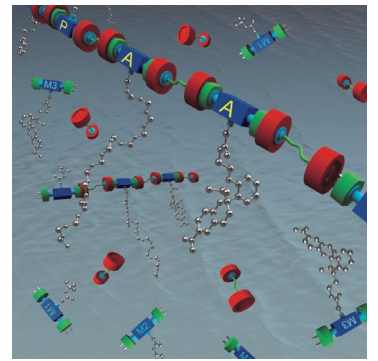
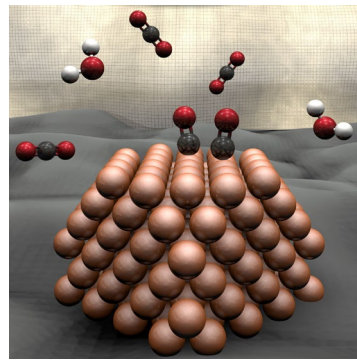
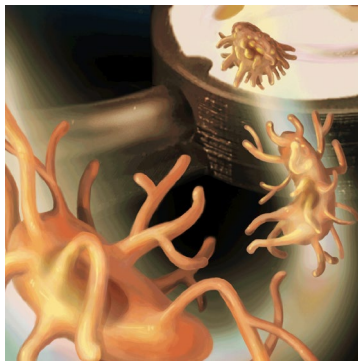
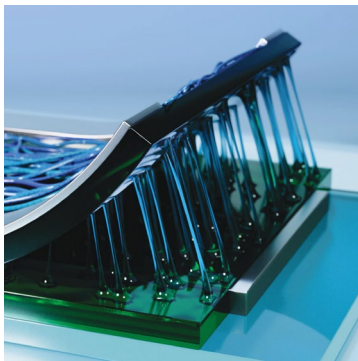


# Future Directions of Advanced Materials



**A TWO-DAY WORKSHOP**, hosted by Brockhouse Institute of Materials Research (BIMR, Dr. Alex Adronov), highlighting research on advanced materials with significant implications for the future of health, the environment, and energy. Specifically, this workshop will be a platform for researchers to learn about the latest advances in materials pertaining to four key themes, including the Future of Biomaterials, Artificial Intelligence in Materials Research, Sustainable Materials and Quantum Materials. The overall goal of this workshop will be to stimulate BIMR researchers to think about new directions for Materials Research.



## May 29-30, 2024

Workshop is FREE.

 REGISTER by visiting the website below.

<https://brockhouse.mcmaster.ca/events/>

### KEYNOTE SPEAKERS

- Dr. Christine Allen, University of Toronto
- Dr. Michael Brook, McMaster University

### TOPICS

- Future of Therapeutic Materials
- Future of Bio-Materials Interactions
- Future of Sustainable Materials
- Future of Soft Robotics



Brockhouse Institute  
for Materials Research

## Future Directions of Advanced Materials

### Wednesday, May 29, 2024

9:25 EDT

OPENING REMARKS

9:30

KEYNOTE LECTURE

9:30 AI and Automation to Accelerate Drug Formulation Development  
**Dr. Christine Allen**, University of Toronto

10:10

FUTURE OF THERAPEUTIC MATERIALS

10:10

Title TBD

**Dr. Frank Gu**, University of Toronto

10:40

Advanced Sensing Technologies for Health Monitoring.

**Dr. Mahla Poudineh**, University of Waterloo

11:10

Dynamic Polymer Materials for Drug Delivery

**Dr. Caitlin Maikawa**, University of Toronto

11:40

Advancing DNA-based optical sensors for precision diagnostics

**Dr. Amani Hariri**, University of British Columbia

12:10

LUNCH/BREAK

13:00

FUTURE OF BIO-MATERIALS INTERFACES

13:00

Tuning intermolecular interactions in biosourced and bioinspired biomaterials

**Dr. Vahid Adibnia**, Dalhousie University

13:30

Title TBD

**Dr. Sara Mahshid**, McGill University

14:00

Investigating the fate of vaccine antigens *in vivo*

**Dr. Aereas Aung**, University of Toronto

14:30

Engineering Advanced Biomaterials with Enhanced Antifouling and Biomimetic Properties

**Dr. Maryam Badv**, University of Calgary

15:00

DAY CLOSING

## Future Directions of Advanced Materials Thursday, May 30, 2024

9:25 EDT

OPENING REMARKS

9:30

KEYNOTE LECTURE

9:30 Strategies for More Sustainable Silicone Polymers and Elastomers  
**Dr. Michael Brook**, McMaster University

10:10

FUTURE OF SUSTAINABLE MATERIALS

10:10 Sustainable Sodium-ion Cells as an Alternative to Lithium-ion Batteries  
**Dr. Michael Metzger**, Dalhousie University

10:40 Photocatalyst Composites for Solar Reforming  
**Dr. Stuart Linley**, McMaster University

11:10 Thermally activated delayed fluorescence materials as organic photocatalysts  
**Dr. Zachary Hudson**, University of British Columbia

11:40 Upgrading Plastic Waste to Organic Electronics  
**Dr. Laure Kayser**, University of Delaware

12:10

LUNCH/BREAK

13:00

FUTURE OF SOFT ROBOTICS

13:00 Insect-scale aerial robots powered by soft artificial muscles.  
**Dr. Kevin Chen**, Massachusetts Institute of Technology

13:30 Challenges in Deploying Magnetically Actuated Soft Robots  
**Dr. Onaizah Onaizah**, McMaster University

14:00 **Title TBD**

**Dr. Xian Wang**, Queen's University

14:30 Leveraging Biological Actuators for Soft Robotics  
**Dr. Ritu Raman**, Massachusetts Institute of Technology

15:00

DAY CLOSING