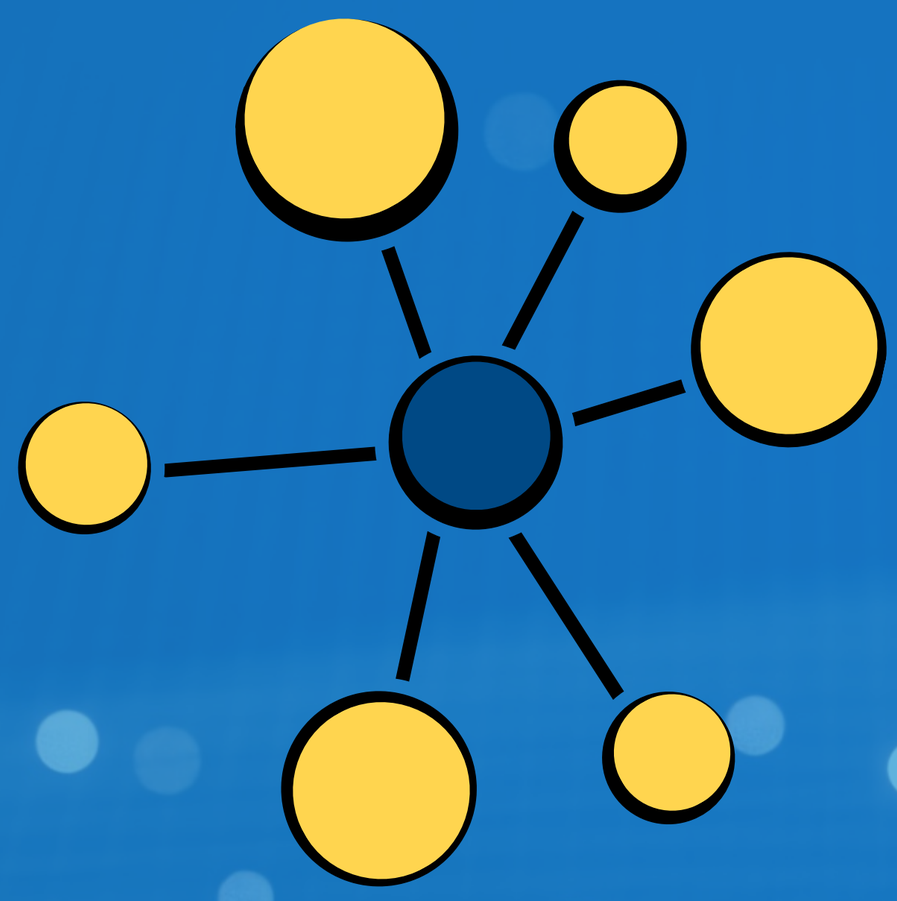
WIN SUMMER SCHOOL

SUSTAINABLE NANOTECHNOLOGY

JUNE 19 - 21, 2023

PROGRAM



UNIVERSITY OF WATERLOO | WATERLOO INSTITUTE FOR nanotechnology

AGENDA

Sunday June 18, 2023

TIME	EVENT	LOCATION	NOTES
4:00 PM	Resident Check In	MKV	Mackenzie King Village (MKV)

Monday June 19, 2023

TIME	EVENT	LOCATION	NOTES
8:45 AM	Pick up from residence	MKV	
9:00 - 10:00 AM	Welcome Lecture & Breakfast	QNC 1501	
10:00 - 10:30 AM	Tour of the QNC	QNC	
10:30 - 11:00 AM	Dayan Ban Lecture *High-Performance Piezoelectric Nanogenerators Based on Hybrid Perovskite Nanomaterial for Energy-Harvesting*	QNC 1501	Presented by Dr. Asif Khan
11:00 AM - 12:00 PM	Boxin Zhao Lecture	QNC 1501	
12:00 - 2:00 PM	Lunch	QNC 1501	
2:00 - 3:00 PM	Dayan Ban Lab Tour	QNC	Tour by Shazzad Rassel
3:00 - 4:00 PM			
4:00 - 5:00 PM	Boxin Zhao Lab Tour	E6	
6:00 PM	Dinner	QNC 1501	

AGENDA

Tuesday June 20, 2023

TIME	EVENT	LOCATION	NOTES
8:30 - 9:00 AM	Breakfast	QNC 1501	
9:00 - 10:00 AM	Xianguo Li Lecture *Nanotechnology for water electrolyzer for hydrogen production and fuel cell for clean power generation*	QNC 1501	
10:00 – 11:00 AM	Aiping Yu Lecture	QNC 1501	
11:00 AM - 12:00 PM	Kevin Musselman Group Lecture *Introduction to thin-film deposition technology and spatial atomic layer deposition*	QNC 1501	Dr. Farman Ullah
12:00 – 1:00 PM	XiaoYu Wu Lecture *Thermal energy storage and sustainability assessment*	QNC 1501	
1:00 – 2:00 PM	LUNCH	QNC 1501	
2:00 – 3:00 PM	Xianguo Li / XiaoYu Wu Lab Tour	ERC	Tour by Jinhe Zhang
3:00 – 4:00 PM	Kevin Musselman Group Lab tour	E5	Dr. Farman Ullah
4:00 – 5:00 PM	Aiping Yu & Zhongwei Chen Lab tours	E6	
6:00 PM	Dinner	QNC 1501	

AGENDA

Wednesday June 21, 2023

TIME	EVENT	LOCATION	NOTES
8:30 – 9:00 AM	Breakfast	QNC 1501	PLEASE CHECK OUT OF RESIDANCE BEFORE COMING TO BREAKFAST
9:00 – 10:00 AM	Vassili Karanassios	QNC 1501	
10:00 – 11:00 AM	Steven Young Lecture *Sustainability assessment (of nanotech): approaches, tools, data and decisions*	QNC 1501	
11:00 AM – 12: 00 PM	Anindya Sen Lecture	QNC 1501	Virtual
12:00 – 12:15 PM	Graduate Program Talk	QNC 1501	
12:15 PM – 1:00 PM	Michael Tam	QNC 1501	
1:00 PM – 2:00 PM	Closing Reception Lunch	QNC 1501	
2:00 PM – 3:45 PM	Tour of Engineering	E7	
3:45 PM	End of WIN Summer School		

PROFESSOR PROFILES

Dayan Ban

Professor and Associate Director, Nanotechnology Engineering

Professor Dayan Ban was one of the leading researchers who developed and prototyped the first wafer-fused infrared optical up-converter and the first pixelless infrared optical up-conversion imaging device. He also pioneered the research in scanning probe microscopy and invented scanning differential spreading resistance microscopy technique.

Vassili Karanassios

Professor, Chemistry

Vassili Karanassios is a Professor of Chemistry at the University of Waterloo (Ontario, Canada) and a co-founder of a degree program in nanotechnology engineering at the same University. Professor Karanassios received his PhD from the University of Alberta (Edmonton, Canada) and was a Post Doctoral Fellow at McGill University (Montreal, Canada). In 2009, he held a Leverhulme award in the UK where he was a visiting Professor in Chemistry (Sheffield University), an Overseas Fellow of Churchill College (Cambridge University, UK), and a visiting Professor of Engineering (Cambridge University, UK) in the Center for Advanced Photonics and Electronics (CAPE).

Xianguo Li

Professor, Mechanical and Mechatronics Engineering

Professor Li's main research interests and activities are in the area of thermal fluid/science, including energy systems and energy storage, various energy conversion devices, propulsion and power generation systems, aerosol generation and applications, and transportation fuel cell and battery systems. These research projects involve thermodynamics, fluid dynamics, hydrodynamic stability, multiphase flow, heat and mass transfer, liquid atomization and sprays, combustion, power generation and propulsion systems.

Kevin Musselman

Assistant Professor, Mechanical and Mechatronics Engineering

Professor Kevin Musselman performed his doctoral studies in the Department of Materials Science & Metallurgy at the University of Cambridge with Professor Judith Driscoll. In 2010, Musselman was appointed the Hertha Ayrton Junior Research Fellow in Science at Girton College, Cambridge University. Musselman joined the University of Waterloo in 2015, where his research focuses on the development of functional nanomaterials for a variety of devices and applications, including photovoltaic solar cells, LEDs, high-frequency diodes, resistive memory, cancer theranostics, and novel sensors.

PROFESSOR PROFILES

Anindya Sen

Professor, Economics

Anindya Sen is a professor at the Department of Economics where he has taught since 1998 and is the current director of Master of the Public Service program. He was the Associate Chair (Graduate Studies) for Economics before his directorship of the program. Prior to working at the university, Professor Sen was an Economist at the Competition Bureau, Industry Canada.

Michael Tam

Professor, Chemical Engineering; University Research Chair

My research focuses on the development of functional sustainable nanomaterials (SN) (cellulose nanocrystals, nano-starch, etc) for various advanced engineering applications. Additionally, nano-hybrids consisting of SN and well-defined block copolymers and responsive microgels are produced and utilized as smart delivery vehicles and separation media for agriculture and biomedical systems. My group seeks to advance the application of carbon neutral nanomaterials that contribute to the reduction of greenhouse gases, such as CO2. For full biography, click here.

XiaoYu Wu

Assistant Professor, Mechanical and Mechatronics Engineering

Professor XiaoYu Wu's research group, Greener Production @ Waterloo combines expertise in thermal science, material engineering and techno-economics to develop sustainable technologies for energy conversion and chemical production. Both experimental and numerical methods will be applied to develop a fundamental understanding of the thermodynamics and kinetics in the processes. These findings will accelerate the material development and process optimization and facilitate the commercialization of these technologies. The goal is to utilize renewable resources and improve global living standards.

Steven Young

Professor, School of Environment, Enterprise Development

Steven B. Young is an industrial ecologist and associate professor in the School of Environment, Enterprise Development, University of Waterloo, Canada where he teaches in environment, business and sustainable development. His research interests include: corporate social responsibility; life-cycle assessment; responsible sourcing; sustainability standards and management systems; auditing, assurance and certification; sustainable materials, conflict minerals and critical raw materials. Professor Young is a professional engineer with degrees from University of Alberta and University of Toronto. He participates in industry and civil activities on responsible sourcing, and publishes in scholarly, industry and popular outlets.

PROFESSOR PROFILES

Aiping Yu

University Research Chair & Professor, Chemical Engineering

Professor Aiping Yu is an expert in carbon nanotubes and graphene, enabling her to design the proper porosity and polarity of nanomaterials for the highest energy storage supercapacitor and ultra-strong nanocomposites. Yu is the Director of the Carbon Nanomaterials Laboratory for Renewable Energy and Multi-functional Composites. The research goal is to develop light weight, high energy density and long cycle life hybrid supercapacitors which combine the advantages of battery and supercapacitors for automobile and electronic devices.

Boxin Zhao

Professor, Chemical Engineering

Professor Boxin Zhao is a professor in chemical engineering at the University of Waterloo in Canada. He obtained his PhD in Chemical Engineering from McMaster University in 2004, worked as a postdoc at UCSB in 2005-2008. Since joining the University of Waterloo in 2008, Professor Zhao has established and directed the Laboratory of Surface Science and Bionanomaterials. The current research interests of his group are in the areas of smart polymers, bionanomaterials, soft materials, surface science, biomimetic adhesion and robotic devices, 3D printing, advanced manufacturing, etc.

MAP - MKV TO QNC

Directions

Mackenzie King Village (MKV)
West Entrance

→

Mike & Ophelia Lazaridis Quantum-Nano Centre (QNC)

- Exit MKV and head down Villages Road
- Turn right onto Ring Road
- Turn left to enter the QNC
- Once inside the QNC, head towards room 1501 (down the hall, in front of staircase)

Click Here for Google Map Directons

RESOURCES

UW Campus Map

https://uwaterloo.ca/map/

WIN Office Contact Info

Mike & Ophelia Lazaridis Quantum Nano Centre, 200 University Ave W, Waterloo, ON N2L 3G1

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kngoertz@uwaterloo.ca

519-888-4567, ext. 38654

UW Special Constable Services

https://uwaterloo.ca/special-constable-service/

Campus Resources

https://uwaterloo.ca/human-resources/support-employees/campus-resources