

Advanced Ionics for Sustainable Energy Laboratory (AISEL) group symposium
In collaboration with Energy Transition Centre

Sustainable Energy Storage and Conversion Technologies

Wednesday, November 9, 2022

Time: 09:00 to 16:30

1500 (15th Floor), East Tower, Ampersand Building, 112-4 Ave SW, Calgary

Welcome Address

Prof. Venkataraman Thangadurai

Department of Chemistry, University of Calgary
(09:00 to 09:05)

Session 1

Energy Storage (Batteries)

(09:05 to 11:50)

- Solid State Electrolytes for Batteries
- Modern Organic Electrolytes
- Charge Storage Mechanism in Batteries
- Hybrid Batteries
- Theoretical Studies to Design Better Batteries

Coffee Break

(10:30 to 10:50)

Lunch Break

(11:50 to 14:00)

Session 2

Energy Storage (Batteries)

(14:00 to 15:00)

- Organic-Inorganic Redox Flow Batteries
- Solid Polymer Electrolytes for Sodium-ion Batteries
- High Energy Density Li-S batteries
- Electrochemical CO₂ Capture in Oceans

Coffee Break

(15:00 to 15:20)

Session 3

Energy Conversion (Fuel Cells)

(15:20 to 16:30)

- SOFC Cathodes
- Single and Double Perovskites for SOFC

For details:*

Prof. Venkataraman Thangadurai

Email: vthangad@ucalgary.ca

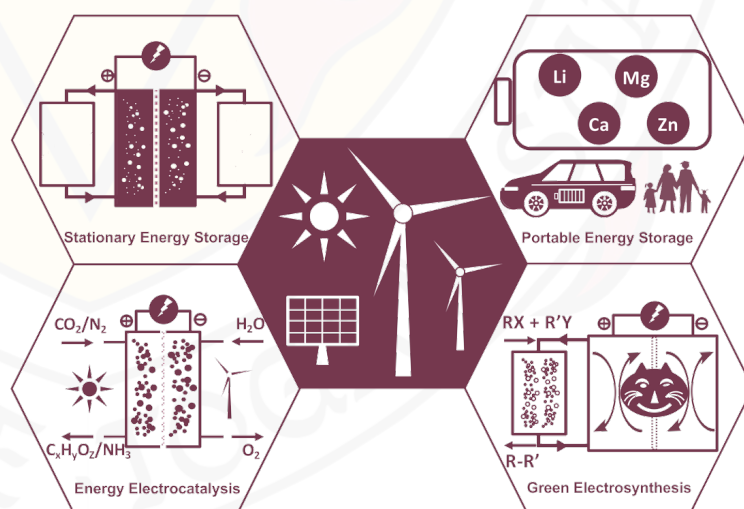
Mr. Puneet Mannan

Email: pmannan@innovatecalgary.com

*Contact Prof. Thangadurai to confirm the registration.

The aim of this symposium is to showcase to the public and private sector the AISEL research group's efforts and expertise in advanced battery and fuel cell technologies. New research and findings from the group will be presented, and scientific concepts discussed in the following research areas:

- Materials for Solid Oxide Fuel Cells
- Modern Subzero Electrolytes for Batteries
- Charge Storage Mechanism in Batteries
- Solid State Electrolytes for Next Generation Batteries
- New Design for Redox Flow Batteries
- Density Functional Theory for Energy Storage
- Lithium-Sulfur Batteries



For more information on the AISEL group, scan the QR code or visit the link given below:

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Program Details

Time	Speaker	Title
09:00 — 09:05	Dr. Venkataraman Thangadurai	Welcome Address
09:05 — 09:30	Chengtian Zhou	Next-generation safe and robust batteries enabled by advanced electrolytes.
09:30 — 09:55	Subhajit Sarkar	Next generation solid state Li metal batteries for electric vehicle technology
09:55 — 10:15	Vishnu Surendran	Hybrid ion capacitors: a high-energy density substitute for supercaps
10:15 — 10:35	Arthi Gopalakrishnan	Boosting performance in hybrid ion capacitors- a doping strategy
10:35 — 11:00	Coffee Break	
11:00 — 11:20	Muhammad Shoaib	Evolution of batteries and pathways to design high energy batteries
11:20 — 11:45	Thilini Boteju	Theoretical studies for high-performing energy storage materials
11:45 — 14:00	Lunch	
14:00 — 14:20	Alfred Samson	Solid-state lithium batteries: designing 3D solid electrolyte platforms
14:20 — 14:35	Anne Nguyen	Organic-inorganic redox flow batteries with novel separator
14:35 — 14:45	Prathap Suba	An electrochemical tool to facilitate direct CO ₂ capture in the ocean
14:45 — 15:00	Abinaya Sivakumaran	Silicate solid electrolytes for next-generation sodium batteries
15:00 — 15:20	Coffee Break	
15:20 — 15:35	Afshana Bristi	Polyvinylidene fluoride and polyvinylpyrrolidone-based solid polymer electrolyte
15:35 — 15:50	Daniel Sikstrom	Fuel cell basics & single perovskite fuel cell
15:50 — 16:05	Aroosa Javed	Robust, cost-effective iron-based nano-structured electrodes for advanced solid oxide fuel cells
16:05 — 16:20	Amanda Ndubuisi	Mixed conducting perovskite oxide cathodes for next generation IT-SOFCs
16:20 — 16:30	Dr. Venkataraman Thangadurai	Closing Remarks
16:30 — 17:30	Social time (visiting Calgary Public Library) and group pictures	

For details:*

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