



EDWARD E. WHITACRE JR.
COLLEGE OF
ENGINEERING
TEXAS TECH

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COLLEGE
OF
ENGINEERING
RESEARCH
DAY

PROGRAM & SPEAKER DETAILS

FEBRUARY 9TH, 2026

TTU STUDENT UNION BUILDING

WCOE RESEARCH DAY

PROGRAM & SPEAKER DETAILS

FACULTY PRESENTATIONS: SUB ESCONDIDO THEATRE,

LUNCH & POSTER PRESENTATIONS: SUB BALLROOM

9:00AM-9:05AM Welcome and Introductions - Roland Faller, WCOE Dean, ChE

9:05AM-9:25AM Unraveling fundamental activity -stability relationships in rutile oxides - Joe Gauthier, ChE (Session Chair: Jennifer Cross)

9:25AM-9:45AM The Intersection of Control and Design Engineering for Energy Systems - Donald Docimo, ME (Session Chair: Jennifer Cross)

9:45AM-10:05AM Security Beyond Sensors: Attacking Visual SLAM via the Environment - Wei Wang, CS (Session Chair: Jennifer Cross)

10:05AM-10:25AM TTU's Subsurface Hydrogen Production Research - Qingwang (Kevin) Yuan, PE (Session Chair: Jennifer Cross)

10:25AM-10:40AM Coffee Break

10:40AM-11:00AM Radiative Cooling: A Passive, Energy-Free Approach to Keeping Buildings Cool - Lyu Zhou, ECE (Session Chair: Paul Egan)

11:00AM-11:20AM Wind hazard mitigation with Nature-inspired fractal parapets for low-rise buildings - Wei Zhang, CECE/WI (Session Chair: Paul Egan)

11:20AM-11:40AM Joint Client Selection and UAV Placement in UAV-Aided Federated Learning - Jingjing Yao, CS (Session Chair: Paul Egan)

11:40AM-12:40PM Lunch/Poster Session A (Session Chair: Joshua Howe, James Sheng)

12:40PM-1:40PM Lunch/Poster Session B (Session Chair: Yuexiao Shen)

1:40PM-2:00PM Cybersecurity and Semiconductor Device Research Overview at TTU - Argenis Bilbao, ECE (Session Chair: Miao He, Lu Wei)

WCOE RESEARCH DAY

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FACULTY PRESENTATIONS: SUB ESCONDIDO THEATRE,

LUNCH & POSTER PRESENTATIONS: SUB BALLROOM

2:00PM-2:20PM	Catalysis at the Crossroads: Membranes and Plasmas for a Low-Carbon Future - Casey O'Brien, ChE (Session Chair: <i>Miao He, Lu Wei</i>)
2:20PM-2:40PM	Granular Mechanics in the Face of Evolving Research Priorities - Yimin Lu, CECE (Session Chair: <i>Miao He, Lu Wei</i>)
2:40PM-3:00PM	Decision Making Under Uncertainty: From Data Scarcity to Large-Scale Systems - Ningji Wei, IMSE (Session Chair: <i>Miao He, Lu Wei</i>)
3:00PM-3:15PM	Coffee Break
3:15PM-3:35PM	Leveraging Big Data to Understand and Model Turbulent Flows - Dhawal Buaria, ME (Session Chair: <i>Changzhi Li</i>)
3:35PM-3:55PM	Micro(nano)plastic in Environment – Challenges in Quantifying its Occurrence and Risks - Balaji Rao, CECE (Session Chair: <i>Changzhi Li</i>)
3:55PM-4:15PM	Scalable Bayesian Nonparametric Method for Clinical Risk Prediction Using Large-Scale Data from Heterogeneous Populations - Dongping Du, IMSE (Session Chair: <i>Changzhi Li</i>)
4:15PM-4:30PM	Poster Awards/End

POSTER SESSION

AUTHORS & PRESENTATIONS

POSTER PRESENTATIONS: SUB BALLROOM

ODD NUMBERED POSTERS-SESSION A, EVEN NUMBERED POSTERS-SESSION B

ADDITIVE MANUFACTURING/ POLYMERS

- 1.** 3D hybrid bioprinting for acoustic cell patterning and perfusible tumor microenvironment for cell response to drug - Marielena Molinaires, Md Shahriar, Jingfei Liu, Changxue Xu, IMSE
- 2.** Design, fabrication, characterization and modeling of additive manufactured devices for label-free magnetic cell fractionation using novel magnetic nanoinks - Minh Duy Phan, Raquel Vera, Bahareh Rezaei, Sela Boswell, Nishat Paul, Ahasun Habib Hridoy, Hanlei Wang, Shahriar Mostufa, Jenifer Gomez-Pastora, Kai Wu, Minxiang Zeng, James Yang, ChE
- 3.** Numerical Investigation of Molten Droplet Impact on Engineered Substrates Using SPH - Bhanu Prakash Maddineni, Song-Charng Kong, ME
- 4.** Predicting 3D Food Ink Performance: Rheology-Based Printability Windows and Prediction of Textural Properties Using ML - Md Ibrahim Khalil, Yashwanth Kumar Kondabathula, Ranadip Pal, Gordon F. Christopher, Farnaz Maleky, Paul F. Egan, ME
- 5.** Reactive printing of functional materials and devices - Nishat Paul, Minxiang Zeng, ChE
- 6.** Vertical Trajectories of Molten Material and the Effects of Ultrasonic Vibration on Thermal and Mechanical Behavior in Laser Directed Energy Deposition - Sarower Kabir, Weilong Cong, IMSE
- 7.** Workflow for Field-Deployable Prosthetic Hand Manufacturing - William Renter, Paul Egan, ME

- 8.** Comparison of Wind Tunnel Tests of Peak Pressures over the TTU WERFL Building with Full-scale Measurements. - Gobinda Kirtonia, Wei Zhang, Erick Shelley, Elliott Walker, CECE
- 9.** Thermomechanical analysis of glow plug during fuel droplet injection using multilevel resolution SPH - Kamyab Karimi, Song-Charng Kong, ME

AEROSPACE

AI/DATA SCIENCE

- 10.** Bayesian Hyperparameter Optimization Yields Measurable Gains in MACE Force Accuracy for Ir-Ox systems - Destin Maleka, Mikael Maraschin, Joseph A. Gauthier, ChE
- 11.** A Unified Framework for Empowerment and Predictive Control - Tristan Shah, Volodymyr Makarenko, Wooyoung Chung, CS
- 12.** DRIVER VISUAL ATTENTION MODELING VIA VISION-LANGUAGE IN-CONTEXT LEARNING - Kaiser Hamid, Ashrafi Akbar, Nade Liang, IMSE
- 13.** Genomic Data Generation via Correlation-Guided and Privacy-Preserving Diffusion - You Li, Shuainan Liu, Shaojie Zhan, Zhongshuo Fang, Tianxi Ji, CS
- 14.** Geo-difference in Mobile Apps and their compliance with Regionally Privacy Regulations – Huan Zhao, Song Liao, CS
- 15.** Mitigating Gradient Inversion Attacks in Smart Grids Using HFL with Local Adaptive Clipping - Syeda Sanjana Shahid, Tara Salman, Mohamed Baza, CS
- 16.** Multi-fidelity data-driven modeling of milled biomass compression behavior with sparse experimental data - Rui Li, Mengqi Li, Xuyang Li, Pin Zhang, Zhiheng Wang, Yimin Lu CECE
- 17.** Perturbation-Free Label Differential Privacy for Long-Tailed Classification - Shuainan Liu, Zhongshuo Fang, Shaojie Zhan, You Li, Tianxi Ji, CS
- 18.** Privacy Loss of Noise Perturbation via Concentration Analysis of A Product Measure - Shuainan Liu, Tianxi Ji, Zhongshuo Fang, Lu Wei, Pan Li, CS
- 19.** Private Dataset Distillation via Langevin Dynamics - Shaojie Zhan, Shuainan Liu, Zhongshuo Fang, You Li, Tianxi Ji, CS
- 20.** RATED: Reliability-Aware AI Agent Tool Retrieval via Execution Dynamics - Weiliang Chen, Song Liao, CS
- 21.** Token-Context Attention for NLI: An Alternative to Self-Attention - Xin Zhang, Victor S. Sheng, CS
- 22.** Uncertainty Quantification and Sensitivity Analysis of DSSAT Cotton Growth and Yield Using Polynomial Chaos Expansion - Mengqi Li, Will Dodge, Zhiheng Wang, CECE

POSTER SESSION

AUTHORS & PRESENTATIONS

POSTER PRESENTATIONS: SUB BALLROOM

ODD NUMBERED POSTERS-SESSION A, EVEN NUMBERED POSTERS-SESSION B

BIOMECHANICS

23. Biomechanical Effects of Virtual Reality Office Work on the Neck: Influence of Task Demands and Ergonomic Supports - Felipe Z. Santos, Changwon Son, Hanjun Park, Changxue Xu, James Yang, Nade Liang, IMSE

24. A Sensitivity-Guided Hybrid Parameterization of the 4CCr Muscle Fatigue Model - Baivab Bhandari, James Yang, ME

BIOMEDICAL/ HEALTHCARE

25. 3D Tumor-Mimicking Phantom Models for Assessing NIR I/II Nanoparticles in Fluorescence-Guided Surgical Interventions - Asma Harun, Nathaniel Bendele, Mohammad Ibrahim Khalil, Isabella Vasquez, Jonathan Djuanda, Robert Posey, Md Hasnat Rashid, Gordon Christopher, Ulrich Bickel, Viktor Gruev, Joshua Tropp, Paul F. Egan, Indrajit Srivastava, ME

26. A Framework for Time-Frequency Analysis of Acoustic Signals to Noninvasively Diagnose Cardiovascular Diseases - Jingfei Liu, Yoshita Parvathaneni, ME

27. Analyzing Usability Challenges and Guidance for Telemonitoring and Remote Patient Monitoring Systems: Initial Insights from a Systematic Literature Review. - Armina Rahman Mim, Changwon Son, IMSE

28. Biomineralized Surface-Enhanced Raman Scattering (SERS) Nanotags for Multi-Faceted Disease Diagnosis - Md Hasnat Rashid, Aarti Khatri, Posy Peyton, Troy Nations, Danielle E. Levitt, Balakrishna Koneru, Indrajit Srivastava, ME

29. Breast Cancer Stem Cells Magnetic Characterization and Isolation - Paz Gonzalez, Karla Mercedes, Farrell, Reagan, Nguyuen T. Tran, Linh, Wu, Xian Wu, Rodriguez, Eliana, Venere, Monica, Chalmers, Jeffrey, Chen, Kuan Hui, Gomez-Pastora, Jenifer, ChE

30. Cognitive Load Assessment from Wearable EEG Using Algebraic Artifact Detection and Localized Wavelet Denoising - Farzana Fariha, CS

31. Control of Kinesin-5 Motor Regularity by Tail Phosphorylation - Aliyeh Mehranfar, Meredith D. Betterton, Roland Faller, ChE

32. Drone Network Design Optimization for Rural Blood Delivery in West Texas - Yi D. Lin, Gabriel Teodoro, Phil Sizer, Emily Vanderpool, Hamidreza Validi, Bryan A. Norman, IMSE

33. ECG-derived Real-time Respiration Tracking with Dual-Sided Inkjet-Printed Wearable Electrodes Using Edge-AI Computing - Ucchwas Talukder Utsha, Mahfuzur Rahman, Bashir I. Morshed, CS

34. Effect of Anisotropic Cage Material Properties on Intradiscal Pressure in a THUMS-Based Lumbar Spine Model - Bishal Karki, Ryan Reilly, Andres Mena, AKM Ahasun Habib, James Yang, Paul Egan, ME

35. Effect of Ligament Stiffness on Wrist Biomechanics Using Finite Element Models - Brady Filla, Andres Mena, Ronit Wollstein, James Yang, ME

36. Golf Swing Classification Using FMCW Radar from Varying Angles of Observation - Anjali Sharma-Tiwari, Christopher Williams, Changzhi Li, ECE

37. Hand Gesture Analysis from EMG Signals Using Dry Flexible Inkjet-Printed (IJP) Electrodes with AI Algorithms - Nabonita Mitra, Bashir I. Morshed, CS

38. Hyperuniform Patterned Microfluidic Device with Hydrodynamically Engineered Zones For Isolation and In-Situ Phenotyping of Breast Cancer Cells - Rutwik Joshi, Hesaneh Ahmadi, Brayden Woods, Joel Garcia, Wei Li, ChE

39. Layer-by-Layer Microfluidic Immunoabsorption Platform for Depleting Peanut-Specific Antibodies from Whole Blood - Hesaneh Ahmadi, Nur Hendri Wahyu Firdaus, Rutwik Joshi, Akhilesh Kumar Shakya, Wei Li, ChE

40. Machine Learning-Guided Design of t-FUS Transducers for Deep Brain Neuromodulation in Obesity Treatment in a Mouse Model - Sadman Labib, Jingfei Liu, ME

POSTER SESSION

AUTHORS & PRESENTATIONS

POSTER PRESENTATIONS: SUB BALLROOM

ODD NUMBERED POSTERS-SESSION A, EVEN NUMBERED POSTERS-SESSION B

BIOMEDICAL/ HEALTHCARE

- 41.** Magnetic Characterization of Healthy and Sickle Cell Disease Monocytes - Santiago Rodriguez Caballero, Rova Kaniz Fahima, Linh Tran, Karla Paz Gonzalez, Jeffrey Chalmers, Jenifer Gomez Pastora, ChE
- 42.** Modulating Vascular Smooth Muscle Cell Behavior via Lignin-Incorporated PCL Nanofibers: Impact on Proliferation, Antioxidant Response, and Phenotype Maintenance - Glen See, Iyad Abu Hammam, Zhongkui Hong, ME
- 43.** Novel Magnetic Technology for Sickle Cell Disease Management - Linh Tran, Karla Paz Gonzalez, Reagan Phariss, Poornima Iyer, Jeffrey Chalmers, Lukman Tijani, Jenifer Gomez Pastora, ChE
- 44.** PATIENT-SPECIFIC SIMULATION OF STENT GRAFT DEPLOYMENT FOR RISK ASSESSMENT IN THORACIC ENDOVASCULAR AORTIC REPAIR - Zhongxi Zhou, Yuhang Du, Zhaoming He, Minliang Liu, ME
- 45.** Physiological monitoring using harmonic radar and battery-less nonlinear tag - Leya Zeng, Changzhi Li, ECE
- 46.** Poly(p-Coumaric Acid) Nanoparticles as Self-Therapeutic MAPK-Modulating NIR-I Theranostics - Mahenour Megahed, Asma Harun, Kaylee Herrera, Md. Hasnat Rashid, Robert Posey, Joshua Tropp, Indrajit Srivastava, ME
- 47.** Predicting Upper-Limb Kinematics for Rehabilitation: A Machine Learning Approach Using sEMG and Motion Capture - Diogo Aidar Trindade, Baivab Bhandari, James Yang, ME
- 48.** Scalable Wet Ball Milling of Iron Oxide Nanoparticles for Efficient and Controllable Magnetic Hyperthermia - Shahriar Mostufa, Bahareh Rezaei, Md Shahriar, Karla Mercedes Paz González, Anil Kumar, Changxue Xu, Yun Suk Eo, Ioannis H. Karampelas, Jenifer Gómez-Pastora, Rui He, Kai Wu, ECE
- 49.** Self-Similar Biomarker for Identifying Epileptogenic Zone in Patients with Medically Refractory Epilepsy - Md Abu Noman Kausar, Emily Pereira, ECE
- 50.** Shape and Cation Engineered Ferrite Nanoparticles for Theranostic Performance in Ovarian Cancer
- 51.** Time-Constant Induced Memory Effect for Biomedical Radar Vital Signs Detection - Syed Doha Uddin, Christopher Williams, Changzhi Li, ECE
- 52.** Ultrabright NIR-II Nanoprobes for Ex Vivo Bioimaging: Protein Nanoengineering Meets Molecular Engineering - Isabella Vasquez, Asma Harun, Robert Posey, Ruhan Reddy, Nikita Gill, Ulrich Bickel, Joshua Tropp, Indrajit Srivastava, ME
- 53.** Ultrasonic Guided Wave Elastography in Blood Vessels: Numerical Investigation of Wave Propagation in a Three-Layer Model - Azin Nadi, Jingfei Liu, ME

BIOSEPARATION

- 54.** Modeling and Simulation of Electrochemical Separation of Carboxylates with Capacitive Deionization - Sadia Saberin, Lauren Valentino, Meltem Urgun-Demirtas, Chau-Chyun Chen, ChE

COLLOIDAL SUSPENSIONS

- 55.** Viscoelasticity of Nanocolloidal Suspensions from Probe Rheology: Probe Size and Statistics - Masoumeh Pourasgharoshtebin, Eric M. Furst, Rajesh Khare, ChE

COMPUTER SCIENCE

- 56.** Identifying and Characterizing Cache Side Channel Vulnerabilities on AMD GPUs - Daniel Benedict, Zihao Zhan, CS
- 57.** Optimizing In-Situ Trajectory Data: MD simulations - Error-Bounded, High-Performance, and Logically Deterministic Data Reduction - Huyen Vu, CS

POSTER SESSION

AUTHORS & PRESENTATIONS

POSTER PRESENTATIONS: SUB BALLROOM

ODD NUMBERED POSTERS-SESSION A, EVEN NUMBERED POSTERS-SESSION B

CONTROLS/ ROBOTICS

- 58.** A Systematic Framework for Harmonic Set Selection in Multiplexed Magnetic Particle Spectroscopy - Hanlei Wang, Kai Wu, ECE
- 59.** Comparative Evaluation of Fractional-Order and ARMA Models for Neural Time-Series Analysis - Matias Varrone, Emily Pereira, ECE
- 60.** Controllable Information Production - Tristan Shah, Stas Tiomkin, CS
- 61.** Dynamics Aware Past-Future Information Bottleneck - Wooyoung Chung, Stas Tiomkin, cs
- 62.** Electrochemical Fault Diagnosis in Lithium-Ion Batteries - Sara Sepasiahooi, Shu-Xia Tang, ME
- 63.** Emergence of Diverse Social Interactions Through “Egoistic Empowerment” - Tristan Shah, Ilya Nemenman, Daniel Polani, Stas Tiomkin, CS
- 64.** Information-Theoretic Control of Hybrid Systems - Noam Smilovich, Stas Tiomkin, CS
- 65.** Koopman Mode-Based Detection of Internal Short Circuits in Lithium-ion Battery Pack - Sanchita Ghosh, Soumyoraj Mallick, Tanushree Roy, ME
- 66.** Natural Driving Autonomous Vehicle - Bryan Bejoy, ME
- 67.** Novel Dynamic Path Planner for Autonomous Vehicles: Towards Human-Like Lane-Changing Reference Trajectory - Yanwen Yang, ME
- 68.** Robust Robot Learning for Real Industrial Robots - Joshua Huang, Stas Tiomkin, CS

CYBERSECURITY/ RESILIENCE

- 69.** Guarding Your Conversations: Privacy Gatekeepers for Secure Interactions with Cloud-Based AI Models - GodsGift Uzor, CS
- 70.** Intermittent File Encryption in Ransomware: Measurement, Modeling, and Detection - Ynes Ineza, CS
- 71.** Near-Ultrasonic Environmental Presence as a Third Factor for Usable Authentication - Hasan Al-Quudah, Abdul Serwadda, CS
- 72.** NetMonAI: An Agentic AI Framework for Network Security & Monitoring - Pallavi Zambare, Maneesh Malepati, Ying Liu, CS
- 73.** Rethinking PUF Design for Scalable Edge AI: Balancing ML-Attack Resistance and Real-World Deployment - Gaoxiang Li, Yu Zhuang, CS
- 74.** SANDBOX-BLEED: Breaking the Browser Sandbox with the Data Memory-dependent Prefetcher - Wei Qiu, Zihao Zhan, CS
- 75.** Single-Drone Assisted and Collaborative Dummy Generation Strategies for Location Privacy in Sky-of-Privacy-Things - Sthephany Rojas Sabogal, Surya Harshitha Kadali, Sunho Lim, Anisa Bente Newaz, Adam Tirado, Jinseok Chae, Jangho Lee, Cong Pu, CS

DATA VISUALIZATION

- 76.** CHRONOS: Cluster Historical and Real-time Observation Network for Operational System and Visualization - Amauri Ribeiro, CS
- 77.** PowerMap and Time-Indexed PCA Trajectories: Interactive Visual Forensics for HPC Incidents - Phornsawan Roemsri, Tommy Dang, CS
- 78.** Space-Time Visualization of Highway Pavement Condition: From 2D Charts to 3D Geographic Narratives - Moon Won, Tommy Dang, Hoang T. Pham, Samuel Alalade, Konner Wood, CS

POSTER SESSION

AUTHORS & PRESENTATIONS

POSTER PRESENTATIONS: SUB BALLROOM

ODD NUMBERED POSTERS-SESSION A, EVEN NUMBERED POSTERS-SESSION B

ENERGY

79. A Multi-layer Power Observability Framework for HPC: Design and Evaluation on REPACSS - Yongjian Zhao, Jie Li, Chenxu Niu, Yong Chen, CS

80. A Thermodynamic and Surface Chemistry Perspective on Halide Segregation in Metal Halide Perovskites - Abrar Fahim Navid, Zeeshan Ahmad, ME

81. Design and Modeling of a Heat-exchange Sleeve for Enhanced Thermal Safety of Lithium-Ion Batteries - Patryck Ferreira, Shu-Xia Tang, ME

82. Design, Build, and Validation of a Battery Test System Enabled by Bounded Integral Control (BIC) - Shafquat Yasar Aurko, Kevin Norman, Beibei (Helen) Ren, Qing-Chang Zhong, ME

83. Directive-Accelerated Multiphase SPH Solver for Heterogeneous Architectures - Yongsuk Cho, Song-Chang Kong, ME

84. KAN-Therm: A Lightweight Battery Thermal Model Using Kolmogorov-Arnold Network - Faysal Ahamed, Soumyoraj Mallick, Sanchita Ghosh, Tanushree Roy, ME

85. Methane activation over MoxFeyC2 using a gas-phase model for Methane Dehydroaromatization (MDA). - Raúl De León, Joshua D. Howe, ChE

86. PULSE: A Phase-Aware Ultra-Lightweight Scaling Engine for HPC Energy Efficiency - Tongyang Wang, Jie Li, CS

87. Resilient Sensing in Battery Packs: A Self-Learning Koopman Approach - Sanchita Ghosh, Tanushree Roy, ME

88. Scaling discrepancy on the screening of emerging biomass particles - Weihe Sun, Yidong Xia, Jordan Klinger, Yimin Lu, CECE

89. Ultrasonic State-of-Charge/State-of-Health Characterization of Lithium-Ion Batteries - Jingfei Liu, Ezekiel Anguiano Jr., ME

ENGINEERING EDUCATION

90. Developing a Hybrid RAG-FRAM Framework for Assessing Organizational Resilience in University Departments - Diego Polanco-Lahoz, Jennifer Cross, IMSE

ENVIRONMENTAL ENGINEERING

91. Elemental Speciation in Electrochemically Treated Biosolids for Potential Land Application - Andrés Sánchez García, Jedian Adjei, Kayleigh Millerick, Christian Alvarez-Pugliese, Gerardine G. Botte, Emilio Rios Serna, Danny Reible, Balaji Rao, ChE

92. PFAS sorption and diffusion through landfill liner material and implications for long-term groundwater contamination - Kiana Rouhi, Mohammad Khosravikia, Jennifer Guelfo, Danny Reible, CECE

93. Per- and polyfluoroalkyl substances (PFAS) transport from biosolids-amended soils: an experimental and numerical approach - Alonso Doria-Manzur, Evan P. Gray, Summer S. Streets, Jennifer L. Guelfo, CECE

HIGH PERFORMANCE COMPUTING

94. MonSTer on REPACSS: Architecture, Deployment, and Future Work - Rupak Kadel, Jie Li, Yong Chen, CS

HUMAN FACTORS

95. Asymmetric Shifts in Risk Perception: Evaluating Driver Responses to Traffic Density Transitions - Peihang Li, Nade Liang, IMSE

MICROELECTRONICS/ RF SEMICONDUCTOR

96. Subthreshold Nonlinear Mixer with Active Bypass and Robust PVT Performance for Passive Sensing - Max Anacleto Vasconcelos, Changzhi Li, ECE

POSTER SESSION

AUTHORS & PRESENTATIONS

POSTER PRESENTATIONS: SUB BALLROOM

ODD NUMBERED POSTERS-SESSION A, EVEN NUMBERED POSTERS-SESSION B

QUANTUM COMPUTING/ INFORMATION

97. Higher-order cumulants of entanglement entropy - Linfeng Wei, Youyi Huang, Lu Wei, CS

98. PyMatchingSHMEM: Parallelizing PyMatching with OpenSHMEM for Scalable QEC - Jaden Hicks, Michael Beebe, Yash Kumar, Yong Chen, CS

99. Quantum Patches for Efficient Learning - Ban Tran, Susan Mengel, CS

RADAR/ RF HARDWARE

100. MIMO Radar Systems for Short-Range Localization - Derek Thompson, Changzhi Li, ECE

101. Preliminary Design and Applications of Software Defined Radar - Nicholas Rethans, Changzhi Li, ECE

RHEOLOGY OF PARTICLE SUSPENSIONS

102. Particle-resolved rheological modeling of dilute suspension with non-spherical particles - Fan Yang, Nishat Paul, Minxiang Zeng, Yimin Lu, CECE

SEMICONDUCTORS

103. Multilayer Sputtering Strategy for Enhanced Al Incorporation in β -Phase $(\text{Al}_x\text{Ga}_{1-x})_2\text{O}_3$ - Yu-Che Ho, Caroline Ormond, Shahriar Mostufa, Matthew Gaddy, Vladimir Kuryatkov, Kai Wu, Stephen Bayne, Hieu P. T. Nguyen, Ayton A. Bernussi, ECE

104. Tuning the magnetic properties of CrI₃ using Ni - Cynthia Nnokwe, Connor J. Cunningham, Wenhao Liu, Gaihua Ye, Tri Nguyen, Kai Wu, Caden Sadler, Pavel V. Lukashev, Bing Lv, Jia-An Yan, Paul M. Shand, Andrew J. Stollenwerk, Rui He, ECE

SUSTAINABILITY

105. Biomaterial-Based Sustainable Recovery of Rare Earth Elements - Eunhye Park, Md Dipu Malitha, Inseok Chae, ChE

106. Design of Rare-Earth Free FeNi based Permanent Magnetic Materials for Sustainable Energy - Md Abdul Wahed, Chang-Dong Yeo, Yang-Ki Hong, ME

107. Magnetically enhanced electrochemical systems for waste-to-resource conversion processes - Rodrigo A. Hernandez, Jenifer Gomez-Pastora, Jose Antonio Abarca, Cristina González-Fernández, Guillermo Díaz-Sainz, ChE

108. Organic Fluorine Quantitation of Landfill Leachate Using Combustion Ion-Chromatography and Inductively Coupled Plasma Mass Spectrometry - Grisel Cogollo Carcamo, Evan Gray, Jennifer Guelfo, CECE

109. Recycling waste wind turbine blade materials in asphalt binders: Investigation of compatibility, dispersion, aging resistance, and rheological performance - Sandesh Pandey, Samantha Kristufek, Tewodros Ghebrab, Rajesh Khare, Paul Egan, Priya Gill, Pawel Polaczyk, CECE

TEXT-TO-SQL LLM SECURITY

110. Vibe Coding on Trial: Operating Characteristics of Unanimous LLM J - Muhammad Aziz Ullah, Abdul Serwadda, CS

TURBULENCE (FLUID)

111. Unraveling the physics of mixing in turbulent flows through extreme-scale computing - Ruqaiya Islam Mishi, Dhawal Buaria, ME

UNCERTAINTY MODELING

112. A Lightweight Bayesian Neural Network via Activation-Space Uncertainty Modeling for Efficient Uncertainty Quantification - Weihao Zou, Zhiheng Wang, CECE

POSTER SESSION

AUTHORS & PRESENTATIONS

POSTER PRESENTATIONS: SUB BALLROOM

ODD NUMBERED POSTERS-SESSION A, EVEN NUMBERED POSTERS-SESSION B

WATER

- 113.** Comprehensive Water Quality Assessment of Produced Water During Treatment Process and Control Water for Beneficial Reuse - Satyajit Dey Sagar, Andres Sanchez Garcia, Balaji Rao, Danny Reible, CECE
- 114.** Coupled Cavity Dynamics and Granular Suspension in Drop Impacts on Water-Covered Granular Beds - Hossein Haghgou, Rishikesh, Hamed Sari-Sarraf, Hadis Matinpour, CECE
- 115.** Developing a New Fouling Index for Assessing Fouling Potential in Membrane-based Technologies for Water and Wastewater Treatment - Hossein Ebadi, CECE
- 116.** Do Fireworks Contribute to Perchlorate Occurrence in Drinking Water? - Jessica La Grenade, CECE
- 117.** Evaluating Temperature and Vacuum Effects on Distillate Quality from Produced Water in the Permian Basin - Raquel Torres, Shane Walker, CECE
- 118.** Investigation of flow pattern and mineral particle transport in membrane distillation: implications for fouling and scaling - Mehedi Hasan Sohan, Hadis Matinpour, CECE
- 119.** Modeling Homogeneous Isotropic Turbulence in a Multi-jet Chamber for Aerosol Applications - Sajib Das, Hadis Matinpour, CECE
- 120.** Scaling and Yielding of Dense Suspensions: Linking Monodisperse Systems to Natural Soils - Andre Lima, Hadis Matinpour, CECE
- 121.** Strategic Municipal Water Conservation with Data Analysis - Mahmuda Alim Ami, CECE
- 122.** Sub-sampling strategies for microplastics characterization in environmental matrices - Ujjwal Ghimire, CECE

WIND

- 123.** Probabilistic Uncertainty Propagation of Wind-Induced Extreme Responses in High-Rise Buildings - Weixiao Li, Xinzhong Chen, Zhiheng Wang, CECE

SUPPORTED BY

STEERING COMMITTEE 2026

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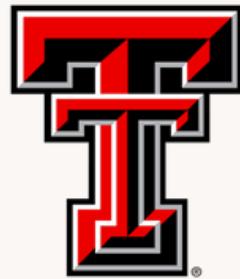
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SCAN TO CHECK OUT
THE FACULTY PRESENTER
ABSTRACTS



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