FROM THE INDUSTRIAL REVOLUTION UNTIL NOW
For centuries, hydrocarbons have provided the majority of the world’s energy but we’ve come to realize the unintended consequences of emitting carbon dioxide to the atmosphere in affecting global climate. Worldwide, pressure is increasing to reduce new carbon introduced into the atmosphere. Since significantly reducing dependence on hydrocarbons will take time, we must be increasingly responsible in how these resources are developed and used, requiring research areas such as in-situ, non-aqueous recovery, and partial upgrading.

CURRENT RESEARCH PROJECTS
Computational Seismic Full Waveform Inversion
Principal Investigator: Mauricio Sacchi

Developing Microwave Sensor Technology
Principal Investigator: Masum Hossain & Ashwin Iyer

How can passive seismic imaging techniques be used to monitor temporal variations in structures at CO2 sequestration sites?
Principal Investigator: Jeffrey Gu

Reservoir Engineering and Enhanced Oil Recovery
Principal Investigator: Hassan Dehghanpour

Reservoir management and advanced optimization for thermal and thermal-solvent based recovery processes using fundamentals, scaled models, and machine learning
Principal Investigators: Japan Trivedi & Ian Gates

Thermal Well Design and Testing
Principal Investigator: Alireza Nouri

Unlocking the Physics and Chemistry of Bitumen, Water, Solvent, and Porous Media Interfaces-an Enabling Technology for New Production Process Development
Principal Investigators: Apostolos Kantzas & Juliana Leung

Use of Electrical Heating to Remove Condensate Banking in the Near-Wellbore Region of Shale Condensate Reservoirs
Principal Investigator: Huazhou Li

Wireless Communication and Power Delivery
Principal Investigator: Rashid Mirzavand

Asphaltene Behaviors and Models
Principal Investigator: Hongbo Zheng

Bitumen-Solvent Product Cleaning
Principal Investigator: Qi Liu

Dynamics of colloids in phase separation
Principal Investigator: Xuehua Zhang

Solvent Recovery and Removal from NAE Extraction Gangue
Principal Investigator: Phillip Choi

Low-cost catalysts and methodologies for partial upgrading of bitumen
Principal Investigator: Jeffrey Stryker

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