

WATERLOO INSTITUTE FOR NANOTECHNOLOGY

# *Research Celebration*

# 2022



UNIVERSITY OF  
**WATERLOO**



WATERLOO INSTITUTE FOR  
**nano**technology

# PROGRAM

Quantum Nano Centre  
December 2, 2022  
4:00PM - 6:30PM

<b>4:00 PM</b>	<b>Opening remarks and Territorial Acknowledgment: Bernard Duncker, Associate Vice-President, Research and International</b>
<b>4:05 PM</b>	<b>WIN Rising 2022 Star Award: Letian Dou</b>
<b>4:10 PM</b>	<b>Keynote Presentation: WIN Rising Star 2021 Recipient Cao Thang Dinh</b>
<b>4:45 PM</b>	<b>2022 WIN Research Leaders Awards</b>
<b>4:50 PM</b>	<b>Outstanding Staff Award</b>
<b>5:00 PM</b>	<b>Reception with Poster Presentations by 2022 Nanofellowship Recipients, QNC Basement</b>

# WELCOME

Welcome to the Waterloo Institute for Nanotechnology (WIN) 2022 Research Celebration!

This evening we will recognize and celebrate the outstanding achievements of our members, staff, and students. It is also a time to reflect on all that we have accomplished over the past year as an institute, as members of a world-class university, and as part of the Waterloo community. Everyone at WIN understands the importance of interdisciplinary work and how by working collaboratively between the different faculties and schools within the University of Waterloo, WIN is able to solve global challenges that impact us all.

Thank you to all who are joining us tonight, and special thanks to Bernard Dunkard, Associate Vice-President Research and International.

## ***Territorial Acknowledgement***

*The University of Waterloo acknowledges that much of our work takes place on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. Our main campus is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River. Our active work toward reconciliation takes place across our campuses through research, learning, teaching, and community building, and is centralized within the Office of Indigenous Relations.*



# GREETINGS FROM THE EXECUTIVE DIRECTOR

The Waterloo Institute for Nanotechnology (WIN) in its 14th year and has now become Canada's largest nanotechnology institute with a vision of meeting the United Nation's Sustainable Development Goals and a more sustainable future. This is all possible because of the extraordinary and talented researchers, graduate students, and staff we have at WIN.

We are excited to welcome you back in-person to celebrate the various accomplishments of the WIN community in the last year! In particular we are honouring WIN members who have made outstanding contributions in nanotechnology, graduate students who have won a Nanofellowship, and the staff who have supported WIN's activities.

# WIN Rising Star Award in Nanoscience and Nanotechnology

*For 2022*



## **Letian Dou**

Charles Davidson Associate Professor  
Chemical Engineering, Purdue University

Professor Letian Dou is an Associate Professor of Chemical Engineering at Purdue University. Dou obtained his B.S. in Chemistry from Peking University and his Ph.D. from the Department of Materials Science and Engineering at UCLA. His research interests include the synthesis of organic semiconductors, inorganic nanostructures, hybrid materials, and related optoelectronic properties and devices.

For additional information, visit Professor Dou's [Purdue website](#) or [research website](#).

# WIN RESEARCH LEADERS

*For 2021-2022*



## **Zhongwei Chen**

Department of Chemical Engineering

Natural Sciences and Engineering Research Council of Canada (NSERC) Collaborative Research and Training Experience Program (CREATE) in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream



## **Kyle Daun**

Department of Mechanical and Mechatronics Engineer

NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream



## **Irene Goldthorpe**

Department of Electrical and Computer Engineering

NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream



## **David Hawthorn**

Department of Physics and Astronomy

Canadian Foundation for Innovation John R Evans Leaders Fund (CFI-JELF) award for "Laboratory X-ray Absorption Spectroscopy to Accelerate Sustainable Technology Development"

# WIN RESEARCH LEADERS

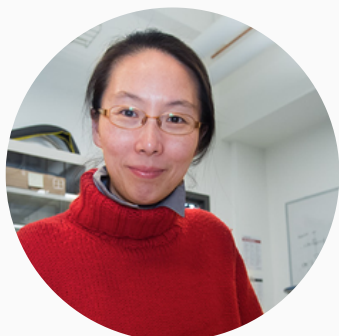
*For 2021-2022*



## **Scott Hopkins**

Department of Chemistry

2022 Canadian Society for Chemistry Keith Ladler Award for Early Career Contributions to Physical Chemistry



## **Na Young Kim**

Department of Electrical and Computer Engineering

NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream



## **Adrian Lupascu**

Department of Physics and Astronomy

NSERC Research Tools and Instruments (RTI) "Ultrafast Arbitrary Waveform Generator for Experiments in Quantum Computing, Quantum Simulation, and Relativistic Quantum Information with Superconducting Circuits"



## **Graham Murphy**

Department of Chemistry

NSERC Alliance Grant for "Synthesis of Deuterium-enriched Commodity Chemicals" with Key DH Technologies Inc

# WIN RESEARCH LEADERS

*For 2021-2022*



## **Kevin Musselman**

Department of Mechanical and Mechatronics Engineering  
NSERC Idea to Innovation (I2I) Grant for developing barrier coatings for sustainable packaging materials, with Nfinite Nanotechnology Inc.  
NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream.  
University of Waterloo Endowed Chair in Nanotechnology.



## **Linda Nazar**

Department of Chemistry  
Canadian Society for Chemistry EWR Steacie Award  
Fellow of Royal Society UK



## **Michael Pope**

Department of Chemical Engineering  
NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream



# WIN RESEARCH LEADERS

*For 2021-2022*



## **Mahla Poudineh**

Department of Electrical and Computer Engineering

Canadian Institutes for Health Research (CIHR) for “Moving Beyond Blood Glucose with Continuous Multiplexed Hormone Measurement”

Emerging Investigator in Nanoscale Journal for the article “An Integrated Microfluidic Electrochemical Assay for Cervical Cancer Detection at Point-of-Care Testing”

Juvenile Diabetes Research Foundation (JDRF) grant for “A pH Responsive Hydrogel Microneedle Patch for Continuous Measurement of Ketone Bodies and Glucose”



## **Germán Sciaini**

Department of Chemistry

NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream



## **Rodney Smith**

Department of Chemistry

Canadian Foundation for Innovation John R Evans Leaders Fund (CFI-JELF) award for “Laboratory X-ray Absorption Spectroscopy to Accelerate Sustainable Technology Development”;

NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) - International Stream

# WIN RESEARCH LEADERS

*For 2021-2022*



## **Shirley Tang**

Department of Chemistry

Canada's Top 100 Most Powerful Women by Women's Executive Network (WXN) for their work to advance workforce diversity and inspire tomorrow's leaders



## **Adam Wei Tsen**

Department of Chemistry

"Magnetic anisotropy reversal driven by structural symmetry-breaking in monolayer  $\alpha$ -RuCl<sub>3</sub>," A. W. Tsen et al., Nature Materials (2022).

"High-performance mid-IR to deep-UV van der Waals photodetectors capable of local spectroscopy at room temperature," A. W. Tsen et al., Nano Letters 22, 3425-3432 (2022).

"Giant c-axis nonlinear anomalous Hall effect in Td-MoTe<sub>2</sub> and WTe<sub>2</sub>," A. W. Tsen et al., Nature Communications 12, 2049 (2021).



## **Yimin Wu**

Department of Mechanical and Mechatronics Engineering

Royal Society of Chemistry "Nanoscale Emerging Investigator Award"

# WIN RESEARCH LEADERS

*For 2021-2022*



**William Wong**

Department of Electrical and Computer Engineering  
NSERC CREATE in Scalable 2D-Materials Architectures (2D-MATURE) -  
International Stream



**John Yeow**

Department of Systems Design Engineering  
2021 Institute of Electrical and Electronics Engineers (IEEE)  
Distinguished Service Award recognizing outstanding service for the  
benefit and advancement of the Nanotechnology Council



**Evelyn Yim**

Department of Chemical Engineering  
University of Waterloo Research Chair



**Aiping Yu**

Department of Chemical Engineering  
Royal Society of Canada Rutherford Medal in Chemistry

# WIN RESEARCH LEADERS

*For 2021-2022*



**Boxin Zhao**

Department of Chemical Engineering

University of Waterloo Endowed Chair in Nanotechnology



**Norman Zhou**

Department of Mechanical and Mechatronics Engineering

NSERC Synergy Award for Innovation with Huys Industries, ArcelorMittal Dofasco, and International Zinc Associate for work on enhanced joining processes, novel welding consumables and equipment, and stronger lightweight materials for automotive manufacturers to meeting improved fuel economy and emission targets

# WIN STAFF APPRECIATION AWARD

*For 2022*



**Kendra Goertz**

Marketing and Operations Coordinator

In recognition for work at the Waterloo Institute for Nanotechnology and going above and beyond the call of duty to help support and advance nanotechnology research.



**Chris Kleven**

QNC Facility Technician

In recognition for work in the Quantum Nano Centre going above and beyond the call of duty to help support and advance nanotechnology research.

# NANOFELLOWSHIP AWARDEES

*For 2022*

**Md Fahim Al Fattah**

Dayan Ban  
*Department of Electrical and  
Computer Engineering*

**Negin Bouzari**

Hamed Shahsavan  
*Department of Chemical Engineering*

**Irina Bukhteeva**

Zoya Leonenko  
*Department of Physics and Astronomy*

**Li Chang**

Linda Nazar  
*Department of Chemistry*

**Qiaoyun Chen**

Kevin Musselman  
*Department of Mechanical and  
Mechatronics Engineering*

**Ali Ghatei Kalashami**

Norman Zhou  
*Department of Mechanical and  
Mechatronics Engineering*

**Hossein Golzar**

Shirley Tang  
*Department of Chemistry*

**Tao Guo**

Norman Zhou & Yimin Wu  
*Department of Mechanical and  
Mechatronics Engineering*

**Lian Han**

Michael Tam  
*Department of Chemical Engineering*

**Zhuoyang He**

Na Young Kim  
*Department of Electrical and  
Computer Engineering*

**Md. Milon Islam**

Fakhri Karray  
*Department of Electrical and  
Computer Engineering*

**Rabiul Islam**

Guo-Xing Miao  
*Department of Electrical and  
Computer Engineering*

**Muhammed Kayaharman**

Irene Goldthorpe  
*Department of Electrical and  
Computer Engineering*

**Reza Kohandani**

Simarjeet Saini  
*Department of Electrical and  
Computer Engineering*

**Salman Lari**

Hyock Ju Kwon and Jong Uk Kim  
*Department of Mechanical and  
Mechatronics Engineering*

**Yasaman Maddah**

Hamed Shahsavan  
*Department of Chemical Engineering*

**Jonathan David Mayry**

John Honek & Sushanta Mitra  
*Department of Chemistry*

**Cameron Meaney**

Mohammed Kohandel  
*Department of Applied Mathematics*

**Kseniia Medvedeva**

Anna Klinkova  
*Department of Chemistry*

**Mohammad Ala Mohajerzadeh**

Karim Sallaudin Karim  
*Department of Electrical and  
Computer Engineering*

**Dorsa Mohammadrezaei**

Mohammed Kohandel  
*Department of Applied Mathematics*

**Ewomazino Constance Ojogbo**

Tizazu Mekonnen & Costas  
Tzoganakis  
*Department of Chemical Engineering*

**Anish Pal**

Sushanta Mitra  
*Department of Mechanical and  
Mechatronics Engineering*

**Natalie Prislinger Pinchin**

Hamed Shahsavan  
*Department of Chemical Engineering*

**Lanting Qian**

Linda Nazar  
*Department of Chemical Engineering*

**Youssra Rahham**

Mario Ioannidis  
*Department of Chemical Engineering*

**Md Masud Rana**

Dayan Ban  
*Department of Electrical and  
Computer Engineering*

# NANOFELLOWSHIP AWARDEES

*For 2022*

**Daniel Rickert**

Janusz Pawliszyn & Scott Hopkins  
*Department of Chemistry*

**Soumyadeep Saha**

Manoj Sachdev & Sushanta Mitra  
*Department of Electrical and  
Computer Engineering*

**Fatemeh Samaeifar**

Hany Aziz  
*Department of Electrical and  
Computer Engineering*

**Sepideh Sarmast**

Roydon Fraser  
*Department of Mechanical and  
Mechatronics Engineering*

**Mayuri Sritharan**

Youngki Yoon  
*Department of Electrical and  
Computer Engineering*

**Youchao Teng**

Yimin Wu  
*Department of Mechanical and  
Mechatronics Engineering*

**Avery To**

Graham Murphy  
*Department of Chemistry*

**Lei Wang**

Yimin Wu  
*Department of Mechanical and  
Mechatronics Engineering*

**Yi Wang**

Michael Tam  
*Department of Chemical Engineering*

**Ethan Watt**

Emmanuel Ho  
*School of Pharmacy*

**Zhao Weinan**

Michael Tam  
*Department of Chemical Engineering*

**Michael Wright**

Peter Levine  
*Department of Electrical and  
Computer Engineering*

**HeeBong Yang**

Na Young Kim  
*Department of Electrical and  
Computer Engineering*

**Junjie Yin**

James Forrest  
*Department of Physics and Astronomy*

**Brian Youden**

Mark Servos  
*Department of Biology*

**Zhuo Yu**

Linda Nazar  
*Department of Chemistry*

**Jinhe Zhang**

Xiaoyu Wu  
*Department of Mechanical and  
Mechatronics Engineering*

**Jinxuan Zhang**

Xianshe Feng  
*Department of Chemical Engineering*



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