

## FEGRS 2024 Oral Presentation Schedule

### Day 1 (Aug 13)

#### Energy and Environment (DICE 8-207)

Time slot	Presenter		Presentation
14:15-14:30	Jilong Xu	jilong1@ualberta.ca	Phase Equilibria of CO <sub>2</sub> and n-Alkanes in bulk and confined space using Parallelized Wang-Landau Transition-Matrix Monte Carlo Simulations
14:30-14:45	Hadi Mokarizadeh	mokariza@ualberta.ca	Solar-Activated Cerium Oxide Photocatalysis Treatment for Removal of Naphthenic Acids from Real Oil Sands Process Water
14:45-15:00	Akmam Wardatul	wardatul@ualberta.ca	Potential Techniques to Measure In Situ Rheological Properties of Biomass Slurries During Pipeline Hydro Transport for Large-Scale Biofuel Production
15:00-15:15	Veronica Wambura	wambura@ualberta.ca	Wildfire Evacuation Choice-Making among Underserved Groups in Alberta and British Columbia
<b>Break</b>			
15:30-15:45	Dong Wang	dwang13@ualberta.ca	Tailor-made Co <sub>3</sub> O <sub>4</sub> @CeO <sub>2</sub> based nanofibrous membranes with enhanced catalytic reactivity for efficient degradation of antibiotic
15:45-16:00	Lian Duan	lduan2@ualberta.ca	High-Pressure CO <sub>2</sub> and CH <sub>4</sub> Transport in Smooth Crystalline Silica Mesopores: A Molecular Dynamics Study
16:15-16:30	Minjunshi Xie	minjunsh@ualberta.ca	Water Thin Films on Kaolinite Gibbsite and Edge Surfaces and Their Effects on Surface Wettability in Relation to Geological Carbon Sequestration

### Day 2 (Aug 14)

#### Communication, Internet of Things, and Artificial Intelligence (DICE 8-207)

Time slot	Presenter		Presentation
09:00-09:15	Keith Mills	kgmills@ualberta.ca	Expanding the Scope of Democratized Neural Architecture Search
09:15-09:30	Ruiqing Tian	ruiqing2@ualberta.ca	Explaining Graph Neural Network-Based Malware Classification from Hierarchical Graph Data Structure
09:30-09:45	Vishnu Jayaprakash	jayapra1@ualberta.ca	Deep Neural Networks for Equation of State Approximations

#### Control, Robotics and Automation (DICE 8-207)

Time slot	Presenter		Presentation
09:45-10:00	Yafei Ou	yafei6@ualberta.ca	CRESSim: A Contact-Rich Simulator for Realistic Surgical Simulation with the da Vinci Research Kit
<b>Break</b>			
10:15-10:30	Sadra Zargarzadeh	mzargarz@ualberta.ca	Advancing Surgical Autonomy: Multi-Modal Large Language Models for Enhanced and Explainable Decision-Making in Robot-Assisted Blood Suction
10:30-10:45	Jainish Rajput	jrajput@ualberta.ca	Physically informed modeling and prediction of free acid in a leaching process
10:45-11:00	Xinzhou Gao	xinzhou2@ualberta.ca	Robust Cooperative Source Seeking Based on a Distributed Model Predictive Control

#### Engineering in Healthcare (ETLC 6-060)

Time slot	Presenter		Presentation
09:00-09:15	Weiyang Chen	weiyang3@ualberta.ca	Applying Artificial Intelligence to Automatically Reconstruct 3D Ultrasound Spinal Images: A Phantom Study
09:15-09:30	Amirhossein Afkhami Ardekani	afkhamia@ualberta.ca	Integrating Webcam Image and User Log Data for Enhanced Affective State Analysis in Human-Computer Interaction During Gameplay
09:30-09:45	Lingyu Bu	lingyu@ualberta.ca	Development and Validation of a Finite Element Model for Orthodontic Aligners
09:45-10:00	Muhammad Jamal	mjamal4@ualberta.ca	Multi-Dimensional Skill Level Assessment in Data-Rich Training Settings
10:00-10:15	Graham Lunt	glunt@ualberta.ca	Effect of Surfactant Protein B on Polyethylenimine Mediated Pulmonary Gene Delivery: A Coarse-Grained Molecular Dynamics Study
<b>Break</b>			
10:30-10:45	Mahzad Sadati	sadati@ualberta.ca	Implementation of a response surface method and finite element analysis to optimize anisotropic material properties of cranial sutures
10:45-11:00	Joy Wang	joy3@ualberta.ca	Novel Fine Needle Aspiration-Paired Micro-Histotripsy for Cancer Biomarker Extraction and Diagnosis
11:00-11:15	Simon Eckelt	eckelt@ualberta.ca	Enhancing Surgical Training Through Graph Neural Networks-based Recommender System
11:15-11:30	Hadi Tamimi	htamimi@ualberta.ca	A Pipeline for Benchmarking Novel Markerless Motion Capture Systems
11:30-11:45	Arushi Tandon	tandon3@ualberta.ca	Detachable Bed-wheelchair for Movement of Immobile Patients

## Day 3 (Aug 15)

### Advanced Materials and Manufacturing (DICE 8-207)

Time slot	Presenter		Presentation
09:00-09:15	Luka Morita	lmorita@ualberta.ca	Optimization of Thermal Draw Tower Processes for Enhanced Manufacturing of Sensing and Actuating Smart Fibers
09:15-09:30	Roland Street	rstreet@ualberta.ca	Application of Braided Composites to Football Facemasks to Increase Energy Absorption and Reduce Neural Damage to Athletes
09:30-09:45	Md Anik Hossain	mdanik@ualberta.ca	Transverse Chirality-Induced Spin Selectivity in Peptide Functionalized Carbon Nanotubes
09:45-10:00	Faezeh Hosseini	fhossei1@ualberta.ca	Optimization of Laser Directed Energy Deposition Parameters for Al6061
<b>Break</b>			
10:15-10:30	Daniele Calista	dcalista@ualberta.ca	Quantitative Analysis of Temperature and Vee Length Evolution in Electric Resistance Welding
10:30-10:45	Parman Mojir Shaibani	parman@ualberta.ca	Atomic Layer Deposition of Transition Metals
10:45-11:00	Zahra Zaiemyekheh	zaiemyek@ualberta.ca	Developing a Multiscale Numerical Model with Experimental Validation for Fabrication/Optimization of Additively Manufactured Ceramics
11:00-11:15	Alvaro Arce-Borkent	arcebork@ualberta.ca	Enhancing Kevlar® Composite Resilience in Low Earth Orbit: Mitigating UV Degradation for Advanced Space Applications

### Electronics and Photonics (DICE 8-207)

Time slot	Presenter		Presentation
11:15-11:30	Mariam Moussilli	mmoussil@ualberta.ca	On the Optimization of Silicon PhotoMultipliers for Hybrid Photodetectors

### Infrastructure and Construction (ETLC 6-060)

Time slot	Presenter		Presentation
09:00-09:15	Ibironke Regina Adegun	iadegun@ualberta.ca	BIM-MEP Clash Report Analysis Using Machine Learning Algorithms.
09:30-09:45	Thayanne Ciriaco	thayanne@ualberta.ca	Measuring resilience hub accessibility by different modes of transportation in Edmonton

### Fluids, Dynamics, and Thermal Systems (ETLC 6-060)

Time slot	Presenter		Presentation
09:45-10:00	Khaled Mohamad	kmohamad@ualberta.ca	Exploring Water Drag and Air Pressure Impact on Airflow Dynamics in Sanitary Sewers: An Experimental and Numerical Study
10:00-10:15	Diaa Abdelghani	dabdelgh@ualberta.ca	Optimization and Modeling of District Energy Systems: A Pathway to Smart and Sustainable Cities

### Break

### Biomaterials and Their Applications (ETLC 6-060)

Time slot	Presenter		Presentation
10:30-10:45	Leslie Sanchez	lvsanche@ualberta.ca	ABA Triblock Copolymer Nanogel for siRNA delivery
10:45-11:00	Amirhossein Taghipour	taghipo1@ualberta.ca	From Coffee Waste to Clean Water: Innovative Use of Lignin in Fabrication of Sustainable TFC Membranes
11:00-11:15	Maha Ead	mead@ualberta.ca	Polycarbonate-urethane (PCU) in the Ankle Joint
11:30-11:45	Aishwarya Pawar	aspawar@ualberta.ca	Western blot analysis of metabolite effect on protein adsorption to PEO gold surfaces

# FEGRS 2024 Poster Presentation Schedule

*Venue: Fred Pheseay Engineering Commons, DICE (8th Floor)*

## Round 1 (12:00 - 13:00)

Poster No.	Presenter	Presentation
1	Aidan Richardson aerichar@ualberta.ca	Experimental Investigation of Particle Degradation of Agricultural Residue Biomass in Post-Pumping during Pipeline Hydro Transport
3	Monisha Alam monisha@ualberta.ca	Comparative Effects of Petroleum and Bio-Based Nano/Microplastics on Biohydrogen Production from Sludge
5	Tanay Kumar tanay2@ualberta.ca	Root-based solar interfacial evaporation setup for efficient volumetric reduction of concentrated slurry waste
7	Nima Mahmoudi Majdabadi mmahmou4@ualberta.ca	Integration of a Dynamic Heat Pump Model with Analytical Ground Heat Exchanger Solutions: Exploring Temperature Variations in the Ground and their Impact on System Performance
9	Kiarash Mahdavihezaveh mahdavih@ualberta.ca	Adsorption and Desorption of Automotive Paint Emissions on Honeycomb Zeolite
11	Roberto Javier Escobar Mou rescobar@ualberta.ca	Quantifying Flood Depth: Remote Estimation of Flood Depths with Fast Response Tools
13	Mohammadamin Rashidi mrashidi@ualberta.ca	Dispersive Liquid-Liquid Microextraction (DLLME) Coupled with Omniphobic Glass Fiber Membrane for Ultrasensitive Surface-Enhanced Raman Spectroscopy
15	Rouhollah Heydari rheydari@ualberta.ca	Cyclic adsorption/regeneration of VOCs from automotive painting booths on honeycomb zeolite
17	Jingya Pang jpang3@ualberta.ca	Assessing the potential of activated bauxite residue (ABR) to remove PFAS in the water column
19	Farzad Dadbaksh dadbakhs@ualberta.ca	Ground Source Heat Pumps
21	Jian Shi js23@ualberta.ca	Identifying dominant hydrological processes in the watershed through sensitivity analysis
23	Priscila Portocarrero pportoca@ualberta.ca	Characterizing wake patterns in scattered two-foil schools
25	Ramin Mashayekhi mashaye1@ualberta.ca	Development of a Radiation Model for CubeSats Using Thermal Circuit Analogy in LTSpice
27	Muhammad Muzzammil muzzammi@ualberta.ca	Low-Cost Quartz Tuning Fork: An Orthogonal Tool for Characterizing Low-Volume Liquid Reagents

## Round 2 (13:00 - 14:00)

Poster No.	Presenter	Presentation
2	Shima Jalali shima1@ualberta.ca	Gecko-Inspired Adhesive Layers Using SEBS/PP Blends for Stiffness Tuning in Soft Robotics Applications
4	Daniel Gye dgye@ualberta.ca	The Effect of Sub-Zero Space Temperatures on Tubular Braided Composites for use in Satellites
6	Shienna Marie Pontillas pontilla@ualberta.ca	Engineering Biomaterials for Gene Therapy: Synthesis of Thioether-Lipid Polyethyleneimine Vectors
8	Sergio Enrique Tapia Lishner tapialis@ualberta.ca	Real-time updating of a dynamic model for the monitoring of column froth flotation processes
10	Mahdi Chalai abdolla2@ualberta.ca	Evaluating Gait Symmetry with a Smart Robotic Walker: A Novel Approach to Mobility Assessment
12	Mahmut Tatlici tatlici@ualberta.ca	Reinforcement-Learning Driven Autonomous Control with Fault-Tolerance
14	Amber Wardrop alwardro@ualberta.ca	Insight in Volleyball Biomechanics: Markerless Motion Capture Analysis of the Spike Approach
16	Lily Liu zl3@ualberta.ca	Neuromechanical Characterization of Human Trunk Function during Real-World Upper Limb Tasks
18	Hanieh Ahmadi haniye@ualberta.ca	Longitudinal Hippocampal T2 mapping in Mild Cognitive Impairment and Alzheimer's Disease from a Standard Sequence
20	Yeganeh Aliyari Shoooredeli aliyaris@ualberta.ca	A Novel Approach for Tissue Tracking During Breast Lumpectomy
22	Negar Majidi nmajidi@ualberta.ca	The Fabrication of a Large-Area Bias-Sensitive Ultrasound Probe
24	Arushi Tandon tandon3@ualberta.ca	Effect of Mesenchymal Stem Cell Conditioned Media on Fibroblasts: Implications for Skin Regeneration and Wound Healing
26	Javad Mirzaei jmirzaei@ualberta.ca	Field Testing the Use of Novel Remediation Technique to Improve Buried Pipelines Performance Under Large Displacements
28	Hector Calvo hcalvo@ualberta.ca	Identification and Assessment of Transportation Infrastructure Vulnerability through LiDAR
30	Amirhossein Iranmehr iranmehr@ualberta.ca	Fatigue Analysis of X70 Pipeline Steel Using Theory of Critical Distance Integrating Experimental and Numerical Methods