

## STUDENT POSTER SESSION SCHEDULE

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### Tuesday Graduate Student Poster Cluster

All conference attendees are encouraged to visit the graduate student poster cluster during Poster Session 4 on Tuesday afternoon from 3:15 p.m. to 5:45 p.m. This will give greater exposure to the students and provide them with enhanced opportunities to discuss their research interests and career goals with established engineering professionals. The student poster presenters are listed below in alphabetical order along with the corresponding poster location. Please refer to the accompanying map for the poster session layout.

## A

**Ayman AbdelRahman, University of South Carolina** **A1**  
Lamb Waves Energy & Power Transfer between Structure and Bonded Piezoelectric Wafer Active Sensors for Structural Health Monitoring

**Phillip Ahn, Northwestern University** **A2**  
High Contrast Evanescent Field Detection Using an Ultrasonic Heterodyne Near-Field Scanning Optical Microscopy

**Syedhamidreza Alaie, University of New Mexico** **A3**  
Phonon Manipulation with Nanoscale Metamaterials

**Ala' Al-Azizi, The Pennsylvania State University** **A4**  
Understanding and Improving Tribological Properties of Diamond-Like Carbon

**Aboelkasim Ali, Michigan Technological University** **A5**  
Micromechanical Modeling of Asphalt Pavement Fatigue Cracking Using eXtended Finite Element Method (XFEM)

**Bryan Allison, University of Florida** **A6**  
Mechanistic Modeling of Fatigue Life Prediction in High Precision Ball Bearings

**William Aquite, University of Wisconsin, Madison** **A7**  
Micropelletization Using Rayleigh Disturbances

**Luis G. Arboleda, Northwestern University** **A8**  
Condition Monitoring of Urban Infrastructure: Time Dependent Effects on Top-down Excavations

**Andrea Arena, Clarkson University** **A9**  
Efficient Reduced-Order Models for Nonlinear Aeroelastic Prediction in Long-Span Suspension Bridges

**David Argudo, University of Pennsylvania** **A10**  
The Effect of Solution Electrostatics on Plectonemic DNA

## STUDENT POSTER SESSION SCHEDULE

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**Ingrid Arocho, North Carolina State University** **A11**

The Impact of Construction Projects and Activities on Emissions

**Tugba Arsava, University of Massachusetts, Lowell** **A12**

Impact of Providing Real-Time Traffic Information on Emergency Evacuation Efficiency – An Empirical Study Based on Microscopic Traffic Simulation

**Mohammad-Amin Asareh, Missouri University of Science and Technology** **A13**

Coupled Aero-Elastic Seismic Simulations for Wind Turbines

**Reza Avazmohammadi, University of Pennsylvania** **A14**

Tangent Second-order Estimates for the Large-strain, Macroscopic Response of Particle-reinforced Elastomers

**Esam Aziz, Michigan State University** **A15**

Evaluating Fire Resistance of Steel Girders in Bridges

### B

**Pouria Bahmani, University of Alabama** **A16**

Performance-Based Seismic Retrofit Procedure for Soft-Story Woodframe Buildings

**Emmanuel Baisie, North Carolina Agricultural & Technical State University** **A17**

Framework for Conditioner Design Optimization

**Jean Batista Abreu, Johns Hopkins University** **A18**

Structural Response of Oil Storage Tanks Subjected to Elevated Temperatures

**Abhimanyu Bhat, University of Texas at Austin** **A19**

Electrolytic Infiltration of SLS Manufactured Parts

**Sanket Bhat, University of Wisconsin, Madison** **A20**

Base-stock Policy for a Manufacturing System with Periodic Demands

**Chandrakanth Bolisetti, University at Buffalo, The State University of New York** **A21**

Frequency and Time Domain Methods in Numerical Site Response Simulations

**Rajdeep Bondade, The University of Texas at Dallas** **A22**

Carbon Nanotube Supercapacitor Based On-Chip Auto-Reconfigurable Power Network for Autonomous Wireless Sensor Nodes

**Holly Bonstrom, University of Colorado** **A23**

Hazard Loss Estimation Using System Reliability

## STUDENT POSTER SESSION SCHEDULE

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### C

**Precious Cantu, University of Utah** **A24**

Diffraction-unlimited Nano-patterning via Optical Saturable Transitions

**Germán Capuano, Georgia Institute of Technology** **A25**

Dynamic Shape Functions for Multi-scale Wave Propagation

**Brent Chancellor, Lehigh University** **A26**

Effect of Ground Motion Selection on the Seismic Response of Self-Centering Concentrically-Braced Frames

**Santanu Chandra, University of Notre Dame** **A27**

Characterization of Native Valvular Hemodynamics and Side Specific Leaflet Stress in a Normal Aortic Valve – A Fluid Structure Interaction Analysis Approach

**Christopher Chaney, Washington State University** **A28**

High Performance Marine Craft with Aerodynamic Support

**Roland Chen, University of Michigan** **A29**

Tissue Cutting Mechanics for Better Needle Biopsy

**Tao Cheng, Georgia Institute of Technology** **A30**

Algorithms for Automated Operator Visibility and Proximity Hazard Evaluation

**Xu Cheng, Northwestern University** **A31**

Polymer Nanocomposites: Investigating the Modulus of the Interphase Region

**Gabriel Chow, University of Washington** **A32**

Mechanical Characterization of Porous Thin Films by Laser-induced Surface Acoustic Waves

**Sagar Chowdhury, University of Maryland** **A33**

Automated Indirect Manipulation of Cells Using Optical Tweezers

**David Christopher, Clemson University** **A34**

The Effect of Granular Activated Carbon Pretreatment on Membrane Filtration of Greywater

**Ding-Wen Chung, Purdue University** **A35**

Virtual Electrochemical Strain Microscopy of Polycrystalline LiCoO<sub>2</sub> Films

**Seydou Cisse, North Dakota State University** **A36**

Entrapped Cell Permeable Reactive Barrier to Enhance Acid Mine Drainage Remediation

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<b>Camila Coria, University of Nevada, Reno</b>	<b>A37</b>
Response of a Full-Scale Seismic Isolated Building During a Shaking Table Test at E-Defense	
<b>Mabel Cristina Cuellar Azcarate, University of South Carolina</b>	<b>A38</b>
Collaborative Research: Resilient and Sustainable Engineered Fiber-Reinforced Earthen Masonry for High Wind Regions	
<b>D</b>	
<b>Yildiz Dak Hazirbaba, Southern Illinois University, Carbondale</b>	<b>A39</b>
Maximum Direction to Geometric Mean Spectral Response Ratios Using Relevance Vector Machines	
<b>Charlotte de Vries, The Pennsylvania State University</b>	<b>A40</b>
Preventing Disproportionate Disaccommodation when Designing for Human Variability	
<b>Carolyn Desrochers, Villanova University</b>	<b>A41</b>
Repurposing Coal Combustion Fly Ash (CCFA) Waste Materials into Sustainable Construction Products	
<b>Anna Domask, The Pennsylvania State University</b>	<b>A42</b>
Novel Contact Materials and Innovative Switch Testing Device for RF Ohmic Contact Switches	
<b>Baiping Dong, Lehigh University</b>	<b>A43</b>
Real-time Hybrid Simulation and Performance Evaluation of a Structure with Large-scale Nonlinear Viscous Dampers	
<b>Li Dong, University of Alabama at Birmingham</b>	<b>A44</b>
Composite Structural Insulated Panels (CSIPs) for Hazards Resistant Structures	
<b>Ke Du, Stevens Institute of Technology</b>	<b>A45</b>
Nanopatterning of Disconnected Metal Nanostructures on PDMS Substrates by Using Free Standing Film as Stencil Lithography Mask	
<b>Li Du, The University of Akron</b>	<b>A46</b>
Parallel Sensing of Metallic Wear Debris in Lubricants using Undersampling Data Processing	
<b>Ping Du, Boston University</b>	<b>A47</b>
Viscoelastic Characterization and Modeling of PDMS Micropillars for Cellular Force Measurement Applications	
<b>E</b>	
<b>Hamid Ebrahimi, Northeastern University</b>	<b>A48</b>
Performance and Failure of Honeycomb Sandwich Panels Subjected to Complex Dynamic Loading	

## STUDENT POSTER SESSION SCHEDULE

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**Alain El Howayek, Purdue University**

**A49**

Characterization, Rheology and Microstructure of Laponite Suspensions

**Serkan Erbis, Northeastern University**

**A50**

Modeling Approaches for Sustainable Capacity Expansion Planning

**Sebastian Espinoza, Northeastern University**

**A51**

Recycling Infrastructure for Nano Enabled Lithium Ion Batteries

**Allen Eyler, Washington State University**

**A52**

Novel Wetting Behavior and Adhesion Properties of Graphitic Nanofiber-Modified Epoxy Resins with Fabric Reinforcements

### F

**Samira Faegh, Northeastern University**

**A53**

A Self-Sensing MicroCantilever Biosensor for Detection of Ultrasmall Adsorbed Biological Species

**Habib Fathi, Georgia Institute of Technology**

**A54**

A Videogrammetric Framework for Construction Site Surveying: Estimation, Documentation, and Archiving

**Pengzhan Fei, The University of Akron**

**A55**

Shape Memory Behavior of Side-Chain Crystalline Polymers

**Xiaofan Fei, Georgia Institute of Technology**

**A56**

Simulating the Detailed Design Process: Coordination and Communication Between Design Teams

**Erica Fischer, Purdue University**

**A57**

Experimental and Numerical Evaluation of Composite Floor Slabs under Fire

**Robert Fleming, University of Arkansas**

**A58**

Functional Surface Engineering for Surface Wetting Modifications

### G

**Sai Ganapuram, University of Akron**

**A59**

Cracking in Concrete Bridge Decks: Governing Factors and Quantification

**Arnab Ganguly, Purdue University**

**A60**

Accelerating Pharmaceutical Manufacturing through Physics-based Modeling

## STUDENT POSTER SESSION SCHEDULE

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<b>Andre Garcia, Northwestern University</b> Nature's Defensive Nanostructures: Deformation and Failure of Bioinspired Diatom Glass Spines	<b>A61</b>
<b>Jose Garcia Capella, University of Puerto Rico at Mayaguez</b> Structure and Properties of Clathrate Materials	<b>A62</b>
<b>Yunlong Geng, University of Nebraska, Lincoln</b> Non-conventional Ways to Obtain L10-Structure Hard Magnetic FeNi	<b>A63</b>
<b>Amy Getchell, University of New Hampshire</b> NHDOT Geotechnical Test Embankment on Soft Marine Clay	<b>A64</b>
<b>Amir Ghavibazoo, North Dakota State University</b> Fundamental Characterization of Mechanism of Interaction between Crumb Rubber and Asphalt	<b>A65</b>
<b>Masoud Gheisari, Georgia Institute of Technology</b> An Ambient Intelligent Environment for Accessing Building Information through a Mobile Augmented Reality Approach	<b>A66</b>
<b>Arthur Graziano, University of Florida</b> Surface Functionalization by Magnetic Field Assisted Finishing	<b>A67</b>
<b>Cameron Gross, Northwestern University</b> Enhanced Fire Resistance of Steels by Secondary Carbide Strengthening	<b>A68</b>
<b>Peiqiu Guan, University at Buffalo, The State University of New York</b> Hazard Prevention by Public and Private Partnership	<b>A69</b>
<b>Feng Guo, The Pennsylvania State University</b> Droplet Microfluidic Platform for High-throughput Bioassay	<b>A70</b>
<b>Akshay Gupte, Georgia Institute of Technology</b> Mixed Integer Bilinear Programming and Pooling Problem	<b>A71</b>
<b>H</b>	
<b>Babak Haghpanah Jahromi, Northeastern University</b> Intricate Mechanics of Hierarchical Honeycombs	<b>A72</b>
<b>Raha Hakimdavar, Columbia University</b> Predicting Hydrologic Behavior of an Extensive Green Roof Using a 1-D Infiltration Model	<b>A73</b>

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<b>Ali Hakimian, Northeastern University</b> Life Cycle Assessment of CNT Lithium-ion Batteries and PSL Biosensors	<b>A74</b>
<b>Tamer Hamouda, North Carolina State University</b> Sensing Characteristic of Embedded POF into Composite structure for Structural Health Monitoring Systems	<b>A75</b>
<b>Yu Han, The University of Akron</b> A Novel Biosensor chip for High Throughput Detection of Macromolecular Biomarkers	<b>A76</b>
<b>Jared Hann, University of Florida</b> Magnetic Field-assisted Nanomachining of Ultraprecision Surfaces	<b>A77</b>
<b>Anahita Hassanzadeh, Lehigh University</b> Two Stage Stochastic Optimization with Mixed Integer Recourse	<b>A78</b>
<b>Celine Hayot, University of Nebraska, Lincoln</b> Effect of Insect Dimorphism on the Mechanical Properties of Rubber-like Cuticle Determined by Nanoindentation	<b>A79</b>
<b>Alexander Haywood, Auburn University</b> Adapting MEMS Processing for Cellulose Nanocrystal Films	<b>A80</b>
<b>Fang He, University of Florida</b> Integrated Management of Road and Power Networks Coupled by Electric and Plug-in Hybrid Electric Vehicles	<b>A81</b>
<b>Zahra Heidary, University of Illinois at Chicago</b> Multiphysics Modeling for Quantitative Acoustic Emission Testing of Civil Structures	<b>A82</b>
<b>Pete Hondred, Iowa State University</b> Thermal-Mechanical Properties of Tung-Oil Based Thermosetting Bio-Polymers	<b>A83</b>
<b>Yifeng Hong, Georgia Institute of Technology</b> Fabrication of Interconnected Porous Elastomers by A Microsphere-Templating Approach	<b>A84</b>
<b>Amy Hopkins, California State University, Sacramento</b> Seismically Enhanced Non-Structural Partition Walls for Unibody Residential Construction	<b>A85</b>
<b>Rachel Howser, University of Houston</b> Development of Carbon Nanofiber Aggregate for Damage Detection in Concrete Structures	<b>A86</b>
<b>Jia Hu, University of Florida</b> Decision-making Framework for Selection of Daylighting Systems	<b>A87</b>

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**Arthur Huang, University of Minnesota**
**A88**

Accessibility, Network Structure, and Shopping Destination Choice: A Microscopic Analysis of GPS Travel Data in the Twin Cities

**Ching Hung, Columbia University**
**A89**

Implementation of an Enhanced Elastoplastic Bounding Surface Model in PLAXIS and its Verification

### J

**Rishee Jain, Columbia University**
**A90**

An Algorithmic Approach to Detect the Role of Social Influence on Energy Savings of Building Occupants Exposed to Eco-feedback

**Angelina Jay, Northeastern University**
**A91**

Structural Performance of Tapered Spirally Welded Wind Turbine Towers

**Elaina Jennings, University of Alabama**
**A92**

Shape Memory Alloy Dampers for Response Modification of Light-frame Wood Buildings

**Namin Jeong, Georgia Institute of Technology**
**A93**

A Method for Reverse Engineering of Material microstructure for Heterogeneous CAD

**Dan Jia, University of North Carolina at Charlotte**
**A94**

Structural Analysis on Magnetic Gear of Ocean Energy Power Take-Off System

**Hady Joumaa, University of Illinois at Urbana-Champaign**
**A95**

Elastodynamics and Wave Propagation in Fractal Media

### K

**Harjyoti Kalita, North Dakota State University**
**A96**

Nanoarchitectonic Designs for Polymer Application to Enhance Nanoparticle Dispersion in Aqueous Media

**Rahul Kapadia, University of California, San Diego**
**A97**

A Comparison of the Thermal Conductivity Values of Carbon Nanotube-polymer Composites Probed by the (1) Steady State, and the (2) 3 w Method

**Monica Kapoor, Northwestern University**
**A98**

Design and Development of BCC Cu Precipitation Strengthened Steels - BCC Cu Strengthens the Steel and Enhances Ductility

**Nishant Karasala Kotaiah, University of South Carolina**
**A99**

Parameter Identification of Polythene Glycol Diacrylate



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<b>Payman Karvanirabori, Rensselaer Polytechnic Institute</b> Thermal-Mechanical Modeling and Simulation of III-Nitride Semiconductors	<b>A100</b>
<b>Elnaz Kermani, The Pennsylvania State University</b> Energy Dissipation during Collapse of Granular Columns	<b>A101</b>
<b>Kristi Kern, Northwestern University</b> Determining the Initiation of Cracking Using Real Time Automated Monitoring of an Urban Excavation	<b>A102</b>
<b>Shahrzad Khansari, University of Illinois at Chicago</b> Green Materials: Strength of Soy Protein Nanofiber Mats	<b>A103</b>
<b>Maryam Khorshidi, Arizona State University</b> Holistic Ideation Testbed for Creative Design	<b>A104</b>
<b>Jeongmin Kim, University of California, Berkeley</b> Development of Maskless Plasmonic Nanolithography Tool	<b>A105</b>
<b>Jihoon Kim, Wayne State University</b> Development of a Framework for Supporting Technology Planning in Product Lifecycle: The Perspective of Actor Network Theory	<b>A106</b>
<b>Steven Klankowski, Kansas State University</b> High Performance Lithium Ion Battery Anode Based On Core-Shell Heterostructure of Silicon Coated Vertically Aligned Carbon Nano Fibers	<b>A107</b>
<b>Philip Kwong, University of Southern California</b> Patterning Porous Materials with Functional Polymer Coatings	<b>A108</b>
<b>L</b>	
<b>Samrakshak Lamichhane, Howard University</b> Mitigation Provisions of Bridges Under Tsunami Effects	<b>A109</b>
<b>Seung-Woo Lee, University of Nebraska, Lincoln</b> Multianalyte Electrochemical Biosensor on a Single Monolith Electrode	<b>A110</b>
<b>Ming Li, University of Connecticut, Storrs</b> Kinetics of Lipid Nanodiscs – Potential Targeting Carriers for Therapeutics: Disk Growth and Lipid Exchange	<b>A111</b>
<b>Sha Li, University of Michigan, Ann Arbor</b> Assembly System Design Considering Product Variety with Application to Automotive Battery Packs	<b>A112</b>

## STUDENT POSTER SESSION SCHEDULE

<b>Engui Liu, Polytechnic Institute of New York University</b> Sensing High pH and ASR (Alkali-Silica- Reaction) Detection in Cementitious Materials	<b>A113</b>
<b>Kaibo Liu, Georgia Institute of Technology</b> Health Index Development Based on Sensory Data Fusion for Degradation Modeling and Prognostic Analysis	<b>A114</b>
<b>Xuelian Liu, Rensselaer Polytechnic Institute</b> A Beyond-CMOS Approach for Addressing Single Thread Performance for Amdahl's Law Effects	<b>A115</b>
<b>Ying Liu, University of Connecticut</b> Self-Assembled Lipid-Based Nanodiscs for Hydrophobic Drug Delivery	<b>A116</b>
<b>Gilson Lomboy, Iowa State University</b> Particle Interaction and Rheological Behavior of Cement-Based Materials	<b>A117</b>
<b>Luisa Lopez, University of Wisconsin, Madison</b> Fiber Motion during Injection Molding	<b>A118</b>
<b>Cheng Lu, University of California, Berkeley</b> Normalized Cut: Approximation to Cheeger Constant and its Practical Performance in Image Segmentation	<b>A119</b>
<b>Michelle Lueck, Colorado State University</b> Barriers to Hurricane Evacuation: Development of a Scale	<b>A120</b>
<b>Bismarck Luna, University at Buffalo, The State University of New York</b> Seismic Response of Low Aspect Ratio Reinforced Concrete Shear Walls	<b>A121</b>
<b>Albert Luu, University of California, Irvine</b> Seismic Soil Pressures Measured during a Large Scale Soil-Structure Interaction Experiment on Underground Structures at E-Defense	<b>A122</b>
<b>Joseph Lydon, California Institute of Technology</b> Nonlinear Dynamics of 1-D Granular Crystals	<b>A123</b>
<b>M</b>	
<b>Teng Ma, Arizona State University</b> Topographic Evolution of Silicon Anode on Soft Substrate for Lithium Ion Battery	<b>A124</b>
<b>Prakash Manandhar, University of Massachusetts, Dartmouth</b> Hydrogel Sensor Array for Multiple Degree of Freedom Proprioception in Soft Structured Robots	<b>A125</b>

## STUDENT POSTER SESSION SCHEDULE

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<b>James Manimala, Purdue University</b> Dynamic Load Reduction using Locally Resonant Periodic Structures	<b>A126</b>
<b>Hamed Maraghechi, The Pennsylvania State University</b> Assessment of the Pozzolan Behavior of Alkali Activated Soda-lime Glass Powder	<b>A127</b>
<b>Armin Masroor, University at Buffalo, The State University of New York</b> Impact Model Considering Surface Compliance For Simulation of Base Isolated Buildings Impacting Moat Wall	<b>A128</b>
<b>Toni-Gaye McCulloch, University of Central Florida</b> Unlikely Partners? The Fusion of Biology, Engineering, and Architecture to Develop Revolutionary Materials for Sustainable Construction	<b>A129</b>
<b>Hector Medina, Virginia Commonwealth University</b> Fracture of Random Rough Surfaces of Poly Methyl Methacrylate: An Experimental and FEM Study	<b>A130</b>
<b>Farid Moghim, Northeastern University</b> Computer-generated Random Trajectories of Wind-borne Debris in Turbulent Wind for Estimating Debris Impact against Tall Buildings	<b>A131</b>
<b>Irshad Mohammad, University of Texas at Arlington</b> Passive Wireless Sensors for Crack Detection and Shear/compression Sensing	<b>A132</b>
<b>Chike Monwuba, Purdue University</b> Geoenvironmental Influences on Raman Spectroscopic Monitoring of Chlorinated Solvents	<b>A133</b>
<b>David Morrison, University of Illinois at Urbana-Champaign</b> A Wide Branching Algorithm for Optimization Problems	<b>A134</b>
<b>Ali Mostafavi, Purdue University</b> Simulation and Visualization of Financing Policies in Infrastructure Systems	<b>A135</b>
<b>Paul Mountford, University of Colorado at Boulder</b> Microbubbles: a platform for studying the mechanics of biological monolayers	<b>A136</b>
<b>Adam Mueller, Western Michigan University</b> Geographically Distributed Hybrid Testing in Earthquake Engineering	<b>A137</b>
<b>Madhuri Murali, Texas A&amp;M University</b> Development of experimental methods for modeling of offshore wind turbines	<b>A138</b>

## STUDENT POSTER SESSION SCHEDULE

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### N

**Roshanak Nateghi, Johns Hopkins University** **A139**

Modeling Atlantic Hurricane Activity and Reliability of Power Distribution Systems Impacted by Hurricanes in the U.S.

**Man Kwan (Trista) Ng, Northwestern University** **A140**

Micro-rolling for Surface Texturing at High Rate

**Chilan Ngo, University of California, Los Angeles** **A141**

Effect of Growth Parameters on the Self-Catalyzed Growth of InP1-xSbx "nanocream cones"

**Esmeralda Nino, University Of Puerto Rico at Mayaguez** **A142**

Process Discovery through sensitivity analysis in multiple criteria optimization: preliminary results

### O

**Daniel Odoh, Howard University** **A143**

Full Field Measurements of the Dynamic Response of AA 6061 T6 Aluminum Alloy Under High Strain Rate Loads

**Andrew O'Donnell, University of Notre Dame** **A144**

Calibration of a Reusable Nonlinear Frame Structure for an Experimental Ground Motion Scaling Study

**Jong G. Ok, University of Michigan** **A145**

Continuous and Scalable Micronano-manufacturing/patterning for Optoelectronic and Energy Conversion Applications

**David Olawale, Florida State University** **A146**

Triboluminescent Multifunctional Cementitious Composites with In-situ and Real-time Damage Sensing Capability

**Thomas Omwando, University of Wisconsin, Milwaukee** **A147**

A Reinforcement Learning Based Decision Support System for Optimizing Maintenance of Wind Energy Conversion Systems

**Alexander Orsi, Northeastern University** **A148**

Anterior Cruciate Ligament Tear Initiation Locus: A 3D Finite Element Analysis

**James Otoo, Missouri University of Science and Technology** **A149**

Differences between Traces, Natural Facets, and Induced Facets

## STUDENT POSTER SESSION SCHEDULE

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### P

**Nicholas Paine, University of Texas at Austin** **A150**  
 UT-SEA: High Power Electric Actuation in a Compact Form Factor

**Smruti Panigrahi, Michigan State University** **A151**  
 Bifurcations of Equilibria in Snap-Through Oscillators

**David Pelot, University of Illinois at Chicago** **A152**  
 Creating Self Healing Materials through Core-shell Electrospinning

**Jonathan Pham, University of Massachusetts, Amherst** **A153**  
 Macroscopic Nanoparticle Ribbons, Helices and Fabrics

**David Pisani, University of California, Los Angeles** **A154**  
 Design, Development and Manufacturing of Piezoelectric Sensor/Actuator Rosettes

**Elisabetta Pistone, University of Pittsburgh** **A155**  
 Hazard Mitigation of Water Mains by means of Immersed Active Inspection Systems

**Matthew Plumlee, Georgia Institute of Technology** **A156**  
 Cohesive Control for Variation Reduction in Scale Up of Advanced Material Manufacturing Processes

**Nimish Pujara, Cornell University** **A157**  
 Measurements of Run-up and Bed Shear Stress of Long Waves

### R

**Stefania Radopoulou, Georgia Institute of Technology** **A158**  
 Visual Pattern Recognition Models of Infrastructure Elements

**Devarajan Ramanujan, Purdue University** **A159**  
 Modeling Environmental Sustainability for Product Lifecycle Management

**Pradeep Ramiah Rajasekaran, Southern Illinois University, Carbondale** **A160**  
 Nano-Editor: A Dynamic Nano Plotting and Erasing system

**Prahalada Rao, Oklahoma State University** **A161**  
 Real-time Monitoring of Nano-scale Surface Morphology in Ultra-Precision Manufacturing Processes

**Amin Rasekh, Texas A&M University** **A162**  
 Integrated Contamination Emergency Management System for Drinking Water Networks Security

## STUDENT POSTER SESSION SCHEDULE

**Xiang Ren, Drexel University** **A163**

Solid Freeform Fabrication of a Conceptual Artificial Photosynthesis Device

**Sara Rimer, University of Michigan** **A164**

An Agent-Based Evacuation Model with Hazardous Contaminant

**Daniel Robertson, Brigham Young University** **A165**

A Small Punch Test to Characterize Anisotropic Soft Tissue Properties

**Ruth Roman, West Virginia University** **A166**

Fatigue Strength of Composite Materials Considering Hygrothermal Degradation

**Celeste Roschuni, University of California, Berkeley** **A167**

The DesignExchange

**Yeontack Ryu, Texas A&M University** **A168**

Correlations between HighElectrical Conductivity and Debundling of Carbon Nanotubes and P-doping Effects from a Chlorosulfonic Acid

## S

**Sourabh Saha, Massachusetts Institute of Technology** **A169**

Processes, Techniques, and Tools for Scalable and Affordable Nanomanufacturing: Perspectives from Dip Pen Nanolithography, Wrinkling, and DNA Imprinting

**Samir Sahyoun, University of Tennessee** **A170**

Optimal Model Reduction for Aerodynamics Boundary Feedback Control

**Sonia Samir, University of Texas at Arlington** **A171**

Evaluation of Methane Generation Potential of Municipal Solid Waste (MSW) in a Closed Landfill

**Nicholas Schneider, University of Pennsylvania** **A172**

Dynamic in situ Electron Microscopy of Liquid Systems

**Doug Schweizer, North Carolina State University** **A173**

Large-scale Experiments to Validate an Innovative Seismic Performance Enhancement Technique for Steel Building Beam-column Connections

**Dong-Woo Seo, Northeastern University** **A174**

Estimating Life-cycle Monetary Losses of Slender Bridges due to Wind Hazards

**S.M. Sadegh Shams, University of Wisconsin, Milwaukee** **A175**

Progressive Failure and Repair of Scratch Damage of Laminated Carbon Fiber/Epoxy Composites

## STUDENT POSTER SESSION SCHEDULE

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**Bai Shao, University of Nebraska, Lincoln**

**A176**

Study of Titanium Alloy micro-Machining Using micro-EDM

**Pankaj Sharma, Pankaj Kumar Sharma**

**A177**

Nanoscale Studies of Ferroelectric PVDF-TrFE Copolymer using Piezoresponse Force Microscopy

**Tripp Shealy, Clemson University**

**A178**

Resilience Education through Building Codes: Current Status and Best Practices

**Bradley Sherman, Northwestern University**

**A179**

Laser Generation of Finite Amplitude Surface Acoustic Waves Using the Phase Velocity Scanning Method

**Ping-Chang Shih, Georgia Institute of Technology**

**A180**

Computer Vision for Ocean Sciences: 4-D Variational Stereo Reconstruction of Ocean Waves

**Jessica Snyder, Drexel University**

**A181**

Physiologically Relevant In Vitro Microfluidic Liver by Heterogenous Cell Printing

**Hongyun So, University of California, Berkeley**

**A182**

Nanowire-Assisted Micro Loop Heat Pipe with Porous Silicon Wicks

**Ruiqiang Song, Michigan Technological University**

**A183**

Assessment of Steel Structures Subjected to Earthquake Mainshock-aftershock Sequences

**John Steuben, Colorado School of Mines**

**A184**

NURBs-Based Metamodels: Applications in Robotics and Automation

**Stephanie Stockar, The Ohio State University**

**A185**

A System Dynamics Modeling Methodology to Predict Transient Phenomena in Compressible Fluid Flow Systems

**Scott Swensen, Stanford University**

**A186**

Seismically Isolated Unibody Light-Frame Residential Structures

## T

**Jacopo Tani, Rensselaer Polytechnic Institute**

**A187**

High-rate Estimation and Identification of Adaptive Optics Systems using Slow-rate Image Sensors

**Aaron Thornton, Missouri University of Science and Technology**

**A188**

Freeze-form Extrusion Fabrication of Functionally Gradient Material Parts

## STUDENT POSTER SESSION SCHEDULE

**Ye Tian, University of Massachusetts, Lowell** **A189**

Finite Element Analysis of Fiber-optic Photoacoustic Generator using Nanocomposite as Absorption Material

**Anton Tokranov, Brown University** **A190**

Study of SEI Formation Using In Situ Stress Measurements

**Alison Trachet, University of Florida** **A191**

Processing-Structure-Property Relationships in Ultrahigh Strength Silicon Carbides

**Patrick Trasborg, Lehigh University** **A192**

Development of a Blast and Ballistic Resistant Precast Concrete Armored Wall System

**Luis Traverso, Purdue University** **A193**

Scalable Nanomanufacturing Machine Based on Parallel Optical Antenna Array

**Yu-Cheng Tsai, Princeton University** **A194**

Near-field Multiphoton Absorption Polymerization Using Optically Trapped Microspheres

**Zeynep Tuna, University of California, Los Angeles** **A195**

2010 E-Defense Four-Story Reinforced Concrete Building - Comparative Study of Experimental and Analytical Results

### V

**Vahid Valamanesh, Northeastern University** **A196**

Aerodynamic Damping and Seismic Response of Wind Turbine Structures

### W

**Anthony Waldenmaier, North Dakota State University** **A197**

Sustainable Engineering and Material Testing Methods for Reclaimed Asphalt Pavement

**Bu Wang, Lehigh University** **A198**

The Role of Surface Roughness on Immunoaffinity Cell Capture in Microfluidic Devices

**Ranran Wang, Yale University** **A199**

Understand, Simulate, and Optimize the Water-Energy Nexus from a System Dynamics Perspective: Challenges and Opportunities

**Siwei Wang, University of South Carolina** **A200**

Novel Chemically Stable Proton Conducting Ceramics with Improved Proton Conductivity



## STUDENT POSTER SESSION SCHEDULE

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**Wei Wang, Michigan State University** **A201**

Reinforcement of Open-cell Aluminum Foam for Enhanced Energy Absorption Capacity

**Ying Wang, University of Connecticut** **A202**

Signal-Amplifying Fluorescent Nanofibers for Naked Eyes-Based Ultrasensitive Detection of Explosives

**Zhichao Wang, University of Maryland, College Park** **A203**

Strategic Product Design for Uncertain, Converging and Service Oriented Markets

**Xiaolei Wen, Purdue University** **A204**

Interferometric-Spatial-Phase-Imaging (ISPI) for Parallel Optical Nanolithography

**Scott Wilcox, University of Washington** **A205**

Velocity Control of a Piezo-Actuated Nanostepper

**Ai-Lun Wu, University of California, Irvine** **A206**

A Damage Detection Technique for A Reinforced Concrete Frame

**Chenglin Wu, Missouri University of Science and Technology** **A207**

Engineering Application of Polymer Cross-Linked Aerogel

**Teng Wu, University of Notre Dame** **A208**

Modeling Unsteady Nonlinear Bridge Aerodynamics and Aeroelasticity

## X

**Jianyong Xie, Georgia Institute of Technology** **A209**

Multi-Physics Numerical Modeling and Characterization of 3D Integrated Electronic Systems

**Changxue Xu, Clemson University** **A210**

Scaffold-free Fabrication of Three-dimensional Cellular Tubes

**Siyang Xu, Carnegie Mellon University** **A211**

Magnetic Nanoparticle-based Solder Composites for Electronic Packaging Applications

## Y

**Hooman Yadollahi Farsani, Clarkson University** **A212**

Aerodynamics of Bluff Bodies with Application to Fluid-Structure Interaction of Civil Structures

**Shifei Yang, University of Wisconsin, Madison** **A213**

A Lifting Algorithm for Output-only Continuous Scan Laser Doppler Vibrometry

## STUDENT POSTER SESSION SCHEDULE

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**Yu Yang, Texas A&M University**

Laser Induced Nano Droplet Ejection With Optical Devices

**A214**

**Hui Yao, Michigan Technological University and Central South University**

Performance of Asphalt Binder Blended with Non-Modified and Polymer-Modified Nanoclay

**A215**

**Jun Yin, Binghamton University, State University of New York**

Nanoparticle Assemblies on Flexible Devices for Cleaner Energy and Cleaner Environment

**A216**

**Kai Yu, University of Colorado at Boulder**

Mechanisms of multi-shape memory effects and associated energy release in shape memory polymers

**A217**

**Xiaokong Yu, Worcester Polytechnic Institute**

Microscopic morphology and mechanical properties of bitumen

**A218**

## Z

**Nan Zhang, University of Minnesota**

A Modeling Analysis of Global Flows in the solvent of a Convective Assembly system

**A219**

**Qing Zhang, University of Delaware**

Energy Retention and Self-discharge Mechanisms of Carbon-based Electrochemical Capacitors

**A220**

**Jiahua Zhu, Lamar University**

Soft Conductive Nanocomposites with Negative Permittivity

**A221**

**Xiaotian Zou, University of Massachusetts, Lowell**

Cutting Temperature in Rotary Ultrasonic Machining of Titanium: Experimental Study using Novel Fabry-Perot Fiber Optic Sensors

**A222**