>
<td>CNC-IUPAC Meeting</td>
<td>IC, Haliburton Room</td>
</tr>
<tr>
<td>07:00–17:00</td>
<td>Speaker Ready Room</td>
<td>MTCC, Room 104B</td>
</tr>
<tr>
<td>07:00–17:00</td>
<td>Registration</td>
<td>MTCC, Level 200</td>
</tr>
<tr>
<td>08:00–18:00</td>
<td>Scientific Sessions</td>
<td>MTCC, Throughout</td>
</tr>
<tr>
<td>09:30–19:30</td>
<td>Exhibition</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>10:00–10:20</td>
<td>AM Coffee Break</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>11:20–12:20</td>
<td>Plenary Lecture: CIC Medal</td>
<td>MTCC, Rooms 105 and 106</td>
</tr>
<tr>
<td>12:20–13:40</td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td>12:20–13:40</td>
<td>Biological and Medicinal Chemistry Division Executive Meeting</td>
<td>MTCC, Room 104A</td>
</tr>
<tr>
<td>12:20–13:40</td>
<td>NSERC Discovery Grants: Results, Questions and Answers</td>
<td>MTCC, Room 201A</td>
</tr>
<tr>
<td>12:20–13:40</td>
<td>Organic Division Annual General Meeting</td>
<td>MTCC, Room 205B</td>
</tr>
<tr>
<td>13:00–14:30</td>
<td>Professional Development Track: ACS on Campus Event</td>
<td>MTCC, Room 104C</td>
</tr>
<tr>
<td>15:40–16:00</td>
<td>PM Coffee Break</td>
<td>MTCC, Hall C</td>
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MTCC = Metro Toronto Convention Centre  
IC = InterContinental Hotel
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>17:40–19:30</td>
<td>Poster Session and Reception</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Biological and Medicinal Chemistry Division Annual General Meeting</td>
<td>MTCC, Room 104A</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Analytical Chemistry Division Executive Meeting</td>
<td>Off-Site</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Chemistry Education Division Executive Meeting</td>
<td>MTCC, Room 205D</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Environment Division Executive Meeting and Annual General Meeting</td>
<td>MTCC, Room 206A</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Inorganic Chemistry Division Executive Meeting</td>
<td>MTCC, Room 203A</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Macromolecular Science and Engineering Division Executive Meeting</td>
<td>MTCC, Room 202A</td>
</tr>
<tr>
<td>18:00–20:00</td>
<td>Dalhousie University Reception</td>
<td>MTCC, 204 Summit Room</td>
</tr>
<tr>
<td>19:00–20:30</td>
<td>Accreditation Committee Meeting</td>
<td>IC, Haliburton Room</td>
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</table>

**Tuesday, May 30**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>07:00–08:30</td>
<td>Local Section Executive Meeting</td>
<td>MTCC, Room 104C</td>
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<tr>
<td>07:00–17:00</td>
<td>Registration</td>
<td>MTCC, Level 200</td>
</tr>
<tr>
<td>07:00–17:00</td>
<td>Speaker Ready Room</td>
<td>MTCC, Room 104B</td>
</tr>
<tr>
<td>08:00–18:00</td>
<td>Scientific Sessions</td>
<td>MTCC, Throughout</td>
</tr>
<tr>
<td>09:30–19:30</td>
<td>Exhibition</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>10:00–10:20</td>
<td>AM Coffee Break</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>12:00–13:40</td>
<td>Lunch Break</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>12:00–13:40</td>
<td>Professional Development Track: CSC President’s Event</td>
<td>MTCC, Room 206F</td>
</tr>
<tr>
<td>12:00–13:40</td>
<td>NSERC Discovery Grants: Insights from Former Committee Members</td>
<td>MTCC, Room 201A</td>
</tr>
<tr>
<td>12:00–13:40</td>
<td>Macromolecular Science and Engineering Division Annual General Meeting</td>
<td>MTCC, Room 202A</td>
</tr>
<tr>
<td>15:40–16:00</td>
<td>PM Coffee Break</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>17:40–19:30</td>
<td>Poster Session and Reception</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Analytical Chemistry Division Annual General Meeting</td>
<td>Off-Site</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Chemistry Education Division Annual General Meeting</td>
<td>MTCC, Room 205D</td>
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<tr>
<td>17:40–19:00</td>
<td>Materials Chemistry Division Annual General Meeting</td>
<td>MTCC, Room 201D</td>
</tr>
<tr>
<td>17:40–19:00</td>
<td>Physical, Theoretical and Computational Chemistry Annual General Meeting</td>
<td>MTCC, Room 203A</td>
</tr>
<tr>
<td>18:00–20:00</td>
<td>GreenCentre Canada Mixer (By Invitation Only)</td>
<td>MTCC, 204 Summit Room</td>
</tr>
<tr>
<td>19:30–22:00</td>
<td>Women in Chemistry and Friends Annual Dinner (pre-registration required)</td>
<td>The Badali Bar &amp; Cucina</td>
</tr>
</tbody>
</table>
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### Wednesday, May 31

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:00–08:30</td>
<td>Subject Division Executive Meeting</td>
<td>MTCC, 204 Summit Room</td>
</tr>
<tr>
<td>07:00–17:00</td>
<td>Registration</td>
<td>MTCC, Level 200</td>
</tr>
<tr>
<td>07:00–17:00</td>
<td>Speaker Ready Room</td>
<td>MTCC, Room 104B</td>
</tr>
<tr>
<td>08:00–18:00</td>
<td>Scientific Sessions</td>
<td>MTCC, Throughout</td>
</tr>
<tr>
<td>09:00–17:00</td>
<td>Raman Spectroscopy Workshop for Chemical and Material Identification in Materials Research (Pre Registration Required)</td>
<td>MTCC, Room 104C</td>
</tr>
<tr>
<td>10:00–10:20</td>
<td>AM Coffee Break</td>
<td>MTCC, Hall C</td>
</tr>
<tr>
<td>11:20–12:20</td>
<td>Plenary Lecture: Montréal Medal</td>
<td>MTCC, Rooms 105 and 106</td>
</tr>
<tr>
<td>12:20–13:40</td>
<td>Chemistry Education Research Workshop</td>
<td>MTCC, 204 Summit Room</td>
</tr>
<tr>
<td>12:20–13:40</td>
<td>Lunch Break</td>
<td></td>
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<tr>
<td>12:30–13:00</td>
<td>33rd CSC Annual General Meeting</td>
<td>MTCC, Room 206F</td>
</tr>
<tr>
<td>13:00–13:30</td>
<td>73rd CIC Annual General Meeting</td>
<td>MTCC, Room 206F</td>
</tr>
<tr>
<td>15:40–16:00</td>
<td>PM Coffee Break</td>
<td>MTCC, Hall C</td>
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<tr>
<td>17:40–19:00</td>
<td>Inorganic Chemistry Division Annual General Meeting</td>
<td>MTCC, Room 203A</td>
</tr>
<tr>
<td>17:40–19:30</td>
<td>Poster Session and Reception</td>
<td>MTCC, Room 203B</td>
</tr>
<tr>
<td>18:00–20:30</td>
<td>Elsevier Reviewer Workshop (Pre Registration Required)</td>
<td>MTCC, Room 203B</td>
</tr>
<tr>
<td>18:00–19:00</td>
<td>CIC Chair’s and CIC President’s Reception (By Invitation only)</td>
<td>IC, Ontario Room</td>
</tr>
<tr>
<td>19:00–19:30</td>
<td>CIC and CSC Awards Reception</td>
<td>IC, Ballroom Foyer</td>
</tr>
<tr>
<td>19:30–22:00</td>
<td>CIC and CSC Awards Banquet</td>
<td>IC, The Ballroom</td>
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### Thursday, June 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>07:00–13:00</td>
<td>Registration</td>
<td>MTCC, Level 200</td>
</tr>
<tr>
<td>07:00–14:00</td>
<td>Speaker Ready Room</td>
<td>MTCC, Room 104B</td>
</tr>
<tr>
<td>08:00–11:00</td>
<td>CSC Board of Directors Meeting</td>
<td>MTCC, 204 Summit Room</td>
</tr>
<tr>
<td>08:00–16:40</td>
<td>Scientific Sessions</td>
<td>MTCC, Throughout</td>
</tr>
<tr>
<td>10:00–10:20</td>
<td>AM Coffee Break</td>
<td>MTCC, Level 200</td>
</tr>
<tr>
<td>12:00–13:40</td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td>12:00–13:30</td>
<td>CSC Student Awards Reception</td>
<td>MTCC, Room 205D</td>
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<tr>
<td>12:00–13:40</td>
<td>Conference Organizing Committee Debriefing Meeting</td>
<td>MTCC, 204 Summit Room</td>
</tr>
<tr>
<td>15:00–15:20</td>
<td>PM Coffee Break</td>
<td>MTCC, Level 200</td>
</tr>
<tr>
<td>17:00–19:00</td>
<td>Joint CSC/Public Outreach Event: This Molecular World</td>
<td>MTCC, Room 107</td>
</tr>
</tbody>
</table>

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**MTCC** = Metro Toronto Convention Centre  
**IC** = InterContinental Hotel
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with a knowledge business that spans the globe

Membership & professional society
53,500 members

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Get to know us at our booth located by the entrance – 602/604

Celebrating the 100th anniversary of the Canadian Chemistry Conference and Exhibition we’ve put together a special collection of our articles. Free to access for a limited period, this cross-journal collection highlights the excellence and breadth of Canadian research.

View our special collection rsc.li/CSC100
Tuesday, May 30

12:00–13:40

Metro Toronto Convention Centre, Room 206F

Changing Face of Chemistry

Will chemistry be a follower or leader on societal challenges?

Chemistry, physics and biology were all well-defined natural science disciplines a half a century ago. However in today’s new world, chemistry has increasingly lost much of its identity as a discipline with multiple new sciences such as environmental science, molecular biology, nanotechnology, surface science, and materials science having evolved over the past several decades.

Has the “central” science of chemistry become so relevant to the many new disciplines that it could find itself absorbed into molecular science and engineering? With technological advances, what will the laboratories of the future look like? Will chemists need more mathematics and software training than the traditional chemistry taught today?

Our world continues to advance at a rapid pace. Will the discipline of chemistry be a follower or leader in addressing our major societal challenges such as energy, climate change, security, healthcare, food and water? A panel of chemical professionals from across the globe will discuss the changing face of chemistry and chemical industry.

Our national and international panelists will each give brief 10 minute overviews followed by a question and answer session.

A complimentary lunch will be provided.

Moderator

Rui Resendes, President, Canadian Society for Chemistry, FireRein Inc.

Panelists

Thomas Connelly, CEO & Executive Director, American Chemical Society

Domenic Tildesley, Past President, Royal Society of Chemistry (RSC),
European Center for Atomic and Molecular Computation (CECAM)

Bruce Lennox, FCIC, Dean of Science, McGill University

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This plenary lecture will be presented as part of the CSC Conference Opening.

Nano-bioelectronics: From Sensor Chips to Seamless Brain-electronics Implants

Nanoscale materials enable unique opportunities at the interface between the physical and life sciences, for example, by integrating nanoelectronic devices with cells and/or tissue to make possible communication at the length scales relevant to biological function. In this presentation, I will present an overview of bioelectronics, including key motivation, primary research results, and future opportunities. First, key issues and opportunities for developing nanoelectronic devices as biological sensors through implants will be introduced. Second, transistor-based nanoelectronic chip-based platforms will be introduced and selected studies of label-free detection of biological analytes as well as neuron and cardiac cell action potentials will be briefly reviewed. Third, the design and implementation of new nanoelectronic probes capable of intracellular recording and stimulation at scales heretofore not possible with existing techniques will be discussed, including applications in neuroscience and the prospects of biologically-targeting of nanoscale devices to cells and subcellular structures. Last, an ‘out-of-the-box’ approach for seamlessly merging nanoelectronic arrays with the brain using syringe-injectable polymer-like mesh electronics will be discussed, including quantitative studies demonstrating unprecedented absence of tissue immune response and stable recording at the single neuron/neural circuit level for more than a year. The prospects for broad-ranging applications in the life sciences as the distinction between electronic and living systems is blurred as well as future challenges will be discussed.

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CIC Medal Lecture
Monday, May 29
11:20–12:20
Metro Toronto Convention Centre, Rooms 105 and 106

Eugenia Kumacheva
University of Toronto

Nanoparticle Self-assembly: Bridging the Gap between Molecules and Nanoparticles
The concept of “colloidal molecules” builds on the analogy between colloidal particles and molecules. For about a hundred years, colloidal particles have been used as model systems for studying atoms or molecules. Recently, this approach has been changed: interactions between molecules are being used to model nanoparticle self-organization. In particular, polymer science offers unique strategies to address the challenges in nanoparticle assembly. By using the lessons of polymer physics and chemistry, we developed new paradigms for nanoparticle patterning and self-organization. A pinned micelle approach has been utilized to create colloidal molecules. A striking resemblance between block copolymers and amphiphilic nanoparticles enabled nanoparticle assembly in nanostructures with varying morphologies, all mapped by state diagrams. A marked similarity between step-growth polymerization and nanoparticle self-assembly enabled growth of nanopolymers, with a quantitative prediction of the architecture of linear, branched, and cyclic nanostructures, their aggregation number and size distribution, as well as the formation of isomers. Building on this similarity, we proposed the concept of colloidal chain stoppers and copolymers. For linear chains of plasmonic nanoparticles, we discovered new optical properties. This work has far-reaching implications for the molecular world (by offering simple, easy to visualize nanoscale models for polymerization reactions), and for the nano-world (by providing a polymer approach to nanostructures with structure-dependent electronic, optical, and magnetic properties).

Montréal Medal Lecture
Wednesday, May 31
11:20–12:20
Metro Toronto Convention Centre, Rooms 105 and 106

Neil Burford, FCIC
University of Victoria

Shifts, Δs, Hybridization and Characterization of the Chemistry Discipline
From the perspective of a student of chemistry, an academic researcher, a mentor, a teacher, an administrator and a society member, I will present some of my opinions, experiences, observations, projections and predictions about the discipline of chemistry.
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Joint CSC/Public Outreach Event*

This Molecular World: From the Depths of the Earth to Infectious Disease

Thursday, June 1
17:00-19:00
Metro Toronto Convention Centre, Room 107

Sir Martyn Poliakoff, CBE, CChem, FRS, FRSC, FiChemE
University of Nottingham, UK

From Test Tube to YouTube

This talk tells a story of something which came as a complete surprise to me. It explains how my participation in making some videos for the University of Nottingham’s YouTube channel led to my collaborating with a very talented video-journalist Brady Haran and the creation of the YouTube channel, The Periodic Table of Videos. This began as a collection of 120 videos (one for each of the 118 elements of the Periodic Table, plus an introduction and a trailer). Quickly, it gathered momentum and now it has uploaded more than 600 videos with more than 900,000 YouTube subscribers and more than 1.5 million views in over 200 countries. I will outline how the concept has evolved and suggest tentatively how the channel came to be successful in communicating our love of chemistry across the world.

Joining Sir Martyn Poliakoff:

Joe Schwarcz, McGill University, “Fake News” in Science
Barbara Sherwood Lollar, University of Toronto, Making New Waves: Hunting for Hidden Waters
Gilbert Walker, University of Toronto, Eco-friendly Salmon Fishing
Aaron Wheeler, University of Toronto, Hacking Healthcare in a Refugee Camp

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Plenary Lectures

* "This Molecular World" is a free, public event during the 100th Canadian Chemistry Conference and Exhibition. Join us for an entertaining evening exploring topics in chemistry and science communication.
RECOGNIZE OUTSTANDING ACHIEVEMENTS

Nominate a deserving chemical scientist or engineer for the CIC and CSC 2018 Awards. View terms of reference and submit nominations at www.cheminst.ca/awards.

The 2018 selection deadline is July 3, 2017.

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CSC AWARDS: Alfred Bader Award • Award for Research Excellence in Materials Chemistry • Bernard Belleau Award • Clara Benson Award • E.W.R. Steacie Excellence Award • Fred Beamish Award • IntelliSyn Pharma Research Excellence Award • John C. Polanyi Award • Keith Fagnou Award • Keith Laidler Award • Maxxam Award • Melanie O’Neill Young Investigator Award in Biological Chemistry • R. U. Lemieux Award • Rio Tinto Alcan Award • Strem Chemicals Award • Teva Canada Limited Biological and Medicinal Chemistry Lectureship Award • Tom Ziegler Award • W. A. E. McBryde Medal
CIC Award Lectures

CIC Medal
Sponsored by the Chemical Institute of Canada

Eugenia Kumacheva
University of Toronto
Monday, May 29 • 11:20–12:20
Room: 105 and 106, Symposium: PL2

Nanoparticle Self-assembly: Bridging the Gap between Molecules and Nanoparticles

Montréal Medal
Sponsored by the Chemical Institute of Canada

Neil Burford, FCIC
University of Victoria
Wednesday, May 31 • 11:20–12:20
Room: 105 and 106, Symposium: PL3

Shifts, Δs, Hybridization and Characterization of the Chemistry Discipline

Environment Division Research and Development Dima Award
Sponsored by Dima Technology Inc.

Xing-Fang Li, FCIC
University of Alberta
Monday, May 29 • 13:40–14:20
Room: 205A, Symposium: EN5

Drinking Water Safety: Pathogens and Disinfection By-products

CIC Award for Chemistry Education
Sponsored by the CIC Chemical Education Fund

Charles A Lucy, FCIC
University of Alberta
Wednesday, May 31 • 13:40–14:20
Room: 205D, Symposium: CE2

Welcome to My Classworld: Engaging in Large Chemistry Classes And Beyond

Macromolecular Science and Engineering Award
Sponsored by NOVA Chemicals Corporation

Michael A Brook
McMaster University
Wednesday, May 31 • 10:40–11:20
Room: 205A, Symposium: MS1

A Strategy for Controlled Silicone Polymer Synthesis: Just Add Water (And a Few Other Things)

Beaumier Award for High School/CÉGEP Chemistry Teachers
Sponsored by the Beaumier Churcott Foundation

Michael Jansen
Crescent School
Thursday, June 1 • 10:20–10:40
Room: 205B, Symposium: CEG

Several Quick, Inexpensive Labs/Demonstrations for General Chemistry

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CSC Award Lectures

Keith Fagnou Award  
Sponsored by the University of Ottawa and the Organic Chemistry Division

**Mark Taylor**  
University of Toronto  
**Monday, May 29 • 08:40–09:20**  
Room: 203B, Symposium: OR4

**Organoborn Catalysts and Reagents for Carbohydrate Chemistry**

R. U. Lemieux Award  
Sponsored by Gilead Alberta ULC

**Cathleen M Crudden, FCIC**  
Queen’s University  
**Monday, May 29 • 16:00–16:40**  
Room: 203B, Symposium: OR4

**N-heterocyclic Carbenes as Supporting Ligands for Borenium-based Catalysts and on Metal Surfaces**

Bernard Belleau Award  
Sponsored by Vertex Pharmaceuticals (Canada) Inc.

**Jeffrey W Keillor**  
University of Ottawa  
**Monday, May 29 • 13:40–14:20**  
Room: 201C, Symposium: BM5

**Targeted Covalent Inhibition of Tissue Transglutaminase in Cancer Stem Cells**

IntelliSyn Pharma Research Excellence Award  
Sponsored by IntelliSyn RD

**Fraser Hof**  
University of Victoria  
**Monday, May 29 • 16:40–17:20**  
Room: 206C, Symposium: OR1

**Supramolecular and Peptidic Tools for Probing Epigenetic Methylation Pathways**

Clara Benson Award  
Sponsored by Canadian Council of University Chemistry Chairs (CCUCC)

**Ann English, FCIC**  
Concordia University  
**Monday, May 29 • 13:40–14:20**  
Room: 201E, Symposium: BM4

**Hemoglobin - A Conformationally Gated Nanobioreactor that Synergizes O₂ and NO Binding to Match O₂ Delivery with Metabolic Demand**

John C. Polanyi Award  
Sponsored by the Physical, Theoretical and Computational Chemistry Division

**Josef W Zwanziger**  
Dalhousie University  
**Monday, May 29 • 13:40–14:20**  
Room: 203A, Symposium: PT1

**The Relationship of Glass Structure to Its Optical Performance**

Strem Chemicals Award for Pure or Applied Inorganic Chemistry  
Sponsored by Strem Chemicals, Inc.

**Dwight Seferos**  
University of Toronto  
**Monday, May 29 • 15:00–15:40**  
Room: 206B, Symposium: IN4

**Organo-Tellurium Materials and Reactive Molecules**

Award for Research Excellence in Materials Chemistry  
Sponsored by the Materials Chemistry Division

**Jonathan Veinot**  
University of Alberta  
**Tuesday, May 30 • 11:20–12:00**  
Room: 206E, Symposium: MT3

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Rio Tinto Alcan Award
Sponsored by Rio Tinto Alcan

Heinz-Bernhard Kraatz
University of Toronto at Scarborough
Tuesday, May 30 • 11:20-12:00
Room: 201E, Symposium: BM4
Ferrocene Peptides. Self-assembly and Materials

Tom Ziegler Award
Sponsored by Scientific Computing & Modelling NV

Marcel Nooijen
University of Waterloo
Tuesday, May 30 • 13:40-14:20
Room: 203D, Symposium: PT10
A Sumptuous Buffet of New Methods in Electronic Structure Theory and Quantum Statistical Mechanics

Alfred Bader Award
Sponsored by Alfred Bader, HFCIC

Andrei K Yudin
University of Toronto
Wednesday, May 31 • 10:40-11:20
Room: 205B, Symposium: OR2
Synthesis of Bioactive Macrocycles

E. W. R. Steacie Award
Sponsored by the E. W. R. Steacie Endowment Fund

Jillian Buriak
University of Alberta
Wednesday, May 31 • 13:40-14:20
Room: 203B, Symposium: PT7
Plasmonic Stamps: Using Plasmons to Drive Nanopatterned Chemistry on Silicon

Fred Beamish Award
Sponsored by Thermo Fisher Scientific

Russ Algar
University of British Columbia
Wednesday, May 31 • 13:40-14:20
Room: 202B, Symposium: AN3
The Small Matter of Bioanalysis: Adventures at Less Than 10 nm with Quantum Dots and/or FRET

Maxxam Award
Sponsored by Maxxam Analytics

Diane Beauchemin
Queen’s University
Wednesday, May 31 • 13:40-14:20
Room: 104D, Symposium: ANG
The Unlimited Capabilities of Inductively Coupled Plasma Spectrometry

Canadian Journal of Chemistry Best Paper Award
Sponsored by Canadian Journal of Chemistry and Canadian Science Publishing (CSP)

James W Gauld
University of Windsor
Wednesday, May 31 • 13:40-14:20
Room: 206B, Symposium: ORG1
Computational Enzymology: Elucidating the Role of Enzyme Active Sites and their Residues In Ligand Binding, Oxidative Protection, and Catalysis

Teva Canada Limited Biological and Medicinal Chemistry Lectureship Award
Sponsored by Teva Canada Limited

John Paul Pezacki
University of Ottawa
Wednesday, May 31 • 13:40-14:20
Room: 104A, Symposium: BM3
Interrogating Host-pathogen Interactions with Activity-based Probes

Keith Laidler Award
Sponsored by the Physical, Theoretical and Computational Chemistry Division

Viktor N Staroverov
University of Western Ontario
Thursday, June 1 • 13:40-14:20
Room: 205C, Symposium: PTG
Wave Functions, Density Functionals, and Kohn-Sham Potentials

Melanie O’Neill Young Investigator Award in Biological Chemistry
Sponsored by Simon Fraser University and the Biological and Medicinal Chemistry Division

Katherine Ryan
University of British Columbia
Unable to Attend
The CIC Live Learning Centre lets you access session recordings online from CIC’s most anticipated events, including this year’s Canadian Chemistry Conference and Exhibition. Catch up on sessions you missed, review information presented by experts in your field and continue your professional development year-round.

Session recordings through the CIC Live Learning Centre are available at no additional cost. Visit the CIC Live Learning Centre now to browse our library of content from past CIC conferences.
The Fellowship of the Chemical Institute of Canada was created as a senior class of membership to recognize outstanding merit of those who have made, or who are clearly in the course of making, a sustained and major contribution to the science or to the profession of chemistry, chemical engineering, or chemical technology.

Roland Andersson, FCIC
Chemical Institute of Canada

Roland Andersson has been executive director of the CIC and its Constituent Societies since 1998. He has played a strong visionary role in bringing together solid partnerships with industry, academia and government. During his term he has built a strong financial and membership base for the CIC. Andersson has brought international recognition of the Institute through national and international conferences. He has been a passionate supporter of process safety management and industrial accident prevention.

Tom Baker, FCIC
University of Ottawa
Department of Chemistry

Tom Baker is a chemistry professor and Canada Research Chair in Catalysis Science for Energy Applications at University of Ottawa. He is an inorganic/organometallic chemist who has had a major impact on green chemistry and catalysis in three different settings – industry, national laboratory, and academia. Baker has served as uOttawa’s CCRI catalysis centre Director, CIC Catalysis Division chair, CSC 2015 Conference chair and on advisory boards for Canadian Journal of Chemistry and GreenCentre Canada.

Aicheng Chen, FCIC
Lakehead University
Department of Chemistry

Aicheng Chen is a professor and Canada Research Chair in Materials and Environmental Chemistry at Lakehead University and an internationally recognized researcher who has made significant contributions to the discipline of electrochemical nanoscience. He is a pioneer in the design of functional nanomaterials for the development of advanced electrochemical technologies for energy, environmental, and medical applications, and has won numerous research awards. Chen has been an active CIC member and involved in many advisory committees, conference organizing committees and editorial boards including associate editor of the *Canadian Journal of Chemistry* and editor of *Electrochimica Acta*.

Phillip Choi, FCIC
University of Alberta
Department of Chemical and Materials Engineering

Phillip Choi, professor in the Department of Chemical and Materials Engineering at the University of Alberta, is a devoted chemical engineering educator and a recognized expert in molecular simulation of polymers and sustainable materials. He has received several awards for his teaching and mentoring of students and has a strong interest in increasing public awareness of the chemical enterprise. Choi has been involved with the CIC as CSChE Local Section Director, Edmonton Section chair and through participation on several conference committees.

James Dickson, FCIC
McMaster University
Department of Chemical Engineering

James Dickson is professor emeritus, Department of Chemical Engineering, McMaster University. He is a renowned researcher in membrane science and technology for nearly 45 years. Dickson has been involved with the Hamilton CIC Local Executive since the late 1980s. He is a strong mentor to undergraduate and graduate students and worked with the Chem Eng Club for over 25 years, encouraging the students, leading to several CSChE Student Chapter Merit Awards and many individual CSChE student scholarships.
Exhibition Hours

Sunday, May 28 • 19:00–22:00
Monday, May 29 • 09:30–19:30
Tuesday, May 30 • 09:30–19:30

Metro Toronto Convention Centre, Hall C

Floor Plan
# List of Exhibitors

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CNC-IUPAC 2018 Travel Awards
Call for Applications

The Canadian National Committee for IUPAC (CNC-IUPAC) established a program of Travel Awards for young Canadian scientists in 1982. Financing is provided by the Canadian Society for Chemistry's Gendron Fund and CNC-IUPAC's Company Associates.

Purpose of the Awards: To help young scientists within 10 years of gaining their PhD, who are currently working at a Canadian institution present a paper at an IUPAC-sponsored conference outside of Canada.

For full details on these awards and how to apply visit: www.cnc-iupac.ca
Application deadline is October 21, 2017.
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Plenary Lectures (PL)
PL1 Plenary Opening
PL2 CIC Medal
PL3 Montréal Medal
PL4 Closing Plenary – Joint CSC/Public Outreach Event

Analytical Chemistry (AN)
– division representative Aaron Wheeler, University of Toronto
AN1 Analytical and Physical Electrochemistry of Materials – joint with MT, PT
AN2 Analytical Separations: Fundamentals, Proof of Principle and Practical Applications
AN3 Applications of Nanomaterials in Analysis, Sensing and Imaging – joint with MT
AN4 Biochemical, Biophysical and Environmental Insights from Mass Spectrometry
AN5 Emerging Applications of Biological and Chemical Sensors with Real Samples
AN6 Portable Analytical Systems and Point-of-Care Analysis
AN7 Teaching Analytical Chemistry
ANG General Session
ANP Poster Session

Biological and Medicinal Chemistry (BM)
– division representative Drew Woolley, University of Toronto
BM1 Bionanomaterials
BM2 Proteins
BM3 Chemical Biology and Imaging – joint with OR
BM4 Bio-inorganic Chemistry – joint with IN
BM5 Medicinal Chemistry – joint with OR
BM6 Nucleic Acid Chemistry and Biology
BMG1 General Session 1
BMG2 General Session 2
BMP Poster Session

Chemistry Education (CE)
– division representatives Andy Dicks and Jessica D’eon, University of Toronto
CE2 Research and Other Forms of Experiential Learning
CE3 Student Presentations in Chemistry Education & Outreach
CE4 Chemistry Education Research
CE5 Guided-inquiry Learning in Chemistry
CE6 Glancing Back and Looking Ahead: Chemistry History, Culture & Outreach
CE7 Instrumental Analysis in Chemistry Education
CE8 First and Second Year Undergraduate Teaching Initiatives
CEG General Session
CEP Poster Session
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Environment (EN)
– division representative Jon Abbatt, University of Toronto

EN1 Atmospheric Chemistry in a Changing Climate
EN2 Metals and Metalloids in the Environment
EN3 Organic Contaminants
EN4 Arctic Chemistry and Biogeochemistry
EN5 From Molecular Structure to Global Processes:
   The Role of Analytical Environmental Chemistry – joint with AN
ENP Poster Session

Industrial Chemistry (IC)
– division representative Matthew Hueft, Xerox Research Centre of Canada

IC1 Sustaining Business Development in the Chemical Sector
IC2 Chemistry-based Entrepreneurs, Ecosystem, and Case Study
IC3 Chemistry-based Start-ups & Small and Medium Enterprises
IC4 Best Practices for Successful Academic-Industry Collaborations
IC5 Innovative Processes for Pharmaceutical & Fine Chemical Manufacturing
IC6 Industrial Water Treatment Technologies – joint with EN
IC7 Life after the Lab: Unconventional Careers for Scientists - joint with CE
ICP Poster Session

Inorganic Chemistry (IN)
– division representative Bob Morris, University of Toronto

IN1 Transition Metal Alkyl Chemistry
IN2 Transition Metal Derivatives of Non-innocent Ligands
IN3 Recent Advances in Sustainable Chemistry – joint with EN, IC
IN4 Main Group Transformations and Catalysis – joint with the Royal Society of Chemistry and OR
IN5 Advances in Solid State Chemistry
IN6 Crystalline and Semi-crystalline Molecule-based Materials – joint with MT
ING1 General Session 1
ING2 General Session 2
ING3 General Session 3
INP Poster Session

Macromolecular Science and Engineering (MS)
– division representative Eugenia Kumacheva, University of Toronto

MS1 Frontiers in Controlled Polymerization – joint with IN
MS2 Polymers with Biological and Medicinal Applications
MS3 Supramolecular Assembly of Macromolecules and Nanoscale Materials
MS4 Stimuli-responsive Polymers and Polymer Gels
MS5 Macromolecules Containing Metal and Inorganic Elements
MS6 Surfactants in Macromolecular Science
MSG General Session
MSP Poster Session
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Symposia

Materials Chemistry (MT)
- division representative Dwight Seferos, University of Toronto

MT1 Singlet Fission Materials
MT2 Electronic Materials and their Chemistry (Organic, Inorganic and Hybrid Materials)
MT3 Emerging Materials Researchers
MT5 Metal and Covalent Organic Frameworks
MT6 Nano/Hybrid Materials – joint with MS
MT7 Dye Chemistry
MT8 Optics in Soft Materials
MTG1 Physical, Theoretical and Computational/Materials Chemistry Joint General Session
MTG2 General Session 2
MTP Poster Session

Organic Chemistry (OR)
- division representative Andrei Yudin, University of Toronto

OR1 New Frontiers in Peptide Science – joint with BM
OR2 A Century of Organic Synthesis in Australia and Canada
OR3 Reactivity in Organic and Biological Chemistry – joint with BM
OR4 Boron in Modern Organic Synthesis and Catalysis
OR5 Recent Advances in Metal-free Transformations
OR6 Transition Metal Catalysis for Organic Synthesis
OR7 Advances in Heterocycle Synthesis
OR8 Recent Advances in the Generation, Utilization and Understanding of Radicals – joint with IN
OR10 Fluorinated Molecules: Syntheses, Analyses, and Applications – joint with BM
ORG1 General Session 1
ORG2 General Session 2
ORP Poster Session

Physical, Theoretical and Computational Chemistry (PT)
- division representatives Scott Prosser and Dvira Segal, University of Toronto

PT1 Advances in Solid State NMR: Inorganic Materials, Biological Solids and Theoretical Methods
PT2 Electron Localization and Delocalization: Theory, Measures, and Applications in Chemistry
PT3 Interactions of Charged Species in Droplets and Bulk
PT4 Nanoengineered Materials: Fundamentals and Applications
PT5 Noncovalent Interactions in Quantum Chemistry and Physics: Theory and Applications
PT6 Statistical Mechanics of Soft Matter
PT7 Plasmonics for Chemistry and Biology
PT8 Quantum Coherence and Dynamics in Biological Processes
PT9 Quantum Dynamical Phenomena in Chemistry
PT10 Electronic Structure Theory
PT11 Protein Machines and Allostery
PT12 Ultrafast Spectroscopy and Imaging of Molecular Processes
PTG General Session
PTP Poster Session

Surface Science (SS)
- division representative Bernie Kraatz, University of Toronto

SS1 Self-assembly at Surfaces
SS2 Surface Science in Honour of Peter Norton
SS3 Surface Electrochemistry
SSP Poster Session
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