

International Symposium on Electrochemistry and Surface Science

*in Honour of the 80th Birthday of
Professor Jacek Lipkowski*

August 14 – 17, 2024

CONFERENCE PROGRAM



Rozanski Hall, University of Guelph

98 Trent Lane, Gordon St, Guelph, ON, Canada

This Special International Symposium would not be possible without the generous support of our sponsors



Welcome to the ISESS

The ISESS organization committee is pleased to welcome you to the University of Guelph to celebrate the achievements of Professor Jacek Lipkowski on his 80th Birthday. We have an excellent program over four days consisting of over 140 presentations, including a plenary lecture, nine keynote lectures, 110 oral presentations, and 25 posters.

The conference begins on Wednesday with a plenary lecture from Professor Jacek Lipkowski before breaking into two parallel sessions and capping off the day with the Welcome Barbecue. The sessions on Thursday and Friday follow a similar format; however, these days will conclude with a poster session (including a student awards and celebratory banquet, respectively). On Friday afternoon and Saturday morning, we have 22 student presentations, with the top 2 presentations in each parallel session receiving an award. The student poster and presentation awards have been generously donated by the Physical, Theoretical and Computational Chemistry Division of Chemical Institute of Canada, the Electrochemical Society Canada Section, and the International Society of Electrochemistry.

To create a relaxing environment, maximize networking, and allow you to catch up with old friends and acquaintances, all coffee breaks and meals (including the banquet) have been included in your registration. In addition, the University of Guelph is close to downtown Guelph, which has many charming shops and restaurants. On Saturday afternoon, there will be free tours of the university campus and the City of Guelph, as well as an excursion to Niagara Falls (for a fee). There will be bus transportation from Guelph to Montreal on Sunday morning for those attending the 75th Annual Meeting of the ISE (for a fee). If you require additional tickets for the banquet or the Niagara Falls excursion, or transportation to Montreal, please inquire at the registration desk for more information. We hope that you have an opportunity to take part in many fruitful discussions and enjoy your visit to the University of Guelph. Finally, the organizing committee would just like to say “many thanks” for attending the ISESS.

ISESS Conference Chair

Aicheng Chen (University of Guelph, Canada)

Webmaster

Emad Hatami (University of Guelph, Canada)

ISESS Organizing Committee Members

Jay Leitch (University of Guelph, Canada)

John Dutcher (University of Guelph, Canada)

Khashayar Ghandi (University of Guelph, Canada)

Liliana Trevani (Ontario Tech University, Canada)

Sylvie Morin (York University, Canada)

Zhifeng Ding (Western University, Canada)

ISESS INFORMATION

Registration Desk

All attendees are required to sign in at the registration desk located in the foyer of Rozanski Hall (ROZH) and pick up your delegate information bags. The registration desk will be open all day on August 14 and the morning of August 15

Internet Access

Free Wi-Fi access is available on the University Campus by connecting to “uog-guest” network and entering the following:

Username: isess@uogconf.ca

Password: chem150

[Note: if the page does not load automatically, please type “neverssl.com” into the browser on your device and this should prompt the login page]

Conference Parking

If you have not purchased your parking permit during your registration, Daily Visitor Parking is available using **Lot P31** on South Ring Road E. (near the University Bus Loop) using the Honk Mobile App or website (<https://parking.honkmobile.com/parking>) at a rate of \$21.35 per day.

Oral Presentations

Oral Presentations will be held in ROZH 102 & ROZH 103. Oral presentations are 20 min (or 30 min for keynote) including questions. Please make sure that your presentation is ready to minimize the transition time between each speaker.

Poster Presentations

Posters will be placed on the numbered poster boards located in the foyer of Rozanski Hall. Please use the thumb tacks provided on each board to hang your poster (no masking tape or duct tape on boards). The number on each poster board corresponds to the listing in your program.

Presenters should set up their posters on Wednesday, August 15 (by the end of day) and remove them before 1 pm on Saturday, August 17. Presenters must attend their posters from 18:40 – 20:30 on Thursday, August 16th to be eligible for poster prizes. The poster award winners will be announced at the banquet on Friday, August 16.

Student Presentation Competition

Student presentations are 15 min in length including questions. There will be two parallel competitions occurring in ROZH 102 & ROZH 103 where the top 3 presentations will be awarded a cash prize. To ensure a smooth transition between each talk, please ensure that your presentation is ready.

Exhibitors

1. OCI Vacuum Microengineering

200 Stronach Crescent
London, ON, CA, N5V 3A1

Tel: 519-457-0878

Email: info@ocivm.com

Website: <http://www.ocivm.com/>



2. Metrohm Canada

4160 Sladeview Crescent, #6
Mississauga, ON, CA, L5L 0A1

Tel: 1-905-569-0664

Email: robert.leblanc@metrohmca.com

Website: <https://www.metrohm.com>



3. Systems for Research

7 – 4243C Dundas Street West
Etobicoke, ON, CA, M8X 1Y3

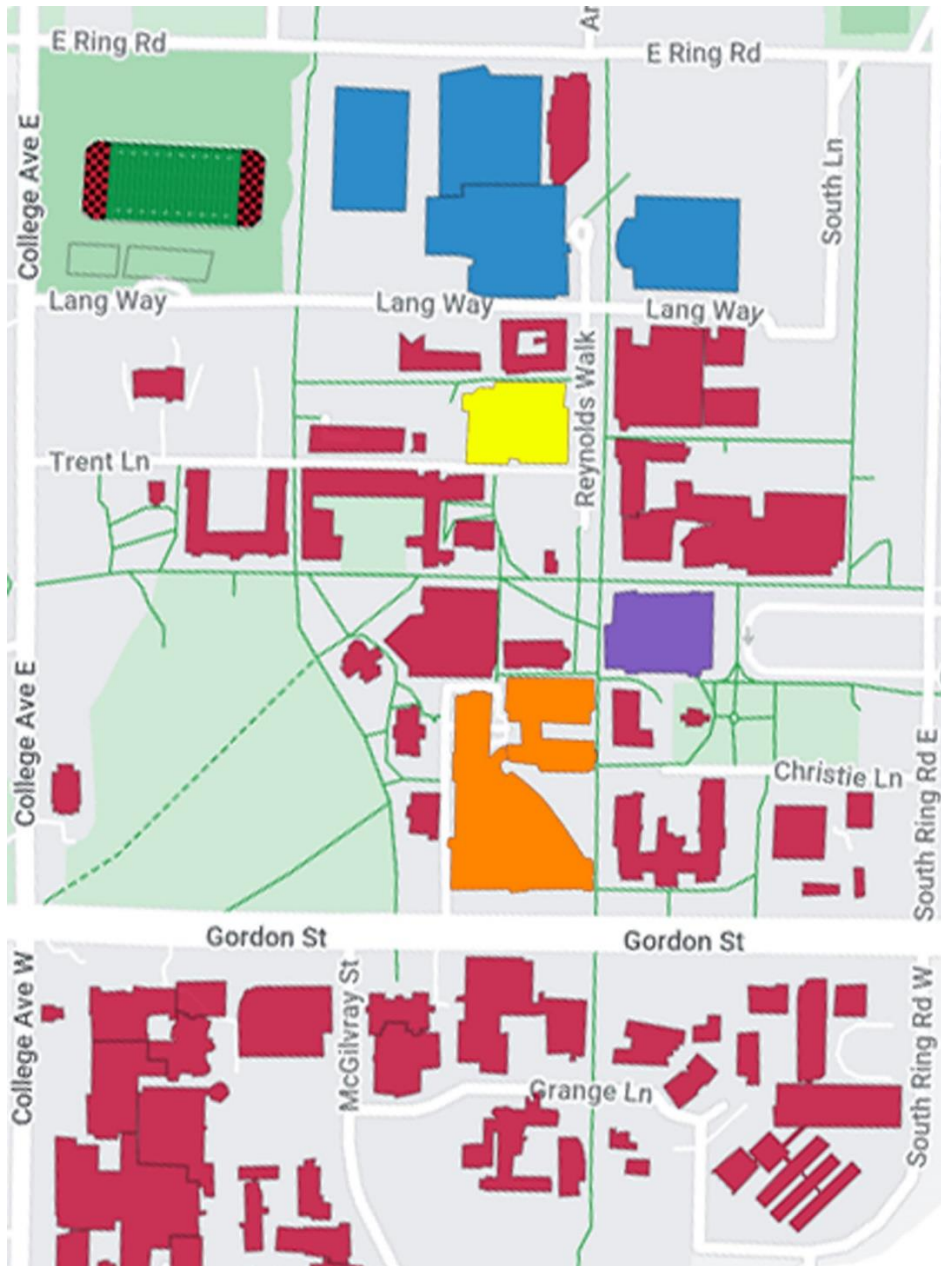
Tel: 1-888-802-0737

Email: info@sfr.ca

Website: <http://www.sfr.ca/>



Campus Map



Rozanski Hall is shown in Yellow

University Center shown in Purple

Science Complex /MacNaughton Building are shown in Orange

Plenary Speaker

Professor Jacek Lipkowski



Jacek Lipkowski is a University Professor Emeritus at the University of Guelph, Guelph, Ontario, Canada. He received his PhD and DSc from the University of Warsaw, Poland and moved to Canada in 1983. He has made several outstanding contributions to fundamental electrochemistry, including quantitative description of adsorption at gold and platinum single crystal electrodes, development quantitative IR spectroscopy of thin films at electrode surfaces, understanding of surface aggregation phenomena and application of surface electrochemistry tools to study biomimetics. He has authored over 260 papers and several book chapters. He served as co-editor of a series “Advances in Electrochemical Sciences and Engineering” and Journal of Electroanalytical Chemistry. Dr Lipkowski is Fellow of the Royal Society of Canada, Foreign Member of the Polish Academy of Sciences, Killam Fellow, Fellow of the International Society of Electrochemistry (ISE), honorary member of the Polish Chemical Society. He is a recipient of several awards including Gold Medal, Jacques Tacussel Prize, Bioelectrochemistry Prize and Frumkin Medal of ISE, Alcan Medal and John Polanyi Award of the Canadian Society for Chemistry, E. Yeager Award of ECS, Zawidzki Medal of the Polish Chemical Society and Alexander von Humboldt Stiftung Research Award.

Keynote Speakers

Professor Renata Bilewicz



Renata Bilewicz studied chemistry at the University of Warsaw and completed her PhD in 1984 in the field of electroanalytical chemistry under supervision of Zenon Kublik. She completed post-doc positions in the Janet and Robert Osteryoung lab in NYU-Buffalo working on pulse voltammetry methods, and UC Berkeley with Marcin Majda on self-assembly and Langmuir-Blodgett monolayers. In 2000, she became professor at the University of Warsaw where she is currently heading the Laboratory of Theory and Applications of Electrodes and Laboratory of Bionanostructures [Biological and Chemical Research Centre (CNBCh UW)]. Her research interests cover electron transfer processes in supramolecular and biomolecular systems, bioelectrocatalysis and molecular self-assembly. She employs Langmuir-Blodgett, self-assembled films, and lipid-liquid crystalline mesophases as biocompatible molecular matrices to study the incorporation of drugs, peptides and integral membrane proteins.

Professor Frank Marken



Frank Marken obtained a Dr. rer. nat. degree at RWTH Aachen (Germany) and was Feodor-Lynen Fellow at La Trobe University, Melbourne (Australia). He worked as a Stipendiary Lecturer at Oxford and at Loughborough University (UK). In 2004, he moved to the University of Bath. In 2011, he was promoted to a personal chair in physical chemistry. Research is linked to the Institute of Sustainability (IoS) and the Water Innovation Research Centre (WIRC) at Bath and focused on pure and materials electrochemistry, electroorganic processes, and energy storage.

Professor Shi-Gang Sun



Shi-Gang Sun obtained his Bachelor of Science in 1982 from Xiamen University, China, and Doctorat d'Etat (Docteur ès Sciences Physiques) from Université Pierre et Marie Curie (Paris VI) in 1986, France. After a one-year post-doctoral research at the Laboratoire d'Electrochimie Interfaciale du CNRS in France, he returned to Xiamen University in 1987 as an associate professor. Prof. Sun's main research interests include surface science, electrocatalysis, spectroelectrochemistry, nanomaterials and chemical power sources (Batteries, Fuel Cells). He has published more than 850 SCI papers with peer citation over 48,000, awarded 40 innovation patents, and authored 5 books. He is a fellow of the International Society of Electrochemistry, Royal Society of Chemistry, Chinese Chemical Society, Chinese Society of Chemical Engineering, China Society of Micro and Nanotechnology. Prof. Sun has been awarded the Brian Conway Prize, Distinguished Contribution Award, Le prix Franco-Chinois 2014-2015 and the State Natural Science Award (2nd Degree) of China, Achievement Award from International Automotive Lithium Battery Association, and Achievement award in spectroscopy from Chinese Chemical Society and Chinese Optics Society.

Professor Andrew A. Gewirth



Professor Andrew A. Gewirth received his A.B. from Princeton University in 1981 and his Ph.D. from Stanford University in 1987. He joined the Illinois faculty in 1988 after postdoctoral work at the University of Texas. A former Director of the School of Chemical Sciences at the University of Illinois, Professor Gewirth has received several awards, among them a Presidential Young Investigator Award and the Department of Energy Outstanding Accomplishment Award in Materials Chemistry. Gewirth's work addresses chemistry at interfaces, especially the solid-liquid interface in studies relevant to fuel cells, batteries, and other energy related devices. Gewirth uses advanced characterization techniques to examine the mechanism of interfacial electrochemical reactions and uses the resultant understanding to design new materials and catalysts. He has authored over 290 papers, delivered over 200 invited talks, organized several conferences, chaired a US Department of Energy panel examining the future of electrical energy storage devices, and served as the University of Illinois lead for the Center for Electrical Energy Storage EFRC.

Professor Tsun-Kong (T.K.) Sham



T.K. Sham is a Distinguished University Professor at Western University and a Fellow of the Royal Society of Canada. He received a PhD from Western before joining the staff at Brookhaven National Laboratory for a decade. In 1988, he returned to Western as a professor, where he held a Canada Research Chair in Materials and Synchrotron Radiation (2002-2023). He was the Director of the Canadian Synchrotron Radiation Facility at the Synchrotron Radiation Center, University of Wisconsin-Madison (1999-2008), and a founding member of the Canadian Light Source. He was appointed the Order of Canada in 2016 for his scientific contributions and community service. He is a world leader in the synergistic study of nanomaterials and X-ray spectroscopy. His recent works include controlled alloying, nanostructure phase transition, heterostructure interface and energy transfer in the nano domain, in situ/operando studies of energy devices and cultural heritage materials. Dr. Sham served as the Chair of the International X-ray Absorption Society (2003-2006). He is currently the Chair of the Ontario Synchrotron Consortium and a member of the Board of the Canadian Institute for Synchrotron Radiation (CISR).

Professor Carol Korzeniewski



Carol Korzeniewski is a Professor of Chemistry at Texas Tech University. She received B.S. (Oakland University) and Ph.D. (University of Utah) degrees in Chemistry and did postdoctoral research at the University of Texas working in the field of surface chemistry with emphasis on surface sensitive optical measurements. Her research focuses on applications of infrared and Raman spectroscopy in electrochemistry. Practical areas of interest include electrocatalysis and soft materials characterization

Professor Olaf M. Magnussen



Olaf M. Magnussen is a full professor of solid-state physics at Kiel University, Germany, since 2001. He obtained his Ph.D. from Ulm University, Germany, in the group of Prof. Jürgen Behm in 1993. After completing a post-doc with Dr. Ben Ocko at Brookhaven National Laboratory, he returned to Ulm, where he obtained his habilitation in 2001. His research is centered around studying the atomic-scale structure and dynamics of electrochemical interfaces. He has been developing in situ and operando techniques, especially scanning tunneling microscopy and synchrotron-based X-ray scattering, for the past 30 years and employed these methods to studies of electrode surface structure, adsorbate layers, liquid-liquid interfaces, electrodeposition, corrosion, and electrocatalytic processes. His current research focuses on operando studies of electrocatalysts for energy conversion.

Professor Pawel J. Kulesza



Pawel J. Kulesza is Professor of Chemistry at University of Warsaw, Fellow of the Electrochemical Society, and Member of the Polish Academy of Sciences. His recent interests concern development and characterization of hierarchical and functionalized inorganic nanomaterials and interfaces of importance to electrocatalysis, photoelectrochemistry, analytical chemistry, energy conversion and storage. He is an Associate Editor of *Electrochimica Acta* (Elsevier) and a member of editorial boards of *Journal of Solid-State Electrochemistry*, *Electrocatalysis*, *Russian Journal of Electrochemistry* (Springer) and *Catalysts* (MDPI). He has been an active member of the Electrochemistry Society, as a committee member and symposia organizer, in addition to his role as Chair of the Physical Analytical Electrochemistry Division and Chair of European Section. Pawel is a recipient of Alessandro Volta Medal of Electrochemical Society (2024). He is also a member of American Chemical Society, International Society of Electrochemistry, and Polish Chemical Society.

Professor Enrique Herrero



Enrique Herrero received his Ph.D. from the University of Alicante, Spain, in 1995. After a postdoctoral stay at Cornell University, he joined the Faculty of the University of Alicante as an assistant professor in 1997. He is currently Professor of Physical Chemistry and director of the Institute of Electrochemistry at the University of Alicante. His scientific career has been devoted to studying the relationship between interfacial structure and electrocatalysis, especially of the reactions involved in fuel cells. He has published more than 240 articles in indexed journals and more than 20 book chapters. Recently, he was elected as vice president of the International Society of Electrochemistry for the period 2025 – 2027.

ISESS2024 Day 1: Wednesday, August 14 @ Rozanski Hall, University of Guelph

8:00 – 8:30	REGISTRATION (Rozanski Concourse)	
8:30 – 9:00		
9:00 – 9:30	OPENING REMARKS (ROZH 103)	
9:30 – 10:20	<i>Chair</i> (ROZH 103): <i>Aicheng Chen</i> Jacek Lipkowski	
10:20 – 10:40	COFFEE	
10:40 – 11:00	<i>Co-chairs</i> (ROZH 103): <i>Slawomir Sek</i> <i>Antonella Badia</i>	<i>Co-chairs</i> (ROZH 102): <i>Anne Co</i> <i>Drew Higgins</i>
	Ian Burgess	Drew Higgins
11:00 – 11:20	Dorota Matyszewska	Fumiaki Amano
11:20 – 11:40	Antonella Badia	Zhe She
11:40 – 12:00	Zhifeng Ding	Anne Co
12:00 – 12:20	Slawomir Sek	De-Yin Wu
12:20 – 13:30	LUNCH	
13:30 – 14:00	<i>Chair</i> (ROZH 103): <i>Liliana Trevani</i>	
	Renata Bilewicz	
14:00 – 14:30	Frank Marken	
14:35 – 14:55	<i>Co-chairs</i> (ROZH 103): <i>Alexandre Brolo</i> <i>Christa Brosseau</i>	<i>Co-chairs</i> (ROZH 102): <i>Jing-Li Luo</i> <i>Song-Zhu S. Kure-Chu</i>
	Christa Brosseau	Song-Zhu S. Kure-Chu
14:55 – 15:15	Peter Tremaine	Fu-Ming Wang
15:15 – 15:35	Alexandre Brolo	Jing-Li Luo
15:35 – 15:55	Liliana Trevani	Weiran Zheng
15:55 – 16:10	COFFEE	
16:10 – 16:30	<i>Co-chairs</i> (ROZH 103): <i>James Noel</i> <i>Michael Eikerling</i>	<i>Co-chairs</i> (ROZH 102): <i>Rodney Smith</i> <i>Samantha Gateman</i>
	Chuan-Jian Zhong	Christian Kuss
16:30 – 16:50	Michael Eikerling	Dongling Ma
16:50 – 17:10	Iwona Rutkowska	Samantha Gateman
17:10 – 17:30	Dominic Rochefort	Rodney Smith
17:30 – 17:50	James Noel	Sharon Chen
17:50 – 18:10	Zhangfei Su	Samaneh Shahgaldi
18:20 – 20:30	WELCOME BBQ (Rozanski Concourse)	

Wednesday, August 14: Morning Session

8:00 - 9:00: **Registration** in the Rozanski Concourse

Plenary Session: ROZH 103

Chair: *Aicheng Chen*

9:00 - 9:30: **Opening Remarks**

9:30 - 10:20: **IR studies of proteins and peptides in bilayers deposited on a gold electrode surface** Jacek Lipkowski, Department of Chemistry, University of Guelph.

10:20 - 10:40: **Coffee Break**

Section 1: ROZH 103

Chairs: *Antonella Badia, Slawomir Sek*

10:40 - 11:00: **Time Resolved Infrared Spectroelectrochemistry** Ian J. Burgess, Department of Chemistry, University of Saskatchewan.

11:00 - 11:20: **Interactions of Model Lung Surfactants with Inhaled Drugs – Phospholipid Mono- and Bilayer Studies** Dorota Matyszewska, Faculty of Chemistry, Biological and Chemical Research Centre, University of Warsaw.

11:20 - 11:40: **Supported Lipid Bilayer Membranes Formed by Redox-Driven Vesicle Fusion** Antonella Badia, Université de Montréal.

11:40 - 12:00: **Absolute Quantum Efficiencies of Electrochemiluminescence and Chemiluminescence** Zhifeng Ding, Department of Chemistry, Western University.

12:00 - 12:20: **The Role of Synthetic Lipid Bilayers in Advancing Antimicrobial Strategies** Slawomir Sek, University of Warsaw, Faculty of Chemistry, Biological & Chemical Research Centre.

Section 2: ROZH 102

Chairs: *Anne Co, Drew Higgins*

10:40 - 11:00: Understanding Electrochemical CO₂ Conversion Catalysts Through In Situ Microscopy and Spectro-microscopy Drew Higgins, Department of Chemical Engineering, Canadian Centre for Electron Microscopy, McMaster University.

11:00 - 11:20: Conversion of Methane to Ethane and Hydrogen Using Gas-Diffusion Photoanodes under Visible Light Irradiation Fumiaki Amano, Department of Applied Chemistry for Environment, Tokyo Metropolitan University.

11:20 - 11:40: Electrochemical Study of N-heterocyclic Carbenes on Gold Zhe She, Department of Chemistry, Queen's University.

11:40 - 12:00: The Effect of Local pH and Cations on the Selectivity of CO₂ Electroreduction Anne Co, Ohio State University.

12:00 - 12:20: Electrochemical Surface-Enhanced Raman Spectroscopic Study of Adenine and Its Derivatives on Silver and Gold Electrodes De-Yin Wu, State Key Laboratory of Physical Chemistry of Solid Surfaces, Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University.

12:20 - 13:30:

Lunch

Wednesday, August 14: Afternoon Session

Keynote Session: ROZH 103

Chair: *Liliana Trevani*

13:30 - 14:00: Magnetic Alignment for Enhanced Ion Transport in Lipidic Hexagonal Phases Containing Gramicidin Potassium Ion Channel Renata Bilewicz, Faculty of Chemistry, University of Warsaw.

14:00 - 14:30: Coupling Ionic Diodes in Membranes for Desalination and Electroosmotic Water Transport Frank Marken, Department of Chemistry, University of Bath.

Section 3: ROZH 103

Chairs: *Alexandre Brolo, Christa Brosseau*

14:35 - 14:55: Electrochemical SERS on a Shoestring Budget: Revisited Christa Brosseau, Department of Chemistry, Saint Mary's University.

14:55 - 15:15: Thermodynamic and Transport Properties of Aqueous Boron and Polyborate Species under Hydrothermal Conditions by AC Conductivity and Raman Spectroscopy Peter R. Tremaine, Department of Chemistry, University of Guelph.

15:15 - 15:35: Single Particle Imaging Using Plasmonic Nanostructures Alexandre G. Brolo, Department of Chemistry, University of Victoria.

15:35 - 15:55: New Channel Flow Cell Design for Electrochemical Studies under Hydrothermal Conditions Liliana Trevani, Faculty of Science, Ontario Tech University.

Section 4: ROZH 102

Chairs: *Jing-Li Luo, Song-Zhu S. Kure-Chu*

14:35 - 14:55: Tuning the Nanostructures of Porous TiO₂-TiO-TiN Films through Smart Anodization for Enhancing Performance as High-Safety LIB Anodes with Large Capacity Song-Zhu S. Kure-Chu, Department of Materials Function and Design, Nagoya Institute of Technology.

14:55 - 15:15: Investigations of An Organic Catalyst to Ni-rich Cathode Materials: Effects on Deteriorated, Cathode Electrolyte Interphase, and Chemical Crossover Fu-Ming Wang, Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology.

15:15 - 15:35: Application of Perovskites in Electrosynthesis of High-Value Fuels in Solid Oxide Cells Jing-Li Luo, Shenzhen Key Laboratory of Energy Electrocatalytic Materials, College of Materials Science and Engineering, Shenzhen University.

15:35 - 15:55: Probing the Impact of Co-existing O₂ on Ammonia Electrooxidation by NiOOH Surface Weiran Zheng, Guangdong Technion-Israel Institute of Technology.

15:55 - 16:10:

Coffee Break

Section 5: ROZH 103

Chairs: *James Noël, Michael Eikerling*

16:10 - 16:30: Lattice Structures of Alloy Nanowire and Nanoparticle Catalysts in Electrocatalysis Chuan-Jian Zhong, Department of Chemistry, Binghamton University.

16:30 - 16:50: Unraveling the Local Reaction Environment in Electrocatalytic Media: Recent Forays in Theory and Computation Michael Eikerling, Theory and Computation of Energy Materials (IEK-13), Institute of Energy and Climate Research, Faculty of Georesources and Materials Engineering, RWTH Aachen University.

16:50 - 17:10: Hybrid Cobalt-Containing Electrocatalytic Systems for Water Oxidation in Acid Medium Iwona A. Rutkowska, Faculty of Chemistry, University of Warsaw.

17:10 - 17:30: Electron Transfer of Ferrocene in Highly Concentrated Electrolytes Dominic Rochefort, Département de Chimie, Université de Montréal.

17:30 - 17:50: The Roles of Mo and Cr During the Breakdown and Repassivation of Oxide Films Formed on Ni-based Alloys in Acidic Media and During Crevice Corrosion James J. Noël, Department of Chemistry, University of Western Ontario.

17:50 - 18:10: In situ polarization modulation infrared reflection absorption spectroscopy studies of electrochemical processes on the gold electrode surface Zhangfei Su, Electrochemical Technology Center, Department of Chemistry, University of Guelph.

Section 6: ROZH 102

Chairs: *Rodney Smith, Samantha Gateman*

16:10 - 16:30: Conducting Polymers as Binders in Lithium-ion Batteries Christian Kuss, Department of Chemistry, University of Manitoba.

16:30 - 16:50: Towards Broadband Photocatalysis Dongling Ma, Institut National de la Recherche Scientifique.

16:50 - 17:10: The Effect of Redox Mediators in Localized Corrosion Studies using Scanning Electrochemical Microscopy Samantha M. Gateman, Department of Chemistry and Surface Science Western, Western University.

17:10 - 17:30: Fine Structure of Highly Disordered Heterogeneous Electrocatalysts Rodney D. L. Smith, Department of Chemistry, University of Waterloo.

17:30 - 17:50: Baseline Measurement of Gold Nanomaterials for CO₂ Conversion – Towards a Self-Driving Laboratory for Optimization Sharon Chen, Clean Energy Innovation Research Centre, National Research Council Canada.

17:50 - 18:10: Synthesis of Lignin-Derived Carbon Catalyst via Polyol Method for the Proton Exchange Membrane Fuel Cell Application Samaneh Shahgaldi, Département de chimie, biochimie et physique, Université Du Québec À Trois-Rivières

18:20 - 20:30:

Welcome Barbecue!

ISESS2024 Day 2: Thursday, August 15 @ Rozanski Hall, University of Guelph

8:20 – 8:50	Chair (ROZH 103): <i>Zhifeng Ding</i>	
	Shi-Gang Sun	
8:50 – 9:20	Andrew Gewirth	
9:25 – 9:45	Co-chairs (ROZH 103): <i>Bin Ren</i> <i>Kristina Tschulik</i>	Co-chairs (ROZH 102): <i>Shuhui Sun</i> <i>Carlos Martínez-Huitle</i>
	Bin Ren	Carlos Martínez-Huitle
9:45 – 10:05	Kristina Tschulik	Shuhui Sun
10:05 – 10:25	Peng Zhang	Minghua Zhou
10:25 – 10:40	COFFEE	
10:40 – 11:00	Co-Chairs (ROZH 103): <i>Ian Burgess</i> <i>Shen Ye</i>	Co-chairs (ROZ 102): <i>Hye Jin Lee</i> <i>Nianqiang Wu</i>
	Shen Ye	Gaixia Zhang
11:00 – 11:20	Robert Hillman	Jichang Wang
11:20 – 11:40	Yao Zhou	Nianqiang Wu
11:40 – 12:00	Izabella Brand	Chia-Liang Sun
12:00 – 12:20	Yanxia Jiang	Hye Jin Lee
12:20 – 13:30	LUNCH	
13:30 – 14:00	Chair (ROZH 103): <i>John Dutcher</i>	
	Tsun-Kong (TK) Sham	
14:00 – 14:30	Carol Korzeniewski	
14:35 – 14:55	Co-chairs (ROZ 103): <i>Sabine Kuss</i> <i>Hua Zhong Yu</i>	Co-chairs (ROZ 102): <i>Yujun Shi</i> <i>Ana C. Tavares</i>
	John Dutcher	Zhi-You Zhou
14:55 – 15:15	Hua Zhong Yu	Ana C. Tavares
15:15 – 15:35	R. M Souto	Yujun Shi
15:35 – 15:55	Sabine Kuss	Wei-Ren Liu
15:55 – 16:10	COFFEE	
16:10 – 16:30	Co-chairs (ROZ 103): <i>Tong Leung</i> <i>David Harrington</i>	Co-chairs (ROZ 102): <i>Huiyan Li</i> <i>Sanela Martic</i>
	Tong Leung	Abdallah Elsayed
16:30 – 16:50	Toufik Chaabane	Sanela Martic
16:50 – 17:10	David Harrington	Huiyan Li
17:10 – 17:30	Richard Manderville	Emmanuel Mena-Morcillo
17:30 – 17:50	Aicheng Chen	Carley Miki
18:00 – 20:00	POSTER SESSION	

Thursday, August 15: Morning Session

Keynote Session: ROZH 103

Chair: *Zhifeng Ding*

8:20 - 8:50: Studies of Electrochemical Energy Processes by Developing In-situ/Operando techniques Shi-Gang Sun, State Key Laboratory of Physical Chemistry of Solid Surfaces, Department of Chemistry, Xiamen University.

8:50 - 9:20: Controlling Electrocatalytic Reactivity Using Electrodeposited and Polymer-modified Electrodes Andrew A. Gewirth, University of Illinois.

Section 1: ROZH 103

Chair: *Kristina Tschulik, Bin Ren*

9:25 - 9:45: Electrochemical Tip-enhanced Raman Spectroscopy for Nanoscale Studying Electrochemical Reactions Bin Ren, State Key Laboratory of Physical Chemistry of Solid Surfaces, iChEM, College of Chemistry and Chemical Engineering, Xiamen University.

9:45 - 10:05: Exploiting Single Nanoparticle and Spectro-Electrochemistry to Explore Solvent and Anion Adsorption at Metal Catalysts *Kristina Tschulik*, Analytical Chemistry II, Ruhr University Bochum.

10:05 - 10:25: Surface Structure and Properties of Metal and Alloy Nanostructures from Synchrotron X-ray Spectroscopy Peng Zhang, Department of Chemistry, Dalhousie University

Section 2: ROZH 102

Chair: *Shuhui Sun, Carlos Martinez-Huitle*

9:25 - 9:45: Replacing Oxygen Evolution Reaction in Water Splitting Process by Electrochemical Energy-Efficient Production of Anodic Valuable Chemical (persulfate) with co-generation of green H₂ Carlos A. Martínez-Huitle, Renewable Energies and Environmental Sustainability Research Group, Institute of Chemistry, Federal University of Rio Grande do Norte.

9:45 - 10:05: **Advanced Electrocatalysts for Fuel Cells and Hydrogen Generation** Shuhui Sun, Institut National de la Recherche Scientifique (INRS), Centre Énergie Matériaux Télécommunications.

10:05 - 10:25: **Cathode Regulation for High-Efficiency Electrocatalytic Water Purification** Minghua Zhou, College of Environmental Science and Engineering, Nankai University.

10:25 - 10:40: **Coffee Break**

Section 3: ROZH 103

Chairs: *Ian Burgess, Jian-Feng Li*

10:40 - 11:00: **Structures and Reactivities on a Lipid Membrane Surface Investigated by SFG Spectroscopy and AFM** Shen Ye, Department of Chemistry, Graduate School of Science, Tohoku University.

11:00 - 11:20: **Electrochemical Visualization of Latent Fingerprints: Fundamental Concepts, Imaging Strategies and Technology Transfer** Robert Hillman, University of Leicester.

11:20 - 11:40: **Evolution of Cationic Vacancy Defects: A Motif for Surface Restructuration of OER Precatalyst** Yao Zhou, College of Energy, Xiamen University.

11:40 - 12:00: **From a phosphatidylcholine bilayer to model cellular systems explaining lipid-protein interactions occurring at biological membranes** Izabella Brand, Institute of Chemistry and Research Center for Neurosensory Sciences, Carl von Ossietzky Universität Oldenburg

12:00 - 12:20: **In-situ Observation of the Structure and Performance Evolution for Atomic Fe-N₄ During Thermal Activation** Yanxia Jiang, Department of Chemistry, Xiamen University.

Section 4: ROZH 102

Chairs: *Hye Jin Lee, Nianqiang Wu*

10:40 - 11:00: **Electrodes and Electrolytes Design for Next-Generation Batteries** Gaixia Zhang, Department of Electrical Engineering, École de Technologie Supérieure (ÉTS).

11:00 - 11:20: Synthesis of doped carbon materials for applications in energy storage and conversion Jichang Wang, Department of Chemistry and Biochemistry, University of Windsor.

11:20 - 11:40: Spectro-electrochemical Characterization of Carbon-based Electrocatalysts and Photocatalysts for Clean Fuel Generation Nianqiang Wu, Department of Chemical Engineering, University of Massachusetts Amherst.

11:40 - 12:00: Lighting up Graphene Oxide Nanoribbons for Photoelectrochemical Reactions Chia-Liang Sun, Department of Chemical and Materials Engineering, Chang Gung University.

12:00 - 12:20: Enhanced Biosensing with Voltammetric Platforms Incorporating Hybrid Nanomaterials Hye Jin Lee, Department of Chemistry, Kyungpook National University.

12:20 - 13:30: Lunch

Thursday, August 15: Afternoon Session

Keynote Session: ROZH 103

Chair: *John Dutcher*

13:30 - 14:00: Tracking Electrochemical Behavior of Energy Devices and Surface Corrosion Using Synchrotron X-ray Techniques Tsun-Kong (TK) Sham, Department of Chemistry, Western University.

14:00 - 14:30: Confocal Raman Microscopy in the Study of Electrode-Supported Films Carol Korzeniewski, Texas Tech University.

Section 5: ROZH 103

Chairs: *Sabine Kuss, Hua Zhong Yu*

14:35 - 14:55: Phytoglycogen: Soft Nanoparticles with Tunable Properties John R. Dutcher, Department of Physics, University of Guelph.

14:55 - 15:15: Quantitation of Supramolecular Host-Guest Complexation on Surface: from Nanostructure Differentiation to Electrochemical Sensing Hua-Zhong “Hogan” Yu, Department of Chemistry, Simon Fraser University.

15:15 - 15:35: Imaging the Early Stages of Certain Metal Degradation Processes under Organic Coatings using Scanning Microelectrochemical Techniques R. M. Souto, Electrochemistry and Corrosion Division, Institute of Material Science and Nanotechnology, University of La Laguna.

15:35 - 15:55: Chemoresistance Monitoring in Ovarian Cancer using Scanning Electrochemical Microscopy Sabine Kuss, Department of Chemistry, University of Manitoba.

Section 6: ROZH 102

Chairs: *Yujun Shi, Ana C. Tavares*

14:35 - 14:55: New design strategy of CO-tolerant catalysts through blocking layer Zhi-You Zhou, State Key Laboratory of Physical Chemistry of Solid Surfaces, College of Chemistry and Chemical Engineering, Xiamen University.

14:55 - 15:15: Graphene-type materials for simple fabrication of robust electrochemical aptasensors Ana C. Tavares, Institut National de la Recherche Scientifique – Centre Énergie Matériaux Télécommunications.

15:15 - 15:35: Ligand-free Au-Pt and Au-Ag Nanoparticle Array Formation on Patterned Dimpled Tantalum Substrates and Their Electrochemical Characterization Yujun Shi, Department of Chemistry, University of Calgary

15:35 - 15:55: Silicon/hard Carbon Composites Derived from Phenolic Resin as Anode Materials for Lithium-ion Batteries Wei-Ren Liu, Department of Chemical Engineering, R&D Center for Membrane Technology, Center for Circular Economy, Chung Yuan Christian University.

15:55 - 16:10: Coffee Break

Section 7: ROZH 103

Chairs: *David Harrington, Tong Leung*

16:10 - 16:30: Nanowires and Size-specific Nanoclusters for Sensing and Photoelectrochemical Water Splitting Tong Leung, WATLab and Department of Chemistry, University of Waterloo.

16:30 - 16:50: Implication of MgAl-layered Double Hydroxides (LDH) In Electrocoagulation Processes Using Aluminum Electrodes Toufik Chaabanea, Chemical Engineering Laboratory (LGR), University of Science and Technology Houari Boumediène (USTHB).

16:50 - 17:10: **Electrooxidation of Platinum** David A. Harrington, Chemistry Department, University of Victoria.

17:10 - 17:30: **Unravelling the Chemosensing Mechanism by the 7-(Diethylamino) Coumarin-Hemicyanine Hybrid: Interplay Between Reactive Oxygen and Sulfur Species** Richard A. Manderville, Departments of Chemistry and Molecular Biology, University of Guelph.

17:30 - 17:50: **Functionalization of Graphene-based Nanomaterials for Clean Energy and Environmental Applications** Aicheng Chen, Antony R. Thiruppathi, Emmanuel Boateng, Chi-Kai Hung, Sharmila Durairaj, Joshua van der Zalm, Jonathan Quintal Electrochemical Technology Centre, Department of Chemistry, University of Guelph.

Section 8: ROZH 102

Chairs: *Huiyan Li, Sanela Martić*

16:10 - 16:30: **Utilizing Solidification Processes and Composition to Alter the Electrochemical Behaviour of Metallic Materials** Abdallah Elsayed, School of Engineering, University of Guelph.

16:30 - 16:50: **Bioelectrochemistry of brain-related peptides and proteins** Sanela Martić, Department of Forensic Science, Environmental and Life Sciences, Material Science Program, Trent University.

16:50 - 17:10: **Integrating Metal Enhanced Fluorescence with 3D Substrates for Highly Sensitive Protein Detection** Huiyan Li, Rebecca Goodrum, David Sebben, School of Engineering, University of Guelph.

17:10 - 17:30: **Exploring the *In-situ* Electrochemical Detection of Electroactive Species During Copper Corrosion Under Gamma Radiation** Emmanuel Mena-Morcillo, Department of Chemistry, The University of Western Ontario.

17:30 - 17:50: **Hydration Properties of Charge Modified Phytoglycogen Nanoparticles** Carley Miki, Department of Physics, University of Guelph.

18:00 - 20:00:

Poster Session

ISESS2024 Day 3: Friday, August 16 @ Rozanski Hall, University of Guelph

8:20 – 8:50	Chair (ROZH 103): <i>Sylvie Morin</i>	
	Olaf Magnussen	
8:50 – 9:20	Pawel Kulesza	
9:25 – 9:45	Co-chairs (ROZH 103): <i>Dan Bizzotto</i> <i>Takamasa Sagara</i>	Co-chairs (ROZH 102): <i>Xiao-Dong Zhou</i> <i>Maryam Ebrahimi</i>
	Takamasa Sagara	Xiao-Dong Zhou
9:45 – 10:05	Dan Bizzotto	Na Tian
10:05 – 10:25	Jian-Feng Li	Maryam Ebrahimi
10:25 – 10:40	COFFEE	
10:40 – 11:00	Co-Chairs (ROZH 103): <i>Robert KostECKi</i> <i>Jesse Greener</i>	Co-chairs (ROZ 102): <i>Dipankar Koley</i> <i>Kagan Kerman</i>
	Joanna JuhaniEWicz Debinska	Kagan Kerman
11:00 – 11:20	Jesse Greener	Lisa Hirsch
11:20 – 11:40	Robert KostECKi	Dipankar Koley
11:40 – 12:00	Khashayar Ghandi	Marco Schönig
12:00 – 12:20	Michael Grossutti	Olaf Brummel
12:20 – 13:30	LUNCH	
13:30 – 14:00	Chair (ROZH 103): <i>Khashayar Ghandi</i>	
	Enrique Herrero	
14:00 – 14:25	GROUP PHOTO	
14:25 – 14:45	Co-chairs (ROZ 103): <i>K. Andreas Friedrich</i> <i>Julia Kunze-Liebhäuser</i>	Co-chairs (ROZ 102): <i>Peter Kruse</i> <i>Ilaria Palchetti</i>
	Sylvie Morin	Richard Webster
14:45 – 15:05	K. Andreas Friedrich	Peter Kruse
15:05 – 15:25	Julia Kunze-Liebhäuser	Lijia Liu
15:25 – 15:45	Stefan Kycia	Ilaria Palchetti
15:45 – 16:05	COFFEE	
16:05 – 16:20	Co-chairs (ROZ 103): <i>Stefan Kycia</i> <i>Lijia Lui</i>	Co-chairs (ROZ 102): <i>Fumiaki Amano</i> <i>Takamasa Sagara</i>
	Stephen Tatarchuk	Roshan Aggarwal
16:20 – 16:35	Nishtha Saxena	Sebastian Amland Skaanvik
16:35 – 16:50	Fanqi Kong	Ziying Zhan
16:50 – 17:05	Emma Lord	Joshua van der Zalm
17:05 – 17:20	Jonathan Quintal	Marjan Saeidi
17:20 – 17:35	Ghazal Shafiee	Babak Tavana
18:30 – 21:00	<i>Science Complex – Waasamowin Atrium</i> BANQUET and POSTER AWARDS	

Friday, August 16: Morning Session

Keynote Session: ROZH 103

Chair: *Sylvie Morin*

8:20 - 8:50: The Mysterious Dynamics of Adsorbates at Electrode Surfaces Olaf M. Magnussen, Institute of experimental and applied physics, Kiel University

8:50 - 9:20: Development of catalytic systems for electroreduction of inert inorganic molecules: oxygen, carbon dioxide and nitrogen Pawel J. Kulesza, Faculty of Chemistry, University of Warsaw.

Section 1 ROZH 103

Chair: *Dan Bizzotto, Takamasa Sagara*

9:25 - 9:45: Electrochemical Driving of the Movements of Soft Materials and Oil Droplets Takamasa Sagara, Nagasaki University, Graduate School of Engineering.

9:45 - 10:05: EIS and spectroelectrochemical studies of the properties of redox and fluorophore labeled DNA SAMs on gold electrodes Dan Bizzotto, AMPEL and Department of Chemistry, University of British Columbia.

10:05 - 10:25: In situ Raman Reveals the Structure and Dissociation of Interfacial Water Jian-Feng Li, Department of Chemistry, Xiamen University.

Section 2 ROZH 102

Chair: *Maryam Ebrahimi, Xiao-Dong Zhou*

9:25 - 9:45: On Non-equilibrium Thermodynamics in Electrochemical Systems Xiao-Dong Zhou, Center for Clean Energy Engineering, Chemical and Biomolecular Engineering, Mechanical Engineering, and Materials Science and Engineering Departments, University of Connecticut

9:45 - 10:05: High-Performance Ternary PtCoTe/C Catalysts for Oxygen Reduction Reaction Na Tian, State Key Laboratory of Physical Chemistry of Solid Surfaces, College of Chemistry and Chemical Engineering, Xiamen University,

10:05 - 10:25: On-surface formation of one-atom-thick carbon-based low dimensional (1D/2D) nanomaterials Maryam Ebrahimi, Lakehead University, Department of Chemistry, Department of Physics

10:25 - 10:40:

Coffee Break

Section 3: ROZH 103

Chairs: *Robert Kostecki, Jesse Greener*

10:40 - 11:00: Exploring the Impact of Insulin Aggregation Degree on Interactions with Model Lipid Rafts. Joanna Juhaniewicz-Debinska, Faculty of Chemistry, Biological and Chemical Research Centre, University of Warsaw.

11:00 - 11:20: Microfluidic Electrochemical Studies on Emerging Bioelectrochemical Systems. Jesse Greener, Université Laval.

11:20 - 11:40: Nano-FTIR Spectroscopy and Imaging of Electrochemical Interfaces Robert Kostecki, Lawrence Berkeley National Laboratory.

11:40 - 12:00: Chemistry on the Surface and Under the Surface of Materials Khashayar Ghandi, Department of Chemistry, University of Guelph

12:00 - 12:20: Deep Generative Modeling of Infrared Images Provides Signature of Cracking in Cross-Linked Polyethylene Pipe Michael Grossutti, Department of Physics, University of Guelph.

Section 4: ROZH 102

Chairs: *Dipankar Koley, Kagan Kerman*

10:40 - 11:00: Dancing Ferrocene: The Conformational Changes of α -Synuclein Peptides in the Presence of Copper(II) Kagan Kerman, Department of Chemistry, Physical and Environmental Sciences, University of Toronto.

11:00 - 11:20: Determination of the reaction volume upon the phase transition of sodium dodecyl sulfate on Au(111) Lisa Hirsch, Karlsruhe Institute of Technology.

11:20 - 11:40: Electrochemical measurements at the biofilm-biomaterials interface Dipankar Koley, Department of Chemistry, Oregon State University.

11:40 - 12:00: What can we learn from the entropy of interface formation? A case study on specific anion adsorption on Au(111) Marco Schönig, Leiden University and Karlsruhe Institute of Technology

12:00 - 12:20: Chemical and Structural In-Situ Characterization of Model Electrocatalysts by Combined Infrared Spectroscopy and Surface X-Ray Diffraction Olaf Brummel, Interface Research and Catalysis, ECRC, Friedrich-Alexander-Universität Erlangen-Nürnberg.

12:20 - 13:30: Lunch

Friday, August 16: Afternoon Session

Keynote Session: ROZH 103

Chair: *Khashayar Ghandi*

13:30 - 14:00: The Role of Adsorbed Anions in the Oxidation Mechanism of Small Organic Molecules on Platinum Electrodes Enrique Herrero, Instituto de Electroquímica, Universidad de Alicante

14:00 - 14:25: Group Photo

Section 5: ROZH 103

Chairs: *Julia Kunze Liebhäuser, K. Andreas Friedrich*

14:25 - 14:45: Fe, Cu and Ni substituted cobalt-rich spinel oxide electrocatalysts for the water oxidation reaction Sylvie Morin, Department of Chemistry, York University.

14:45 - 15:05: Low Temperature Water Electrolysis with Improved Catalytic Activity K. Andreas Friedrich, German Aerospace Center (DLR) and University of Stuttgart.

15:05 - 15:25: The Nature of the Electrified Solid/Liquid Interface during CO₂ and Water Electro-Activation Julia Kunze-Liebhäuser, Institute of Physical Chemistry, University of Innsbruck.

15:25 - 15:45: Unprecedented Quality X-Ray Diffraction and Pair Distribution Function Capabilities at the Brockhouse Sector of the Canadian Light Source Stefan Kycia, Department of Physics, University of Guelph.

Section 6: ROZH 102

Chairs: *Ilaria Palchetti, Peter Kruse*

14:25 - 14:45: Electrochemically Activated Adhesives Richard D. Webster, Nanyang Technological University, School of Chemistry, Chemical Engineering and Biotechnology.

14:45 - 15:05: Developing Nanomaterials for Chemiresistive Films That Operate as Sensors in Aqueous Environments Peter Kruse, Department of Chemistry and Chemical Biology, McMaster University.

15:05 - 15:25: Calcium Phosphate Formation with the Presence of Metal Oxides: Thin Film Coatings and Nanocomposite Lijia Liu, Department of Chemistry, Western University.

15:25 - 15:45: Microfluidic Procedures for the Electrochemical Biosensing of isothermally-amplified DNA Ilaria Palchetti, Department of Chemistry “Ugo Schiff”, University of Florence.

15:45 - 16:05: Coffee Break

Section 7: ROZH 103

Chairs: *Liliana Trevani, Sylvie Morin*

16:05 - 16:20: Insight into Catalyst Activity for the Electrooxidation of Ammonia from Linear Scaling Relations and Microkinetic Modeling, Stephen W. Tatarchuk, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.

16:20 - 16:35: Quantifying Working Electrode Surface Area during SECCM for Accurate Corrosion Rate Analysis Nishtha Saxena, Department of Chemistry, The University of Western Ontario.

16:35 - 16:50: Cu-doped Titanium Suboxide Fuel Cell Catalyst Support Prepared by Sol-gel Method Fanqi Kong, Ontario Tech University.

16:50 - 17:05: Determining the Kinetics of the Single Coreactant Reaction of Ru (bpy)₃²⁺/TPrA Electrochemiluminescence Systems at an Ultramicroelectrode Emma Mae Lord, Department of Chemistry, The University of Western Ontario.

17:05 - 17:20: Development of Nanostructured Electrocatalysts for Water Splitting
Jonathan Quintal, Electrochemical Technology Center, Department of Chemistry,
University of Guelph.

17:20 - 17:35: A Study of Air-formed Surface Films and Their Role on the Corrosion of Copper Ghazal Shafiee, Department of Chemistry, The University of Western Ontario.

Section 2: ROZH 102

Chairs: *Takamasa Sagara, Zhifeng Ding*

16:05 - 16:20: Printing Self-Assembling Monolayer to Create a Spotter-free Microarray Platform for Multiplexed Protein Detection Roshan Tosh Aggarwal, School of Engineering, University of Guelph.

16:20-16:35: XPS Characterization of Magnesium Species Sebastian A. Skaanvik, Department of Chemistry and Surface Science Western, Western University.

16:35 - 16:50: Electrochemiluminescence of Graphene Quantum Dots Ziying Zhan, Department of Chemistry, Western University.

16:50 - 17:05: Advancing Material Characterization with Integrated Optical Spectroscopy and Scanning Photoelectrochemical Microscopy. Joshua van der Zalm, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.

17:05 - 17:20: Creating Robust and Effective Electrochromic Devices: Employing a Click Chemistry Approach for the Formation of Covalent Monolayers on Extended Surface Indium Tin Oxide (ITO) Substrates Marjan Saeidi, Ontario Tech University.

17:20 - 17:35: Integrated Electrochemical Sensor Utilizing Nano Magnetic Ion Imprinted Polymer (nMIIP) for Selective Detection of Nickel Tetracarbonyl via Microfluidic Gas Separation Babak Tavana, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.

18:30 - 21:00:

Banquet and Poster Award Ceremony
(Science Complex – Waasamowin Atrium)

ISESS2024 Day 4: Saturday, August 17 @ Rozanski Hall, University of Guelph

	Co-chairs (ROZH 103): <i>Shen Ye Zhi-You Zhou</i>	Co-chairs (ROZH 102): <i>Christa Brosseau Zhifeng Ding</i>
8:45 – 9:00	Emmanuel Boateng	Maren-Kathrin Heubach
9:00 – 9:15	Bibisomaia Rezaee	Ali Ebrahimzadeh Pilehrood
9:15– 9:30	Rebecca Goodrum	Cameron McGuire
9:30 – 9:45	Negar Sabouhania	Tianyu Wei
9:45 – 10:00	Reza Moshrefi	Nathalie Mapue
10:00 – 10:20	COFFEE	
10:20 – 10:45	CLOSING REMARKS / STUDENT AWARDS	
11:00 – 15:30	Campus tour (free) City of Guelph tour (free) Niagara Falls tour (Individual fee)	

Saturday, August 17, Morning, Rozanski Hall

Section 1: ROZH 103

Chairs: *Shen Ye, John Dutcher*

8:45 - 9:00: Advancing Electrochemical Hydrogen Uptake and Release Efficiency: Palladium-Decorated Graphene Nanocomposites Enhanced by Surface Functionalization Emmanuel Boateng, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.

9:00 - 9:15: Transition Metal Oxides for Oxygen Evolution Reaction: a Comparative Study Between Amorphous and Crystalline Materials Bibisomaia Rezaee, Department of Chemistry, York University.

9:15-9:30: Gold-nanoparticle-embedded Membrane (GEM): A User Friendly Platform for Highly Sensitive Multiplexed Detection Rebecca Goodrum, School of Engineering, University of Guelph.

9:30 - 9:45: Synthesis of Bismuth Nanodendrites Catalyst for Electrochemical Carbon Dioxide Reduction Negar Sabouhanian, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.

9:45 - 10:00: Studying Copper Oxide Layer Formation Using Local Electrochemical Impedance Spectroscopy – Scanning Electrochemical Cell Microscopy Reza Moshrefi, Department of Chemistry, The University of Western Ontario.

Section 2: ROZH 102

Chairs: *Fumiaki Amano, Christa Brosseau*

8:45 - 9:00: Au(111) in the Ionic Liquid [MPPip][TFSI]: How Stable is the Most Stable Au Surface? Maren-Kathrin Heubach, Institute of Electrochemistry, Ulm University.

9:00 - 9:15: The Investigation of Annealing Temperature on the Macro and Micro Electrochemical Behaviour of Cold Sprayed Copper Coatings Ali Ebrahimzadeh Pilehrood, Department of Chemistry, Western University.

9:15 -9:30: Electrochemical and in situ X-ray Absorption Spectroscopic Studies of Hydrogen Uptake at Palladium-Graphene Oxide Nanocomposite Cameron McGuire, Department of Physics, University of Guelph.

9:30-9:45: Determining Rate Constants of Annihilation and Coreactant Reactions Utilizing Single Tetraphenylporphyrin Electrochemiluminescence Events [Tianyu Wei](#), Department of Chemistry, The University of Western Ontario.

9:45 - 10:00: Enhancing Optoelectronic Properties in Electrochromic Devices by Designing Durable Metal Organic Indium-Tin-Oxide Composites [Nathalie D. Mapue](#), Faculty of Science, Ontario Tech University.

10:00 - 10:20: Coffee Break

10:20 - 10:45: Closing Remarks with Student Presentation Awards

11:00 - 15:30:
Campus tour (free)
City of Guelph tour (free)
Niagara Falls tour (Individual fee)

APPENDIX: Posters Presentation List

Chair: *Jay Leitch*

1. **High T,p Channel Flow Cell Design for High Temperature Electrochemistry.** Muna Abdulaziz, Faculty of Science, Ontario Tech University.
2. **Metal complexes of 4'-(2-ferrocenyl)-2,2':6'2"-terpyridine (FcTpy) for electrochromic materials.** Ghazaleh Donyapeyma, Ontario Tech University.
3. **Synthesis and Photoelectrochemical Studies of Titanium Dioxide Nanomaterials for Clean Energy Applications.** Emad Hatami, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.
4. **Copper Corrosion in aqueous nitric acid at 85 °C.** Shamim Ahmed Hira, University of Guelph.
5. **The Trace Bromine Ion Treatment Strategy for Improving the Performance of Fe-NC Electrocatalyst in PEMFC.** Rui Huang, State Key Laboratory of Physical Chemistry of Solid Surfaces, Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University.
6. **Electrochemical synthesis of carbon-based materials.** Meera Jolly, Department of Forensic Science, Material Science Program, Trent University.
7. **Strategies for Highly Efficient and Stable Perovskite photocathode for hydrogen generation in acidic and basic conditions.** Saikiran Khamgaonkar, University of Waterloo.
8. **Advancement of Electrochemical Performance in PCB-based electrodes for Biomedical Applications.** Sadaf Khoomortezaei, Polytechnique Montreal, Department of Chemical Engineering.
9. **Electrochemical and Chemical Transformations of Triclosan.** Tyra Lewis, Department of Forensic Science, Environmental and Life Sciences, Material Science Program, Trent University.
10. **Direct Fabrication of Highly Active Sn-Pd/(Ni-Pd) Nanocomposites on Carbon Fibers through Electroless Depositing Approach as Catalytic Electrodes for Direct Ethanol Fuel Cells.** Mibuki Fujimura, Department of Materials Function and Design, Nagoya Institute of Technology.

11. **Muon Spin Spectroscopy: A Novel Material Characterization Technique for the Nuclear Industry.** Hannah Oreskovic, Department of Chemistry, University of Guelph.
12. **Muonic X-ray analysis of corrosion in various steels.** Nicholas Oudejans, University of Guelph, Department of Chemistry.
13. **Ultrasensitive electrochemical immunosensor for the detection of C-reactive protein antigen.** Okoroike C. Ozoemena, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.
14. **Ultrafine copper nanoparticles/reduced graphene oxide composite electrodes for CO₂ electrochemical reduction.** Chengxiang Peng, Department of Chemistry, Zhejiang University.
15. **Phase and Morphology Engineering of TiO₂ Photocatalysts for Water Splitting.** Jonathan Quintal, Electrochemical Technology Center, Department of Chemistry, University of Guelph.
16. **Effect of Fe Incorporation into a Co-based Spinel Oxide as a Catalyst for Oxygen Evolution Reaction.** Dinithi Rajaguru, Department of Chemistry, York University.
17. **Graphene-Oxide Based Electrochemical Sensor for the Detection of Temozolomide.** Carlos Ramirez, Electrochemical Technology Center, Department of Chemistry, University of Guelph.
18. **Comparing Methods to Extract Metal Corrosion Rates for new Non-Hormonal Intrauterine Devices.** Adam Robertson, Department of Chemistry, The University of Western Ontario.
19. **Electrochemical and In Situ FTIR Spectroscopic Studies of CO₂ Reduction at Bi-based Bimetallic Catalysts.** Negar Sabouhanian, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.
20. **Investigation of the Stability of miniature Ag/AgCl Reference Electrodes.** Anqi Shi, Department of Chemistry, The University of Western Ontario.
21. **The Effect of Hypochlorite on the Oxidation of Copper.** Taras P. Skotar, Department of Chemistry, The University of Western Ontario.
22. **Electrochemical determination of Penicillin G in biological matrix based on the carbon paste electrode modified with molecular imprinted polymer.** Babak Tavana, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.

23. **Efficient Photoelectrochemical Degradation of Organic Pollutants by Nanostructured TiO₂** Joshua van der Zalm, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.
24. **Gravimetric analysis of hydrogen sorption property of palladium nanoparticles-decorated reduced graphene oxide.** Ruzhen Xu, Electrochemical Technology Centre, Department of Chemistry, University of Guelph.
25. **Lithium Diffusion and Surface Oxidation on Battery Materials at Room Temperature Characterized by AES and LEED** Jozef G. Ociepa, OCI Vacuum Microengineering Inc., London, ON, Canada



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