PROGRAM

5:30
Welcome from the Dean of Engineering and from TISED

5:35-5:55
Presentation by Marianna Uceda

5:55-6:05
Moderated Q&A

6:05-6:25
Presentation by Yee Wei Foong

6:25-6:35
Moderated Q&A

6:35-6:55
Presentation by Jennifer Martin Del Campo Rodriguez

6:55-7:05
Moderated Q&A

7:05-7:15
Closing Remarks

7:15-8:30
Cocktail Reception

SEDTALKS!

Thank you.
Stay in touch.

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TISED
Trottier Institute for Sustainability in Engineering and Design

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SEDTALKS!

SUSTAINABLE ENGINEERING AND DESIGN

TISED
Trottier Institute for Sustainability in Engineering and Design

CELEBRATING THE RESEARCH & TALENT OF **SEDTALKS! SUSTAINABILITY CHANGEMAKERS**

MARCH 27, 2019

SEDTalks! is a TISED series where graduate students (our "ChangeMakers" tonight) from McGill University's Faculty of Engineering receive training in order to present their work in sustainable engineering and design to a mixed audience (that's you!).

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SEDTALKS!

MARIANNA UCEDA

Mining and Materials Engineering, PhD Candidate
George P. Demopoulos, Supervisor
Sustainable Industrial Processes and Manufacturing

Meeting the energy demand: green batteries from start to finish

Lithium-ion batteries, alongside green energy sources, have become an essential part of the green energy solution. They are used to store energy produced during periods of abundance (i.e. storing solar energy during the day) for use during times of reduced production (i.e. nighttime). While batteries can offset the pollution associated with fossil-fuel power systems, unfortunately, lithium-ion battery production cannot currently be considered green. Marianna's research focuses on improving the fabrication processes of lithium-ion batteries to reduce negative environmental impacts during the battery lifetime.

YEE WEI FOONG

Mining and Materials Engineering, PhD candidate
Kirk H. Bevan, Supervisor
Renewable Energy and Energy Efficiency

Designing energy materials: resolving ultrafast dynamics in materials simulations

To meet our growing energy demands, new high-performance clean-energy technologies are needed. These technologies rely on different materials, whose chemical and electrical properties control the resulting performance of the solar panel, fuel cell, or battery. The vast number of possible material combinations makes the prediction of material performance using advanced computational methods a critical component of this effort. Yee Wei's research explores the development and optimization of ultrafast and high-accuracy material simulation methods that can provide informed predictions to accelerate the design of urgently needed sustainable energy materials.

JENNIFER MARTIN DEL CAMPO RODRIGUEZ

Chemical Engineering, PhD candidate
Jan Kopyscinski & Sylvain Coulombe, Supervisors
Renewable Energy and Energy Efficiency

Upcycling greenhouse gases into clean fuels: plasma reforming of methane and carbon dioxide

Greenhouse gas emissions must be reduced in order to combat climate change. Carbon dioxide (CO2) and methane (CH4) are two of the most significant greenhouse gases, whose environmental impact can be reduced if they are used as raw materials for industrial processes instead of being emitted into the atmosphere. Jennifer's research is focused on developing new plasma-catalytic reactors that can upcycle CO2 and CH4 into syngas, through a reaction called dry reforming. The resulting syngas is a feedstock chemical which can subsequently be upgraded into synthetic natural gas, chemicals, and plastics for diverse applications.