

**Department of Chemical and Petroleum Engineering**  
**Chemical Engineering Capstone Projects – Final Presentation Schedule**

April 28, 2021 – Join via zoom: <https://ucalgary.zoom.us/j/98608144058>  
Click here to complete evaluation forms: <https://forms.gle/9SPCbmcToJUJdcHt7>

Time	Room 1	Room 2	Room 3	Room 4
9:10	<b>Introduction – General Guidelines</b>			
9:20	Modular medication manufacturing in Alberta	Production of ethylene and dimethyl ether from ethanol	Natural gas valorization	Bitumen upgrader utilizing thermal cracking, deasphalting and gasification
10:00	Environmentally benign surfactant-based disinfectants for environments contaminated with COVID-19	Sulfuric acid production	Design of 17 MMSCFD natural gas plant	In-line partial upgrading of bitumen
10:40	Production of viral vectors for human gene therapy	Novel carbon materials from bitumen derived asphaltenes	Small-scale LNG production facility	Reducing the flow resistance of heavy crude oils
11:20	Beyond milk	Aniline production from benzene	Is there a case for blue hydrogen in Alberta?	Design of asphalt production unit
12:00	<b>Lunch Break</b>			
1:00	Production of synthetic fuel using energy from small modular reactor	Mining rare earth metals from used electronic devices	Methanol production from air via CO <sub>2</sub> co-electrolysis	Breaking the mould: plastics-to-syngas-to-VAC
1:40	Coprocessing natural gas and CO <sub>2</sub> into synthetic crude oil	Lithium recovery and recycling: the bottleneck in electrification revolution?	Open hardware direct air capture	Upgrading of cannabis production byproducts
2:20	Novel approaches in geothermal energy recovery	Electrochemical synthesis of NH <sub>3</sub> for urea production	Direct air capture and hydrogenation of CO <sub>2</sub> into methanol	Organic solid wastes valorization
3:00	<b>Closing remarks</b>			

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**Instructions to Join a Presentation:**

1. Click **the direct link**: <https://ucalgary.zoom.us/j/98608144058>
2. If you have a Zoom client installed in your device, you will be prompted to login via that client, follow the on-screen instructions.
3. If prompted to enter a meeting ID, use the following code: **986 0814 4058**

Note: the meeting is open to the public, but a waiting room has been implemented as a precaution to avoid spamming. Please ensure that your login name is descriptive enough to allow the host to verify your identity.

**Joining a room:**

1. Click **Breakout Rooms**  in your meeting controls. This will display the list of rooms.
2. Hover your pointer over the number to the right of the room you wish to join, click **Join**, then confirm by clicking **Join**.

**Note:** If you did not join the meeting with the desktop or mobile app (version **5.3.0** or higher), you will not be able to self-select a breakout room. Please use the chat to let the host know which room you would like to join.

**Leaving the room:** You can leave the breakout room and return to the main meeting session at any time, or you can leave the meeting entirely from the breakout room.

1. Click **Leave Breakout Room**.
2. Choose if you want to leave the breakout room or the entire meeting.

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**Detailed Schedule**

**Room 1 – Morning Session**

**Modular medication manufacturing in Alberta**

9:20 – 10:00 am

Group members: Layne Willms, Robert McManus, Mikaela Ahloy, Maria Rivera, Erienne Kenney

Supervisor: Michael Kallos

**Environmentally benign surfactant-based disinfectants for environments contaminated with COVID-19**

10:00 – 10:40 am

Group members: Dante Forcinito, Karim Firdous, Stephen Pond, Walid Benchamma, Kyle Schofield

Supervisor: Qingye Lu

**Production of viral vectors for human gene therapy**

10:40 – 11:20 am

Group members: Thristan Taberna, Huneza Nadeem, Jessica May Corpuz, Phillip Scheck, Michidmaral Otgondavaa

Supervisor: Michael Kallos

**Beyond milk**

11:20 – 12:00 noon

Group members: Saransh Gautam, Ruel Benedict Seno, Mevin Moncy, Omar Al-Sayed, Jose Manzano Clemente

Supervisor: Hector De la Hoz Siegler

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**Detailed Schedule**

**Room 2 – Morning Session**

**Production of ethylene and dimethyl ether from ethanol**

9:20 – 10:00 am

Group members: Kamile Cepaityte, Farhan Rahman, Danika Mendonca, Ali Jamil, Arth Trivedi

Supervisor: Michael Foley

**Sulfuric acid production**

10:00 – 10:40 noon

Group members: Kurtis Marshall, Yong Li, Morgan McClure, Kajal Pandya

Supervisor: Maen Hussein

**Novel carbon materials from bitumen derived asphaltenes**

10:40 – 11:20 am

Group members: Mustafa Hasan Khan, Momodou Jarju, Javairia Kamran, Shiyu Lu, Xian Low

Supervisor: Qingye Lu

**Aniline production from benzene**

11:20 – 12:00 noon

Group members: Huiying Han, Zhiao Liu, Aimen Aldarkhobi, Dmytro Shershniuk

Supervisor: Michael Foley

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**Room 3 – Morning Session**

**Natural gas valorization**

9:20 – 10:00 am

Group members: Adedamola Korodele, George Imevbore, Muhammad Akbar, Lauren Van Horne

Supervisor: Hua Song

**Design of 17 MMSCFD natural gas plant**

10:00 – 10:40 noon

Group members: Kelsey Kinzner, Nancy Chen, Bassem Chaaban, Thinh Tong, Ryan Thon

Supervisor: Bent Nielsen

**Small-scale LNG production facility**

10:40 – 11:20 am

Group members: Tarndeeep Bhangu, Mohibul Bahrami, Ivan Lam, Jun Liu, Britney Anderson

Supervisor: Nashat Nassar

**Is there a case for blue hydrogen in Alberta?**

11:20 – 12:00 noon

Group members: Justin Holman, Yu Lin, Alexia Gendron

Supervisor: Kunal Karan

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**Room 4 – Morning Session**

**Bitumen upgrader utilizing thermal cracking, deasphalting and gasification**

9:20 – 10:00 am

Group members: SeungKee Baek, Imran Mahr, Raheel Khan, Jonathon Loeffler

Supervisor: Maen Hussein

**In-line partial upgrading of bitumen**

10:00 – 10:40 noon

Group members: Jesse Andersen, Matthew Scarpino, Jacob MacDonald, Julia Cryer, Quinlan Hinds

Supervisor: Apostolos Kantzas

**Reducing the flow resistance of heavy crude oils**

10:40 – 11:20 am

Group members: Nawal Malik, Miguel Chanco, Weihong Yang, Marc-Antoine Ray, Mohit Thaker

Supervisor: Ayodeji Jeje

**Design of asphalt production unit**

11:20 – 12:00 noon

Group members: Mohamed El-Ansary, Mohanad Sayed, Gibran Hnidi, Mohammed Ali, Ahmed Abouahmed

Supervisor: Maen Hussein

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**Room 1 – Afternoon Session**

**Production of synthetic fuel using energy from a small modular reactor**

1:00 – 1:40 pm

Group members: Michelle Chung, Isabella Vandergaag, Marcelo Mathias, Joycelyn Ho, Julia Malinovska

Supervisor: Michael Foley

**Coprocessing natural gas and CO<sub>2</sub> into synthetic crude oil**

1:40 – 2:20 pm

Group members: Nima Macci, Larissa Tse, Kazi Haque, Alexander Spectre, Shadman Sajid

Supervisor: Josephine Hill

**Novel approaches in geothermal energy recovery**

2:20 – 3:00 pm

Group members: Gurveer Bual, Simran Mann, Devrishi Mohindroo, Joseph Cheah, Rajan Chhoker

Supervisor: Apostolos Kantzas

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**Room 2 – Afternoon Session**

**Mining rare earth metals from used electronic devices**

1:00 – 1:40 pm

Group members: Aaron Milos, William Anderson, Richard Watt, Stirling Cenaiko, Alyssa Sommerville

Supervisor: Anne Benneker

**Lithium recovery and recycling: the bottleneck in electrification revolution?**

1:40 – 2:20 pm

Group members: Shihan Zhang, Neum Jelani, Zeeshan Ali, Matthew McCurdy

Supervisor: Kunal Karan

**Electrochemical synthesis of NH<sub>3</sub> for urea production**

2:20 – 3:00 pm

Group members: Pablo Contreras Perez, Sanjay Srinivasan, Muhammad Hassan Furrukh, Syed Hyder, Shermarke Yusuf

Supervisor: Kunal Karan



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**Room 3 – Afternoon Session**

**Methanol production from air via CO<sub>2</sub> co-electrolysis**

1:00 – 1:40 pm

Group members: Sakshi Shrivastava, Leslie Kingston, Shelley Newby, Inaara Mawji, Sabheen Uddin

Supervisor: Md. Kibria

**Open hardware direct air capture**

1:40 – 2:20 pm

Group members: Christy Baek, Ahmad Hanafy, Dania Abu Khaled, Mohab Elsayed, Veronica Chmielarski

Supervisor: Hector De la Hoz Siegler

**Direct air capture and hydrogenation of CO<sub>2</sub> into methanol**

2:20 – 3:00 pm

Group members: Murtaza Sadat, Sojeong Yun, Kevin Mesa, Braedon Neufeld, Bernice Yeung

Supervisor: Md. Kibria

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**Room 4 – Afternoon Session**

**Breaking the mould: plastics-to-syngas-to-VAC**

1:00 – 1:40 pm

Group members: Taranvir Hundal, Brandon Phan, Prithu Muhury, Marshal Rafio, Wyatt Flahr

Supervisor: Kunal Karan

**Upgrading of cannabis production byproducts**

1:40 – 2:20 pm

Group members: Mohammad Khan, Shantanu Naikade, Steven Arcus, Ayesha Nawaz, Lamiya Anis

Supervisor: Bent Nielsen

**Organic solid wastes valorization**

2:20 – 3:00 pm

Group members: Niyat Ghebreselasie, Haley McIvor, Thi Nguyen, Anthony Ju, Jackline Olotu

Supervisor: Hua Song