

WISE

WATERLOO INSTITUTE
FOR SUSTAINABLE ENERGY



LECTURE SERIES

FREE ADMISSION | OPEN TO THE PUBLIC

BUILDINGS | CARBON CAPTURE AND STORAGE | FUEL CELLS | NUCLEAR | POLICY | PLANNING
RENEWABLES | SMART GRID | STORAGE | SUSTAINABLE MOBILITY | SUSTAINABILITY ANALYSES

A WEBINAR PRESENTED BY THE WATERLOO INSTITUTE FOR SUSTAINABLE ENERGY

Friday Feb 18, 2022
11:00 am – 12:00 pm

[How to Join the Zoom Meeting](#)

DECARBONIZATION STRATEGIES IN CANADA: CHALLENGES AND FUTURE PROSPECTS

Dr. Sohrab Zendehboudi, is an associate professor in the Department of Process Engineering at Memorial University, NL, Canada.

High concentration of Greenhouse gases, particularly CO₂, in the atmosphere leads to adverse environmental impacts such as high temperature, precipitation, and risks of forest fires. Thus, it is vital to employ efficient carbon management technologies such as carbon capture, utilization, and storage (CCUS) to mitigate CO₂ emissions in the atmosphere. This talk provides statistical data and effective strategies on CO₂ emissions and control in Canada. Specific cases in the carbon management area including carbon capture using ionic liquids, algal biofuel production, carbon storage in underground formations, and synthesis of petrochemical products are described where pros and cons of the processes are highlighted. A systematic parametric sensitivity analysis is also conducted to explore the effects of process and thermodynamic conditions on conversion, absorption, and sequestration rate of carbon in various CCUS processes. Based on experimental and theoretical studies, effective modeling/optimization, and laboratory tools to attain ultimate goals of greenhouse gas control approaches are introduced. The feasibility of key CCUS technologies in Canada is investigated with focus on process performance, economic, and environmental aspects. Theoretical and practical challenges of current CCUS technologies across the world, particularly Canada, are also discussed and possible apposite solutions are provided. Useful guidelines/tips are given to design, implement, and optimize carbon management processes towards reduction of CO₂ emissions.

Biography



Dr. Sohrab Zendehboudi is an Associate Professor in the Department of Process Engineering at Memorial University, NL, Canada. His research interests include Energy & Environment, Transport Phenomena, and Process Systems Engineering. Sohrab has authored or/and coauthored several technical papers in his research field. Currently, Sohrab's research team includes more than 20 researchers (master and PhD students, research engineer, and post-doctoral fellows). For more than 15 years, Sohrab has worked as a process engineer, researcher, instructor, supervisor, and professor at various companies/universities in Iran, Kuwait, USA, and Canada. Sohrab is currently an associate editor for a number of journals including Canadian Journal of Chemical Engineering, Energies, Journal of Porous Media, Special Topics & Reviews in Porous Media: An International Journal, Journal of Geofluids, and AIMS Energy. Sohrab holds a PhD in Chemical Engineering (specializing in Transport Phenomena) from the University of Waterloo, Canada.

ALL ARE WELCOME!

VISIT
[WISE.UWATERLOO.CA/EVENTS](https://wise.uwaterloo.ca/events)
FOR MORE DETAILS

[View on WISE Event Calendar](#)