UNIVERSITY OF ALBERTA
DEPARTMENT OF CHEMICAL
& MATERIALS ENGINEERING

12th Floor, ICE Building, 9211 – 116th Street
Edmonton, Alberta, Canada T6G 1V9
Tel: 780.492.3321
Fax: 780.492.2881
www.cme.engineering.ualberta.ca

2024 WORKSHOP ON

PROCESS AUTOMATION, AUTONOMY AND MACHINE LEARNING

Date: Monday, May 6, 2024

Time: 8:30 AM – 2:30 PM

Venue: ETLC 6-064/068 (ETLC building and take elevator to 6th Floor)

Sponsors: NSERC, Imperial Oil, Shell, Suncor, Syncrude, Teck Metals, Univ. of Alberta

TIME	TOPIC	SPEAKER
8:30 – 9:00 AM	Light Refreshments	
9:00 – 9:03 AM	Introduction	• Biao Huang
9:03 – 9:10 AM	Opening and Welcome Remarks	• Suvomoy Bhaumik (TAC Chair) • Leijun Li (Dept Chair)
	Section 1 (AI and Machine Learning)	
9:10 – 9:25 AM	Digital twin and AI for primary separation process	• Jansen Soesanto
9:25 – 9:40 AM	Flotation cell interface detection - machine learning approach	• Amir Mohseni
9:40 – 9:55 AM	Human-in-Loop control and optimization	• Alireza Memarian
9:55 – 10:10 AM	Scientific machine learning and application	• Hossein Mohammadghasemi
10:10 – 10:25 AM	Section 1 General Q&A	
10:25 – 10:45 AM	*Coffee Break*	

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	Section 2 (Advance Control & Estimation)	
10:45 – 11:00 AM	Polymer injection control in tailing pond	• Farzad Hourfar
11:00 – 11:15 AM	Physically informed modelling and prediction of free acid in a leaching process	• Jainish Rajput
11:15 – 11:30 AM	Freeze point estimation of blending process	• Khizer Mohamed
11:30 – 11:45 AM	Transfer Learning for Bayesian optimization	• Negareh Mahboubi
11:45 – 12:00 PM	Section 2 General Q&A	
12:00 – 1:00 PM	*Lunch Break (catered)*	
	Section 3 (Toolbox and AI Laboratory Prototyping)	
1:00 – 1:15 PM	New user-friendly soft sensor toolbox - self-guided version	• Ahmed Zihan Hossain
1:15 –1:30 PM	Oscillation detection, stiction detection and causal analysis toolbox	• Mohammad Hossein Modirrousta
1:30 –1:45 PM	Laboratory study of cyber attack-resistant control	• Malhar Barbhaya
1:45 –2:00 PM	Fault-tolerant autonomous control system	• Mahmut Tatlici
2:00 –2:15 PM	Section 3 General Q&A	
2:15 –2:30 PM	Closing Remarks	• Industry Partners

Contact:
Biao Huang
780-492-9016 (o)
780-903-8030 (c)
biao.huang@ualberta.ca

Parking Map:
Windsor Car Park