<table>
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<tr>
<th>Session</th>
<th>Symposium ID</th>
<th>Location</th>
<th>Session Chair (name and email)</th>
<th>Time</th>
<th>Abstract ID</th>
<th>Track</th>
<th>Title</th>
<th>Symposium</th>
<th>Submitter Name</th>
<th>Author Name</th>
<th>Co-Authors</th>
</tr>
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<tbody>
<tr>
<td>W1</td>
<td>A1</td>
<td>Fowler Hall</td>
<td>Ostoj-Charyszak, Martin (<a href="mailto:martinos@illinois.edu">martinos@illinois.edu</a>)</td>
<td>9:20am</td>
<td>1095</td>
<td>Honor Symposia</td>
<td>Prager Medal Symposium for Robert M. McMeeking</td>
<td>KEYNOTE: Following Bob McMeeking onto the ice</td>
<td>Rice, James</td>
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<td>Fowler Hall</td>
<td>Ostoj-Charyszak, Martin (<a href="mailto:martinos@illinois.edu">martinos@illinois.edu</a>)</td>
<td>10:00 AM</td>
<td>909</td>
<td>Honor Symposia</td>
<td>Prager Medal Symposium for Robert M. McMeeking</td>
<td>KEYNOTE: Multi-Scale Mechanics of Graphene</td>
<td>Parks, David</td>
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<td>W1</td>
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<td>Fowler Hall</td>
<td>Lin, Hao (<a href="mailto:hlin@jove.rutgers.edu">hlin@jove.rutgers.edu</a>)</td>
<td>9:20am</td>
<td>687</td>
<td>Mechanics of Fluids and Thermal Systems</td>
<td>Mechanics of Vesicles and Cells</td>
<td>Tension induced growth in cells</td>
<td>Purshottam, Prashant</td>
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<td>9:40am</td>
<td>643</td>
<td>Mechanics of Fluids and Thermal Systems</td>
<td>Mechanics of Vesicles and Cells</td>
<td>Biological cells adhesion mediated by receptors-ligands binding</td>
<td>Nadler, Ben</td>
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<td>Lin, Hao (<a href="mailto:hlin@jove.rutgers.edu">hlin@jove.rutgers.edu</a>)</td>
<td>10:00am</td>
<td>658</td>
<td>Mechanics of Fluids and Thermal Systems</td>
<td>Mechanics of Vesicles and Cells</td>
<td>Cell Upset of One-Dimensional Nanomaterials</td>
<td>Yi, Xin</td>
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<td>Mechanics of Fluids and Thermal Systems</td>
<td>Mechanics of Vesicles and Cells</td>
<td>Mechanics and Physics of HIV virus interaction with cell membranes</td>
<td>Agravat, Himan</td>
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<td>Zhang, Sulin (<a href="mailto:zsu10@psu.edu">zsu10@psu.edu</a>)</td>
<td>9:20 AM</td>
<td>1186</td>
<td>Biological and Biomolecular Materials</td>
<td>Molecular Origins of the Loss of Deformability in Plasmodium falciparum Infected Erythrocytes: A Coarse-Grained Modeling</td>
<td>Zhang, YAO</td>
<td>Zhang, YAO</td>
<td>Huang, Changjin; Gotkarah, Mahdi; Zhang, Sulin</td>
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<td>W1</td>
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<td>Zhang, Sulin (<a href="mailto:zsu10@psu.edu">zsu10@psu.edu</a>)</td>
<td>9:40 AM</td>
<td>691</td>
<td>Biological and Biomolecular Materials</td>
<td>Mechanobiology of cells and tissues: emergent behavior in adaptation, growth and remodeling</td>
<td>Estrada, Ian</td>
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<td>Biological and Biomolecular Materials</td>
<td>In package inactivation of Bacillus atrophaeus spores using high voltage atmospheric cold plasma</td>
<td>Patil, Sonal</td>
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<td>Morese, Tamara; Mita, NT; Cullen, PC; Miosin, JP; Keener, VP</td>
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<td>876</td>
<td>Biological and Biomolecular Materials</td>
<td>TEM Observations of Cytokeletal Evolution in CNS Axons</td>
<td>Fournier, Adam</td>
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<td>Hogen, James; Rapharandar, Labcan; Shrachi, Shiva;</td>
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<td>Andrade, Jose (<a href="mailto:jandrade@caltech.edu">jandrade@caltech.edu</a>)</td>
<td>9:20 AM</td>
<td>657</td>
<td>Mechanism of Solids and Structures</td>
<td>KEYNOTE: Improved conditioning and accuracy of FE/GN/STEM for three-dimensional fracture</td>
<td>Durante, Armando</td>
<td>Gupta, Varun</td>
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<td>10:00 AM</td>
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<td>Mechanism of Solids and Structures</td>
<td>Computational Fracture Mechanics</td>
<td>A generalized finite element method with global-local enrichments for the 3-D simulation of propagating cracks</td>
<td>Kim, Jongheon</td>
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<td>Mechanism of Solids and Structures</td>
<td>Computational Fracture Mechanics</td>
<td>Hydro-mechanical modeling of hydraulic fracturing in poroelastic media using the extended finite element method</td>
<td>Momeni, Nojoum</td>
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<td>A. Bobet (<a href="mailto:bobet@purdue.edu">bobet@purdue.edu</a>), M. Santagata (<a href="mailto:mks@purdue.edu">mks@purdue.edu</a>)</td>
<td>9:20 am</td>
<td>1063</td>
<td>Mechanism of Solids and Structures</td>
<td>Predicting possible leakage due to nanostructure strain localization in granular materials with a coupled hydro-mechanical model</td>
<td>Sun, WaiChing</td>
<td>Liu, Yang</td>
<td>Sun, WaiChing; Yuan, Zifeng; Fish, Jacob</td>
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<td>A. Bobet (<a href="mailto:bobet@purdue.edu">bobet@purdue.edu</a>), M. Santagata (<a href="mailto:mks@purdue.edu">mks@purdue.edu</a>)</td>
<td>9:40 am</td>
<td>1296</td>
<td>Mechanism of Solids and Structures</td>
<td>Fully-coupled hydro-mechanical analysis of water saturated porous geomeaterials under complex deformation</td>
<td>Chen, Qunshi</td>
<td>Chen, Qunshi</td>
<td>Sun, WaiChing</td>
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<td>A. Bobet (<a href="mailto:bobet@purdue.edu">bobet@purdue.edu</a>), M. Santagata (<a href="mailto:mks@purdue.edu">mks@purdue.edu</a>)</td>
<td>10:00am</td>
<td>611</td>
<td>Mechanism of Solids and Structures</td>
<td>Coupled Multiphysics Modeling of Gas Hydrate Bearing Sediments</td>
<td>Sanchez, Marcelo</td>
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<td>W1</td>
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<td>Fowler Hall</td>
<td>Mohammad Naraghi (<a href="mailto:naraghi@aero.tamu.edu">naraghi@aero.tamu.edu</a>)</td>
<td>9:20 AM</td>
<td>572</td>
<td>Mechanism of Nanomaterials</td>
<td>Effects Of Solutes On Migration of Incoherent Twin Boundary in FCC Metals</td>
<td>Mendeleev, Mikhail</td>
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<td>Mechanism of Nanomaterials</td>
<td>Deformation mechanisms in bulk nanostructured metals and strategies to improve their ductility</td>
<td>Lavernia, Enrique</td>
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<td>Mechanism of Nanomaterials</td>
<td>Objectivity in Molecular Dynamics</td>
<td>Yang, Zidong</td>
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<td>Lee, James; Eckardanian, Azim</td>
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<td>Mechanism of Nanomaterials</td>
<td>Molecular Dynamics Simulation of Multi-physics</td>
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<td>Jie Song (<a href="mailto:jsong@zu.edu.cn">jsong@zu.edu.cn</a>)</td>
<td>9:20 AM</td>
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<td>Mechanism of Solids and Structures</td>
<td>Mechanism of Thin Films and Multilayer Materials</td>
<td>Effects of Interface Roughness on the Cohesive Interactions between Chains</td>
<td>Zhang, Chen</td>
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<td>10:00 AM</td>
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<td>Mechanism of Solids and Structures</td>
<td>Mechanics of Thin Films and Multilayer Materials</td>
<td>Dependence of Polymer Thin Film Adhesion Energy on Cohesive Interactions between Chains</td>
<td>Xia, Wenjie</td>
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<td>Hsu, David; Ketjen, Sinar</td>
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<td>Michael O Sangid (<a href="mailto:msangid@purdue.edu">msangid@purdue.edu</a>)</td>
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<td>993</td>
<td>Mechanism of Solids and Structures</td>
<td>Microscale and Microstructural Effects on Mechanical Behavior</td>
<td>Modeling Structure Property Relationships Using Finite Elements and High Energy X-rays</td>
<td>Miller, Matthew</td>
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<td>Osorio, Chukwuedu; Lee, I-Fang; Phan, Thienn; Xu, Ruiping; Tischler, Jon; Liu, Wenjian; Kassner, Michael</td>
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<td>Mechanism of Solids and Structures</td>
<td>Local elastic strain and strain tensor measurements of deformed metals using focused, sub-micrometer rays</td>
<td>Levine, Liye</td>
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<td>Michael O Sangid (<a href="mailto:msangid@purdue.edu">msangid@purdue.edu</a>)</td>
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<td>Mechanism of Solids and Structures</td>
<td>Microscale and Microstructural Effects on Mechanical Behavior</td>
<td>3D Bulk Grain Evolution in Polycrystalline Cu: Comparison Between hdem Observation and Fft</td>
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<td>Matt Hudspeth (<a href="mailto:mhudspet@purdue.edu">mhudspet@purdue.edu</a>)</td>
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<td>Mechanism of Solids and Structures</td>
<td>Microscale and Microstructural Effects on Mechanical Behavior</td>
<td>Stability of the two-phase microstructure of shocked zirconium</td>
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<td>Dynamics and Control, Experimental and Computational Nonlinear Dynamics</td>
<td>MONOLITHIC MULTI-TIME-STEP COUPLING METHOD FOR TRANSIENT PROBLEMS IN SOLID MECHANICS</td>
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<td>Dynamics and Control, Experimental and Computational Nonlinear Dynamics</td>
<td>A tunable energy filter by laterally precompression in elastic granular chains</td>
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<td>Dynamics and Control, Experimental and Computational Nonlinear Dynamics</td>
<td>Time-delayed active vibration control for turning and milling processes</td>
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<td>11:00 AM</td>
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<td>Honor Symposium, Prager Medal Symposium for Robert M. McMeeking</td>
<td>Scholars of the dielectric breakdown strength from nano- to millimeter scale</td>
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<td>Honor Symposium, Prager Medal Symposium for Robert M. McMeeking</td>
<td>Harnessing Large Deformation and Instabilities of Soft Dielectrics: Theory, Experiment and Application</td>
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<td>Honor Symposium, Prager Medal Symposium for Robert M. McMeeking</td>
<td>Failure of Two porous sandstones under true triaxial conditions</td>
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<td>12:00 PM</td>
<td>A1</td>
<td>Fowler Hall</td>
<td>Honor Symposium, Prager Medal Symposium for Robert M. McMeeking</td>
<td>Cyclic performance of silicon as anode material in lithium ion batteries</td>
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<td>11:40 AM</td>
<td>B2</td>
<td>218 A</td>
<td>Mechanics of Fluids and Thermal Systems, Mechanics of Vesicles and Cells</td>
<td>Coupling the vesicle dynamics to a transmembrane protein</td>
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<td>12:00 PM</td>
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<td>Mechanics of Fluids and Thermal Systems, Mechanics of Vesicles and Cells</td>
<td>Relaxation of deformed drops, vesicles, and cells</td>
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<td>C2</td>
<td>218 D</td>
<td>Biological and Biomimetic Materials, Mechanobiology of cells and tissues</td>
<td>3D Traction Forces of Schwann Cells on Compliant Substrates</td>
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<td>Biological and Biomimetic Materials, Mechanobiology of cells and tissues</td>
<td>Stress-fiber mechanics and cell mechano-sensitivity</td>
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<td>Biological and Biomimetic Materials, Mechanobiology of cells and tissues</td>
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<td>Biological and Biomimetic Materials, Mechanobiology of cells and tissues</td>
<td>Long range cell-cell interactions through substrate strain fields</td>
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<td>11:00 AM</td>
<td>C5</td>
<td>218 C</td>
<td>Biological and Biomimetic Materials, Nanomaterials for Biomedical Applications</td>
<td>KEYNOTE: Fibrous Scaffolds for Engineering Tissues Using Simulations to Find the</td>
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<td>Biological and Biomimetic Materials, Nanomaterials for Biomedical Applications</td>
<td>Enhanced Human Bone Marrow Mesenchymal Stem Cell Function on 3D Printed Nano Bone Scaffolds with Microstructure Network</td>
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<td>Biological and Biomimetic Materials, Nanomaterials for Biomedical Applications</td>
<td>Suppression of Osteoarthritis via Molecular Engineering of an Aggregan Mimetic</td>
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<td>Biological and Biomimetic Materials, Nanomaterials for Biomedical Applications</td>
<td>A Cold Atmospheric Plasma Modified Nanocomposite Material Curveball Scaffold</td>
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<td>218 B</td>
<td>Mechanical Solid and Structures, Computational Fracture Mechanics</td>
<td>KEYNOTE: Peridynamic Model for Fatigue Cracks</td>
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<td>218 B</td>
<td>Mechanical Solid and Structures, Computational Fracture Mechanics</td>
<td>Dynamic brittle fracture as a small horizon limit of unstable nonlinear dynamics</td>
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<td>12:00 PM</td>
<td>D1</td>
<td>218 B</td>
<td>Mechanical Solid and Structures, Computational Fracture Mechanics</td>
<td>Peridynamic bending and failure with non-ordinary state-based models</td>
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<td>11:00 AM</td>
<td>D2</td>
<td>214 C</td>
<td>Mechanical Solid and Structures, Coupled Process in Geomechanics</td>
<td>Strain localization in unsaturated soils with large deformations</td>
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<td>11:20 AM</td>
<td>D2</td>
<td>214 C</td>
<td>Mechanical Solid and Structures, Coupled Process in Geomechanics</td>
<td>A Nonlinear Interface Formulation for Soil-Structure Interaction Systems</td>
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<td>11:40 AM</td>
<td>D2</td>
<td>214 C</td>
<td>Mechanical Solid and Structures, Coupled Process in Geomechanics</td>
<td>Coupled Mechanical-Geophysical Monitoring of Rock Fractures and Damage</td>
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<td>11:00 AM</td>
<td>D7</td>
<td>214 D</td>
<td>Mechanical Solid and Structures, Mechanics of Nanomaterials</td>
<td>Investigation of extended stacking fault emission from grain boundaries using a DFT-informed 3D phase field dislocation dynamics (PFDD) model</td>
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<td>11:20 AM</td>
<td>D7</td>
<td>214 D</td>
<td>Mechanical Solid and Structures, Mechanics of Nanomaterials</td>
<td>Downscaling the technology of carbon fibers to produce ultra-high strength materials</td>
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<td>11:40 AM</td>
<td>D7</td>
<td>214 D</td>
<td>Mechanical Solid and Structures, Mechanics of Nanomaterials</td>
<td>Assessing MAXCVD-graphene surface energy through in situ SEM peeling</td>
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<tr>
<td>12:00 PM</td>
<td>D7</td>
<td>214 D</td>
<td>Mechanical Solid and Structures, Mechanics of Nanomaterials</td>
<td>Thermo-mechanical behaviors of single-crystalline and polytopic superlattic 215 nanowires</td>
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<td>11:00 AM</td>
<td>D8</td>
<td>206</td>
<td>Mechanical Solid and Structures, Mechanics of Thin Films and Multi-layer Materials</td>
<td>KEYNOTE: Micromechanical Deflection induced to Hybridization of Monomolecular DNA films: Lower</td>
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*Note: Times are in 24-hour format.*
W2 E3 214 A Siva Nadimpalli (siva.p.nadimpalli@njit.edu), Kejie Zhao (kzhao@njit.edu) 11:20 AM 1195 Mechanics in Material Science Mechanics and electrochemistry of energy storage materials Stresses in composite electrodes and their effect on battery design Nadimpalli, Siva Nadimpalli, Siva Sethuraman, Vijay (Brown University, United States); Abraham, Daniel (Argonne National Lab, United States); Guduru, Pradeep (Brown University, United States)

W2 E3 214 A Siva Nadimpalli (siva.p.nadimpalli@njit.edu), Kejie Zhao (kzhao@njit.edu) 11:40 AM 772 Mechanics in Material Science Mechanics and electrochemistry of energy storage materials Modulus Variation of Composite Graphite Electrodes in Lithium-Ion Batteries during Electrochemical Cycling Jones, Elizabeth M. C.; Jones, Elizabeth M. C. Tawoosil, Hadi; Gewirth, Andrew A.; White, Scott R.; Sotos, Nancy R. (University of Illinois at Urbana-Champaign, United States)

W2 E3 214 A Siva Nadimpalli (siva.p.nadimpalli@njit.edu), Kejie Zhao (kzhao@njit.edu) 12:00 PM 1146 Mechanics in Material Science Mechanics and electrochemistry of energy storage materials Topology optimization of energy conversion devices Lincoln Collins Collins, Lincoln Bhat-Chakravorty, Keshini (California Institute of Technology, United States)

W2 F1 318 Richard T. Meyer (rtmeyer@purdue.edu) 11:00 AM 929 Dynamics and Control Experimental and Computational Nonlinear Dynamics Impact of advection process in simulating the dynamics of diffusion-controlled irreversible fast/moderate/slow bimolecular-reactive systems Mudunuru, Manchi Mudunuru, Manchi Nakahara, Kiyotaka (University Of Houston, United States)

W2 F1 318 Richard T. Meyer (rtmeyer@purdue.edu) 11:20 AM 1300 Dynamics and Control Experimental and Computational Nonlinear Dynamics Computational Synthesis and Analysis of Internal Resonances in Transverse Vibrations of Hyperelastic Plates Tripathi, Asitva Tripathi, Asitva

W2 F1 318 Richard T. Meyer (rtmeyer@purdue.edu) 11:40 AM 1313 Dynamics and Control Experimental and Computational Nonlinear Dynamics SES Abstract_MeyerDeCarlo DeCarlo, Ray DeCarlo, Ray None

Wednesday - 1:40pm - 3:00pm

W3 A1 Fowler Hall Sulin Zhang, suz1@psu.edu 1:40 PM 786 Honor Symposia Prager Medal Symposium for Robert M. McMeeking Dissipation of high-temperature alloys: Application to failure of thermal barrier coatings Anand, Lalit Anand, Lalit None

W3 A1 Fowler Hall Sulin Zhang, suz1@psu.edu 2:00 PM 1105 Honor Symposia Prager Medal Symposium for Robert M. McMeeking Nonlinear Constitutive Representation for Cubic Materials Wright, Thomas Wright, Thomas None

W3 A1 Fowler Hall Sulin Zhang, suz1@psu.edu 2:20 PM 880 Honor Symposia Prager Medal Symposium for Robert M. McMeeking Supercooled liquids Suo, Zheng Suo, Zheng None

W3 A1 Fowler Hall Sulin Zhang, suz1@psu.edu 2:40 PM 916 Honor Symposia Prager Medal Symposium for Robert M. McMeeking Continuum Mechanics beyond the Second Law of Thermodynamics Ostojic-Staracewicz, Martin Ostojic-Staracewicz, Martin None


W3 B1 204 Hassan Masoud, Princeton University and Courant Institute 2:00 PM 1270 Mechanics of Fluids and Thermal Systems Fluid-Structure Interaction: From Engineering to Biology On the Curvature and Spacetime Flexibilities of Fish Fin during Free Swimming Liu, Geng Liu, Geng Liu, Chengyu; Dong, Halbo (University of Virginia, United States); Lauder, Nazareno


W3 B1 204 Hassan Masoud, Princeton University and Courant Institute 2:40 PM 714 Mechanics of Fluids and Thermal Systems Fluid-Structure Interaction: From Engineering to Biology Near-wall motion of a spermatozoan in viscoelastic fluids Li, Qiaojun Li, Qiaojun Kari, Alexoa; Azevedo, Andreaks (Purdue University, United States)

W3 B2 218 A Young, Yuan (yyoung@njit.edu) 1:40 PM 782 Mechanics of Fluids and Thermal Systems Mechanics of Vesicles and Cells A theoretical study of biological membrane response to temperature gradients at the single cell level Atia, Lior literatia@technion.a c.il Giri, Self (Technion, Israel)

W3 B2 218 A Young, Yuan (yyoung@njit.edu) 2:00 PM 891 Mechanics of Fluids and Thermal Systems Mechanics of Vesicles and Cells The minimum electrical field that can be detected by a biological membrane—thermal noise limit Mhadoopoor, Fatemeh Mhadoopoor@uh.edu Lue, Liang (Rutgers University, United States); Sharma, Pradeep (University of Houston, United States)

W3 B2 218 A Young, Yuan (yyoung@njit.edu) 2:20 PM 744 Mechanics of Fluids and Thermal Systems Mechanics of Vesicles and Cells Study of Surface Configuration of Soft Spherical shell under Cylindrical indenters Yousefian, Sinalaus Yousefian, Sinalaus None

W3 B2 218 A Young, Yuan (yyoung@njit.edu) 2:40 PM 814 Mechanics of Fluids and Thermal Systems Mechanics of Vesicles and Cells Electrotoprption dynamics of giant lipid vesicles Riske, Karin kariske@unifesp.br Lira, Rafael (Universidade de Sao Paulo, Brazil); Dimova, Rouzbeh (Max Planck Institute of Colloids and Interfaces, Germany)

W3 C1 318 Zeng, Xianwei (xianwei.zeng@utsa.edu) Wang, Yilun 1:40pm 747 Biological and Biomimetic Materials Computational and Experimental Investigations of Bis-Inorganic A Nanomechanics Based Investigation into Interface Thermomechanics of Colagen and Chitin Based Tomar, Vikas Gu, Tao Tomar, Vikas (Purdue University West Lafayette, United States)

W3 C1 318 Zeng, Xianwei (xianwei.zeng@utsa.edu) Wang, Yilun 2:00pm 863 Biological and Biomimetic Materials Computational and Experimental Investigations of Bis-Inorganic Computational Viewpoints of Interaction between Nanoparticle and Cell Membrane Wang, Xianqiao Zhang, Liuyang Wang, Xianqiao (University of Georgia, United States)

W3 C1 318 Zeng, Xianwei (xianwei.zeng@utsa.edu) Wang, Yilun 2:20pm 900 Biological and Biomimetic Materials Computational and Experimental Investigations of Bis-Inorganic Universal Structure-Material-Property Map for Natural and Biomimetic Platelet-Matrix Composites Mhassar, roubell Mhassar, roubell None

W3 C1 318 Zeng, Xianwei (xianwei.zeng@utsa.edu) Wang, Yilun 2:40pm 1024 Biological and Biomimetic Materials Computational and Experimental Investigations of Bis-Inorganic Computational Modeling of Cell-Cell Interaction and Multi-Cell Migration Zeng, Xianwei Zeng, Xianwei None

W3 C2 218 D Cao, brian 1:40 PM 653 Biological and Biomimetic Materials Mechanical Biology of cells and tissues: emergent behavior in Cells as strain-coupled automata Cao, brian Cao, brian None

W3 C2 218 D Cao, brian 2:00 PM 821 Biological and Biomimetic Materials Mechanical Biology of cells and tissues: emergent behavior in Biological ferroelectricity—phenomena, mechanism, and implications Li, Jinyu Li, Jinyu None

W3 C2 218 D Cao, brian 2:20 PM 1241 Biological and Biomimetic Materials Mechanical Biology of cells and tissues: emergent behavior in Mechanosensitive response of voltage-gated ion channels Agrawal, Ashutosh Agrawal, Ashutosh Chaurasia, Vikash (University of Houston, United States)

W3 C2 218 D Cao, brian 2:40 PM 1312 Biological and Biomimetic Materials Mechanical Biology of cells and tissues: emergent behavior in Time varying cell forces—a new paradigm in cellular mechanotransduction Safi, M Taher Safi, M Taher Knoll, Samantha (United States)

W3 C3 218 C Liu's Grace Zhang, lghuang@pseu.edu; Guy Gennini 1:40 PM 1285 Biological and Biomimetic Materials Nanomaterials For Biomedical Applications KEYNOTE: Transitioning from Nanomedicine to Nanotechnology webster, thomas webster, thomas None

W3 C3 218 C Liu's Grace Zhang, lghuang@pseu.edu; Guy Gennini 2:00 PM 763 Biological and Biomimetic Materials Nanomaterials For Biomedical Applications Evaluation of magnetic nanoparticle heating for a novel implantable biomedical device for localized Kan-Dapaah, Kwabena Kan-Dapaah, Kwabena Rahbar, Nima (Worcester Polytechnic Institute, United States)
W4 CS 218 C Lijie Grace Zhang (ljhang@purdue.edu); Guy Gennin 3:30 PM 1236 Biological and Biomimetic Materials Nanomaterials for Biomedical Applications The tendon-to-bone enthesis as a structured nano material Genin, Guy Genin, Guy Boyles, John; Demeyer Black, Ailin Hu; Yihong; Lipner, Justin; Saadat, F.

W4 CS 218 C Lijie Grace Zhang (ljhang@purdue.edu); Guy Gennin 3:50 PM 809 Biological and Biomimetic Materials Nanomaterials for Biomedical Applications Graphene for Its Biomedical Applications Datta, Dibakar Datta, Dibakar Kim, Sang-Pil (Samsung Engineering, Korea, Republic of); Shenoy, Vivek

W4 CS 218 C Lijie Grace Zhang (ljhang@purdue.edu); Guy Gennin 4:10 PM 883 Biological and Biomimetic Materials Nanomaterials for Biomedical Applications 3D Bioprinting of Functionalized Graphene Nanoplatelet-based Gel for Neuro O'Brien, Christopher O'Brien, Christopher None

W4 CS 218 C Lijie Grace Zhang (ljhang@purdue.edu); Guy Gennin 4:30 PM 798 Biological and Biomimetic Materials Nanomaterials for Biomedical Applications Endobooty of PEGylated Nanoparticles: What is the role of grafted polyethylene glycol? Li, Ying Li, Ying None

W4 CS 218 C Lijie Grace Zhang (ljhang@purdue.edu); Guy Gennin 4:50 PM 768 Biological and Biomimetic Materials Nanomaterials for Biomedical Applications Highly interconnected porous nanocomposite scaffolds manufactured by table-top 3D printing Castro, Nathan Castro, Nathan Zhang, Lipe (The George Washington University, United States)

W4 D3 218 A Bob Svendsen (b.svendsen@mpi.de) 3:30pm 1055 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation Quantify grain growth from phase field modeling Li, Mo Li, Mo None

W4 D3 218 A Bob Svendsen (b.svendsen@mpi.de) 3:50pm 919 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation Coupling discrete dislocation dynamics with polycrystal plasticity (Invited) Lesar, Richard Lesar, Richard Robett, Anthony (Carnegie Mellon University, United States)

W4 D3 218 A Bob Svendsen (b.svendsen@mpi.de) 4:10pm 784 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation Moisecole modeling of the martensitic transformations coupled with plasticity in Yeddu, Hemanth Yeddu, Hemanth Lookman, Turab; Sasha, Avadsh (Los Alamos National Laboratory, United States)

W4 D3 218 A Bob Svendsen (b.svendsen@mpi.de) 4:30pm 650 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation Phase field approach to interaction of phase transformations and plasticity in the strains Leitvas, Valery Leitvas, Valery Javanbakht, Mahdi (Iowa State University, United States)

W4 D4 218 A Ahmed Elbanna (elbanna2@illinois.edu) 4:10 PM 1235 Mechanics of Solids and Structures Friction, Fracture, and Damage: From Faulting to Gouge Sheared granular layers: Competition between flash heating and particle comminution Li, Rui Li, Rui Elbanna, Ahmed (University of Illinois at Urbana-Champaign, United States)

W4 D4 218 A Ahmed Elbanna (elbanna2@illinois.edu) 4:30 PM 1279 Mechanics of Solids and Structures Friction, Fracture, and Damage: From Faulting to Gouge A computational study of adhesion between rough surfaces in contact Hulikal, Sriraj Hulikal, Sriraj Lapota, Nadia; Bhattacharya, Kaushik (Caltech, United States)

W4 D4 218 A Ahmed Elbanna (elbanna2@illinois.edu) 4:50 PM 1305 Mechanics of Solids and Structures Friction, From Fracturing to Gouge Scaling laws for stress and energy for an interface with strong role weakening friction Elbanna, Ahmed Rao, Yu Yang Elbanna, Ahmed (UIUC, United States)

W4 D6 214 C Vikas Tomar (tomar@purdue.edu); Stephen Spinelli (sspineli2@illinois.edu) 3:30 PM 755 Mechanics of Solids and Structures Mechanics of Multifunctional Materials and Structures A Raman Spectroscopic Investigation of Thermal Conductive Structures and Role of Surface Stress in Deformation of Stressed Silicon Micro-Cantilevers at Tomar, Vikas Gan, Ming Tomar, Vikas (Purdue University West Lafayette, United States)

W4 D6 214 C Vikas Tomar (tomar@purdue.edu); Stephen Spinelli (sspineli2@illinois.edu) 3:50PM 849 Mechanics of Solids and Structures Mechanics of Multifunctional Materials and Structures The influence of crystallographic texture on fracture of the shape-memory LePage, William LePage, William Daly, Samantha (University of Michigan, United States)

W4 D6 214 C Vikas Tomar (tomar@purdue.edu); Stephen Spinelli (sspineli2@illinois.edu) 4:10PM 896 Mechanics of Solids and Structures Mechanics of Multifunctional Materials and Structures Dielectric elastomer composites: A general closed-form solution in the small deformation limit Spinelli, Stephen Spinelli, Stephen Lehure, Victor; Lopez-Farnies, Oscar (University of Illinois at Urbana-Champaign, United States)

W4 D6 214 C Vikas Tomar (tomar@purdue.edu); Stephen Spinelli (sspineli2@illinois.edu) 4:30:00PM 897 Mechanics of Solids and Structures Mechanics of Multifunctional Materials and Structures Wave propagation in random fibrous networks Babaee, Sahab Babaee, Sahab Shalshawar, Siveni (Rensselaer Polytechnic Institute, United States); Wang, Pai (Harvard, United States); Pcu, R. C (Rensselaer Polytechnic Institute, United States); Bartold, Kita (Harvard, United States)

W4 D6 214 C Vikas Tomar (tomar@purdue.edu); Stephen Spinelli (sspineli2@illinois.edu) 4:50PM 877 Mechanics of Solids and Structures Mechanics of Multifunctional Materials and Structures Mechanics of defect transport in tungsten from first principles calculations Hossain, Md Hossain, Md Marian, Jaime (Lawrence Livermore National Lab, United States)

W4 D7 214 D Mohammad Naraghi, narahgi@aero.tamu.edu 3:30 PM 1045 Mechanics of Solids and Structures Mechanics of Nanomaterials Nanoscale mechanics of focused ion beam processing Das, Kabil Das, Kabil Freund, Jonathan, Johnson, Harley (University of Illinois at Urbana-Champaign, United States)

W4 D7 214 D Mohammad Naraghi, narahgi@aero.tamu.edu 3:50 PM 1064 Mechanics of Solids and Structures Mechanics of Nanomaterials The size and Rate Dependence of the Large Deformation Response of PS Nanofibers Kolluru, Pavan Kolluru, Pavan Chasiositis, Ioannis (University of Illinois, Urbana-Champaign, United States)

W4 D7 214 D Mohammad Naraghi, narahgi@aero.tamu.edu 4:10 PM 1190 Mechanics of Solids and Structures Mechanics of Nanomaterials Investigation of indentation size effects in elastomers Chandrasekar, Gurudutt Chandrasekar, Gurudutt Alifaf, Raffi; Man, Chang Chek (University of Wyoming, United States)

W4 D7 214 D Mohammad Naraghi, narahgi@aero.tamu.edu 4:30 PM 1255 Mechanics of Solids and Structures Mechanics of Nanomaterials Strain mediated nanoscale transport in nanostructured carbon materials Hossain, Md Hossain, Md None

W4 D7 214 D Mohammad Naraghi, narahgi@aero.tamu.edu 4:50 PM 1264 Mechanics of Solids and Structures Mechanics of Nanomaterials Nanomechanical Characterization of Carbon Nanotube-Polymer Interfacial Strength Ke, Changhong Chen, Xiaolong Ke, Changhong (State University of New York at Binghamton, United States)

W4 D8 206 Yong Zhu, yong_zhu@ncsu.edu 3:30 pm 1150 Mechanics of Solids and Structures Mechanics of Thin Films and Multilayer Materials KEYNOTE: Electronic Eyes Enabled by Stretchable Electronics: Mechanics, Materials and Optics Xiao, Jianliang Xiao, Jianliang None

W4 D8 206 Yong Zhu, yong_zhu@ncsu.edu 4:10 pm 729 Mechanics of Solids and Structures Mechanics of Thin Films and Multilayer Materials Stretchability of freestanding and poly-silicon-supported serpentine thin films Yang, Shenyan Yang, Shenyan None

W4 D8 206 Yong Zhu, yong_zhu@ncsu.edu 4:30 pm 1084 Mechanics of Solids and Structures Mechanics of Thin Films and Multilayer Materials Residual stress and mechanical property measurements in amorphous Si photovoltaic thin films Antaris, Dimitrios Antaris, Dimitrios Chasiositis, Ioannis (University of Illinois at Urbana-Champaign, United States)

W4 D8 206 Yong Zhu, yong_zhu@ncsu.edu 4:50 pm 1182 Mechanics of Solids and Structures Mechanics of Thin Films and Multilayer Materials Influence of Hot and Cold Rolling on the Elastic Properties of Layer-by-Layer Assembled Composite Kieffer, John Kieffer, John Sui, Lam (Georgia Institute of Technology, United States)

W4 D8 206 Yong Zhu, yong_zhu@ncsu.edu 5:10 pm 845 Mechanics of Solids and Structures Mechanics of Thin Films and Multilayer Materials Thermo-mechanical Modeling of Scanning Joule Expansion Microscopy Imaging of Single-Walled Carbon Nanotubes Song, Jiuhong Song, Jiuhong Xie, Xu; Rogers, John (University of Illinois at Urbana-Champaign, United States)

W4 D9A 306 Tom Bieler, bieler@egr.msu.edu 3:30 PM 706 Mechanics of Solids and Structures Microscale and Microstructural Effects on Mechanical Behavior Strengthening Mechanisms in Low Carbon Microstructured Steels Findley, Kip Findley, Kip None


W4 D9A 306 Tom Bieler, bieler@egr.msu.edu 4:10 PM 882 Mechanics of Solids and Structures Microscale and Microstructural Effects on Mechanical Behavior Deformation Induced Grain Rotations in Single Crystal Tantalum Carroll, Jay Carroll, Jay Lim, Hoojin; Rodrigue, Mark; Battale, Corbett; Boyce, Brad;
W4 306
306
Tom Bieler, bieler@egr.msu.edu
4:30 PM
771
Mechanics of Solids and Structures
Microscale and Multiscale Effects on Mechanical Behavior
In-Situ Deformation Characterization of Mg-based materials
boehlert, carl
boehlert, carl
None

W4 306
306
Tom Bieler, bieler@egr.msu.edu
4:50 PM
1247
Mechanics of Solids and Structures
Microscale and Multiscale Effects on Mechanical Behavior
Study of Slip in High Purity Single Crystal Neobium for Accelerator Cavities
Kang, Di
Kang, Di
Baars, Denek; Bieler, Thomas; Compton, Chris (Michigan State)

W4 306
306
Tom Bieler, bieler@egr.msu.edu
5:10 PM
1301
Mechanics of Solids and Structures
Microscale and Multiscale Effects on Mechanical Behavior
A study of stress gradients in a Titanium Alloy
Kamakka, Chen; Kamakka, Chen; Beaudoin, Armando (University of Illinois at Urbana-Champaign, Spain)

W4 314
314
Niranjan D Parab, nparab@purdue.edu
3:30 PM
1030
Mechanics of Solids and Structures
Microscale and Multiscale Effects on Mechanical Behavior
Twining and the Mechanism of Behavior of Magnesium Alloys at High Strain Rates
Kannan, Vignesh
Kannan, Vignesh
Ramesh, K T (Johns Hopkins University, United States)

W4 314
314
Niranjan D Parab, nparab@purdue.edu
3:50 PM
1289
Mechanics of Solids and Structures
Microscale and Multiscale Effects on Mechanical Behavior
Investigation of Material Deformation Mechanisms During High Rate Loading Using Simultaneous X- and Y-Rays
Hosseini, Mahdi
Hosseini, Mahdi

W4 314
314
Niranjan D Parab, nparab@purdue.edu
4:10 PM
1193
Mechanics of Solids and Structures
Microscale and Multiscale Effects on Mechanical Behavior
Dynamic mechanical response and microstructural effects in commercially hot-pressed boron carbide
Farbaric, Lukas
Farbaric, Lukas
Shaffer, Matthew; Ramesh, K T (Johns Hopkins University, United States)

W4 314
314
Niranjan D Parab, nparab@purdue.edu
4:30 PM
674
Mechanics of Solids and Structures
Microscale and Multiscale Effects on Mechanical Behavior
The impact resistance of austenitic double arrowed homocentric
Chen, Changpeng
Chen, Changpeng

W4 D10
313
Albert To, albertto@pitt.edu; Amin Aghaei2
3:30pm
689
Mechanics of Solids and Structures
Multiscale Analysis of Nano- and bulk structures
From Theory to Experiment
Purushotham Prashant
Purushotham Prashant
None

W4 D10
313
Albert To, albertto@pitt.edu; Amin Aghaei2
4:10pm
641
Multiscale Analysis of Nano- and biostuctures
From Theory to Experiment
Abdolsosseini Qomi
Abdolsosseini Qomi
Pelloni, Roland; Ulm, Franz (MIT, United States)

W4 D10
313
Albert To, albertto@pitt.edu; Amin Aghaei2
4:30pm
816
Multiscale Analysis of Nano- and biostuctures
From Theory to Experiment
Li, Yinfen
Li, Yinfen

W4 D10
313
Albert To, albertto@pitt.edu; Amin Aghaei2
5:00pm
752
Multiscale Analysis of Nano- and biostuctures
From Theory to Experiment
Tomar, Vikas
Lee, Hongkou
Tomar, Vikas (Purdue University, West Lafayette, United States)

W4 D10
313
Albert To, albertto@pitt.edu; Amin Aghaei2
5:30pm
1202
Multiscale Analysis of Nano- and biostuctures
From Theory to Experiment
Soroukhian, Sepideh
Soroukhian, Sepideh
Nguyen, Linh (Lawrence Livermore National Laboratory, United States)

W4 D15
310
Pradeep Sharma, psharma@uh.edu; Changyong Cao, changyongcao@gmail.com
3:30 PM
1286
Soft Materials and Structures
Using nonlinear elasticity to design piezoelectricity and magnetoelectricity in soft materials
Sharma, Pradeep
psharma@uh.edu
Ding, Zhao (University of Houston, United States); Liu, Ueping (Rutgers University, United States)

W4 D15
310
Pradeep Sharma, psharma@uh.edu; Changyong Cao, changyongcao@gmail.com
4:10 PM
1087
Soft Materials and Structures
Experimental and theoretical investigation of magnetoelectrically elastomers with layered microstructures
Cao, Changyong
changyongcao@gmail.com
Lin, Shaotong; Zhao, Xuanchen; MIT, United States

W4 D15
310
Pradeep Sharma, psharma@uh.edu; Changyong Cao, changyongcao@gmail.com
4:30 PM
1131
Soft Materials and Structures
Dielectric elastomer actuator with dual mechanical stiffness response
Lai, William
william7@hastadet.edu
Bastawros, Ashraf; Hong, Wei; Jennings, Alexander (Iowa State University, United States)

W4 E2
214 B
Chandler Becker, chandler.becker@nist.gov
3:30pm
890
Mechanics in Material Science
Interatomic Models in Materials Simulations: Theory, Standards, Standards
Becker, Chandler
Becker, Chandler
Trautz, Zachary (NIST, United States)

W4 E2
214 B
Chandler Becker, chandler.becker@nist.gov
3:50pm
1090
Mechanics in Material Science
Interatomic Models in Materials Simulations: Theory, Standards, Standards
Coleman, Shawn P
Coleman, Shawn P
Spears, Douglas E. (University of Arkansas, United States)

W4 E2
214 B
Chandler Becker, chandler.becker@nist.gov
4:10pm
776
Mechanics in Material Science
Interatomic Models in Materials Simulations: Theory, Standards, Standards
Ortiz, Michael (California Institute of Technology, United States); Ariza,

W4 E2
214 B
Chandler Becker, chandler.becker@nist.gov
4:30pm
986
Mechanics in Material Science
Interatomic Models in Materials Simulations: Theory, Standards, Standards
Strachan, Alejandro
Strachan, Alejandro
None

W4 E2
214 B
Chandler Becker, chandler.becker@nist.gov
4:50pm
986
Mechanics in Material Science
Interatomic Models in Materials Simulations: Theory, Standards, Standards
Strachan, Alejandro
Strachan, Alejandro
None

W4 E3
214 A
Kejia Zhao, kejia@mit.edu; Sva Nadimpalli, sva.p.nadimpalli@mit.edu
3:30 PM
731
Mechanics in Material Science
Mechanics and electromechanics of energy storage materials
McKeever, Robert
McKeever, Robert
None

W4 E3
214 A
Kejia Zhao, kejia@mit.edu; Sva Nadimpalli, sva.p.nadimpalli@mit.edu
3:50 PM
778
Mechanics in Material Science
Mechanics and electromechanics of energy storage materials
Bucci, Giovanni
Bucci, Giovanni
Carter, W; Craig; Chiou, Yet-Ming (Massachusetts Institute of Technology, United States)

W4 E3
214 A
Kejia Zhao, kejia@mit.edu; Sva Nadimpalli, sva.p.nadimpalli@mit.edu
4:10 PM
860
Mechanics in Material Science
Mechanics and electromechanics of energy storage materials
Yan, Bo
Yan, Bo
Yim, Cheewong (Indiana University Purdue University Indianapolis, United States); Yin, Lei (University of Michigan, United States)

W4 E3
214 A
Kejia Zhao, kejia@mit.edu; Sva Nadimpalli, sva.p.nadimpalli@mit.edu
4:30 PM
1187
Mechanics in Material Science
Mechanics and electromechanics of energy storage materials
ANG, HUI
ANG, HUI
Zhang, Sulin (Pennsylvania State University, United States)

W4 E3
214 A
Kejia Zhao, kejia@mit.edu; Sva Nadimpalli, sva.p.nadimpalli@mit.edu
4:50 PM
1125
Mechanics in Material Science
Multi-scale and multi-Physics Modeling of Li-ion Battery Cells
Salvador, Alberto
Salvador, Alberto
Grazioso, Davide (University of Brescia, Italy); Geers, Marc (TU/e, Nijmegen, Netherlands)

W4 G1
218 B
Charles Krougrioff, krougrioff@purdue.edu
3:30 PM
Education in Engineering Science
Characterizing and Enhancing Computational Literacy in Undergraduate Engineering Education
Magana, Alejandro
Magana, Alejandro
None

T1  08  206  Tang Li (tli@umd.edu)  9:40am  911  Mechanics of Solids and Structures  Mechanics of Thin Films and Multi-layer Materials  Mesoscale Simulation of Stress Relaxation in Thin Polymer Films and the Connection to Allibert, Brendan  Allibert, Brendan  Liu, Wing Kam; Keton, Sian  (Northwestern University, United States)  T1  08  206  Tang Li (tli@umd.edu)  10:00am  1159  Mechanics of Solids and Structures  Mechanics of Thin Films and Multi-layer Materials  Experimental and Numerical Investigation of Role of Contamination on Tensile and Shear Strength of Tavas, Denizhan  Tavas, Denizhan  Shang, Xu; Bastawros, Ashraf F.  (Iowa State University, United States)  T1  09A  306  Michael O Sangid (msangid@purdue.edu)  9:00 AM  1173  Mechanics of Solids and Structures  Micromechanical and Microstructural Effects on Mechanical Behavior  Fracture in Aluminum Alloy for Aerospace Application Beaudoin, Armand  Beaudoin, Armand  Messner, Mark; Dodds, Robert  (University of Illinois at Urbana-Champaign, United States)  T1  09A  306  Michael O Sangid (msangid@purdue.edu)  9:40 AM  1050  Mechanics of Solids and Structures  Micromechanical and Microstructural Effects on Mechanical Behavior  Microstructural variables that affect the fatigue crack initiation location in a nickel-base superalloy at 800°C Shaym, Amit  Shaym, Amit  Roy, Shilaboyan; Dresopoulou, Sebastien; Maziau, Phil Oak Ridge National Laboratory, United States  T1  09A  306  Michael O Sangid (msangid@purdue.edu)  10:00 AM  1034  Mechanics of Solids and Structures  Micromechanical and Microstructural Effects on Mechanical Behavior  Strategic characterization of crack path propagation in brittle structural materials Krogstad, Jessica  Krogstad, Jessica  None  T1  09B  314  Alberto Mello (mello@purdue.edu)  9:00 AM  1181  Mechanics of Solids and Structures  Micromechanical and Microstructural Effects on Mechanical Behavior  Micro-scale elastic properties of interphases in polymer matrix composites: correlating spatial Kieffer, John  Kieffer, John  Aldridge, Michael; Sebeck, Charles  (University of Michigan, United States)  T1  09B  314  Alberto Mello (mello@purdue.edu)  9:40 AM  1040  Mechanics of Solids and Structures  Micromechanical and Microstructural Effects on Mechanical Behavior  Multiscale Mechanics of Particulate Media: Dielectric Elasticosome Composites: The critical role of interphases Lopez-Pamies, Oscar  Lopez-Pamies, Oscar  None  T1  09B  314  Alberto Mello (mello@purdue.edu)  10:20 AM  968  Mechanics of Solids and Structures  Multiscale Mechanics of Particulate Media  Investigation of Strength Limiting Mechanisms in Soft Composites: Microstructural Designs that can Potentially Address Fatigue Crack Afghan, Richard  Sahn, Korhan  Sahn, Korhan  (University of Illinois at Urbana-Champaign, United States)  T1  011  313  David Henann (david_henann@brown.edu)  9:00 AM  721  Multiscale Mechanics of Particulate Media  Multiscale Mechanics of Particulate Media  Micromechanics of Materials and Structures: A stochastic process Purushothaman, Prasanth  Purushothaman, Prasanth  Martin, Raleigh; Strelow, Douglas  (University of Pennsylvania, United States)  T1  011  313  David Henann (david_henann@brown.edu)  9:40 AM  882  Multiscale Mechanics of Particulate Media  Multiscale Mechanics of Particulate Media  Modelling size segregation of bimodisperse granular flow; the roles of segregation, adhesion, and friction Fan, Yi  Fan, Yi  Schick, Connor; Isner, Austin; Ottino, Julio; Limbach, Carol; Paul, Richard  (University of California, Berkeley, United States)  T1  011  313  David Henann (david_henann@brown.edu)  10:00 AM  1113  Multiscale Mechanics of Particulate Media  Multiscale Mechanics of Particulate Media  Mechanisms of Fatigue Crack Propagation in High-Strength Structural Alloys and Composites: Experiments and simulations of the interaction of high velocity granular clays with structures Goel, Ashish  Goel, Ashish  Liu, Tao  (University of Nottingham, United Kingdom; UHR, Tulane University, United States)  T1  015A  310  Mark Gustaf, Wang, Qiming (qmimg.wang@duke.edu)  9:00 AM  1138  Soft Materials and Structures  Soft Materials and Structures  Tensile surface topographies via particle-enhanced soft composites Boyce, Mary C.  Boyce, Mary C.  Sustag, Mark (United States)  T1  015A  310  Mark Gustaf, Wang, Qiming (qmimg.wang@duke.edu)  9:40 AM  741  Soft Materials and Structures  Soft Materials and Structures  Defects controlled wrinkling and topological design in graphene zhang, ting  ting_zhang@brown.edu  None  T1  015A  310  Mark Gustaf, Wang, Qiming (qmimg.wang@duke.edu)  10:40 AM  1176  Soft Materials and Structures  Soft Materials and Structures  Mechanical Behavior of Biomimetic Surface Scales ghosh, ranajay  ranajayghosh@purdue.edu  None  T1  015A  310  Mark Gustaf, Wang, Qiming (qmimg.wang@duke.edu)  10:00 AM  1114  Soft Materials and Structures  Soft Materials and Structures  Melt infiltrated Polyurethane Substrate for Transparent Electronics Lopez, Hector  Lopez@eecs.illinois.edu  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  9:00 AM  807  Soft Materials and Structures  Soft Materials and Structures  Fiber-reinforced tough hydrogels Reperumura, Widusha  widusha@gmail.com  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  9:40 AM  624  Soft Materials and Structures  Soft Materials and Structures  Design Tough and Resilient Hydrogels for Artificial Cartilage and Heart Valve zhao, suanhe  zhao@ilu.org  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  10:40 AM  736  Soft Materials and Structures  Soft Materials and Structures  An enhanced finite element formulation for the coupled diffusion in gel at a swollen reference configuration Krishok, Andreas  linder@stanford.edu  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  10:00 AM  830  Soft Materials and Structures  Soft Materials and Structures  Effect of Interfacial Forces in Mechanical Behavior of Elastomers Khatshaseid, Hezam  khatshaseid@mech.sfu.ca  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  9:00 AM  652  Mechanical Materials Science  Mechanical Materials Science  KEYNOTE: Simulations of Complex Materials Structures with Charge Optimized Many-Body Phlipot, Simon  phlipot@ms.ehu.eus  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  9:40 AM  975  Mechanical Materials Science  Mechanical Materials Science  INVITED: Analytic bond-order potentials: from the electronic structure to million atom simulations Drautz, Ralf  Drautz, Ralf  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  10:00 AM  1172  Mechanical Materials Science  Mechanical Materials Science  INVITED: Reactive Force Fields – Current Status, Needs, and Challenges Kieffer, John  Kieffer, John  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  9:00-9:20  873  Mechanical Materials Science  Mechanical Materials Science  INVITED: Mechanical Properties of Silicon Nanowire Anodes at Different States of Charge Moeing, Reiner  moeing@stanford.edu  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  9:20-9:40  881  Mechanical Materials Science  Mechanical Materials Science  Experimental Investigation into the Mechanical Properties of Metal Anodes in Lithium-Ion Batteries Ghahremaninejad, Ali  ghahremaninejad@umich.edu  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  9:40-10:00  967  Mechanical Materials Science  Mechanical Materials Science  Fracture Characteristics of Lithiated Silicon for Lithium-Ion Batteries Xia, Shuman  Xia@stanford.edu  None  T1  015B  322  Reperumura, Widusha, Linder Christian (linder@stanford.edu)  10:00-10:20  732  Mechanical Materials Science  Mechanical Materials Science  Classifying the Mechanisms of Electrochemical Shock in Ion-Intercalation Materials Woodford, William  woodford@stanford.edu  None  T1  016  214 A  Hussein Zib (zib@ttu.edu)  9:00am  1278  Mechanical Materials Science  Mesoscale mechanics of materials  Material behavior of sheet metal key witness to the mechanical performance of the sheet metal material Hussein Zib  (Texas Tech University, United States)  T1  016  214 A  Hussein Zib (zib@ttu.edu)  9:40am  1222  Mechanical Materials Science  Mesoscale mechanics of materials  Material behavior of sheet metal key witness to the mechanical performance of the sheet metal material Hussein Zib  None
A1 202 Marc Kamlah, marc.kamlah@kit.edu 2:40 PM 836 Honor Symposium Prager Medal Symposium for Robert M. McMeeking Modeling piezoelectric processes in ferroelectric devices taking into account weak electric conductivity Kamlah, Marc Schwaab, Holger Kamlah, Marc (Karlsruhe Institute of Technology, Germany)

A2 1:40 PM 767 Honor Symposium Eringen Medal Symposium in honor of Prof. John A. Rogers Micro-Masonry (for Multi Small Volume Rapid Fabrication) Kim, Seok Kim, Seok none

A2 2:00 PM 633 Honor Symposium Eringen Medal Symposium in honor of Prof. John A. Rogers Discovery enabled by in-situ synchrotron x-ray techniques Sun, Yugang Sun, Yugang none

A2 2:20 PM 700 Honor Symposium Eringen Medal Symposium in honor of Prof. John A. Rogers High Density Semiconducting Nanotube Arrays for High-Performance Electronics Cao, Qin Cao, Qin none

A2 2:40 PM 709 Honor Symposium Eringen Medal Symposium in honor of Prof. John A. Rogers Stretchable Bioelectronics for Medical Devices and Systems Ghaffari, Roobeh Ghaffari, Roobeh none

A1 204 Kam-Tim Chau, kam-tim.chau@polysy.edu.hk 1:40 PM 1180 Honor Symposium John Rudyk’s Symposium: Recipient of Engineering Science Medal Predicting Strain Localization in High Porosity Materials Issan, Kathleen Issan, Kathleen Ingram, Mathew (San Diego National Laboratories, United States)

A1 2:00 PM 1239 Honor Symposium John Rudyk’s Symposium: Recipient of Engineering Science Medal Fractals at elastico-plastic transitions in metals, solids, and rocks Ostoj-Stzarowski, Martin Ostoj-Stzarowski, Martin none

A1 2:20 PM 1246 Honor Symposium John Rudyk’s Symposium: Recipient of Engineering Science Medal Liquefaction in granular matter as a diffuse instability with micro morphological origin Andrade, Jose Andrade, Jose none

C4 318 Siwan Keten (s-keten@northwestern.edu,) 2:40 AM 1292 John Rudyk’s Symposium: Recipient of Engineering Science Medal An Investigation into the Environment and Temperature Dependent Nanomechanical Properties Tomar, Vikas Varma, Devendra Tomar, Vikas (Purdue University West Lafayette, United States)

C4 318 Siwan Keten (s-keten@northwestern.edu,) 2:00 PM 1049 Biological and Biomimetic Materials Nano and Mesoscale Organization and Mechanical and Functional analysis of the micro/nano structures of biological inspiration and models Zhang, Hongxiao Zhao, Hongxiao Yin, Yuan (Tsinghua University, China; Zhang, Zhe, Hong Kong) none

C4 318 Siwan Keten (s-keten@northwestern.edu,) 2:20 PM 1168 Biological and Biomimetic Materials Nano and Mesoscale Organization and Mechanical and Functional analysis of the micro/nano structures of biological inspiration and models of Bio-inspired Flexible Composites: Experiments, Simulations and Analytical Solutions Rudykh, Stephan Rudykh, Stephan Boyce, Mary (Columbia University, United States)

D1 1:40 PM 779 Mechanics of Solids and Structures 13:40pm 2:40pm Yang, Qingda Yang, Qingda Wang, Lifeng (Stony Brook University, United States); Liu, Shichao (Chinese University of Hong Kong) none

D1 2:00 PM 1070 Mechanics of Solids and Structures 2:00 PM Yang, Qingda Yang, Qingda Molinari, Jean-François (EPFL, Switzerland) none

D1 2:20 PM 903 Mechanics of Solids and Structures 2:20 PM Yang, Qingda Yang, Qingda Nairn, Mehdi (University of Miami, Miami) none

D1 2:40 PM 1112 Mechanics of Solids and Structures 2:40 PM Yang, Qingda Yang, Qingda Zhao, Haijun (University of California, Riverside) none

D3 13:40pm 667 Mechanics of Solids and Structures 13:40pm 2:40pm Dean Preston - dean@tartan.gov Coupling Plasticity and Phase Transformation Two types of martensitic phase transformations in magnetic shape memory alloy by in-situ observations Zhang, Xinghong Zhang, Xinghong Liu, Yue; Karaman, Ibrahim; Wang, Huan (Texas A&M University, College Station) none

D3 14:00pm 908 Mechanics of Solids and Structures 14:00pm 2:40pm Dean Preston - dean@tartan.gov Coupling Plasticity and Phase Transformation Thermomechanical coupling of a half-space finite element model for simulating shape memory alloy response (invited) Lagoautes, Dimitris Agolia, Babatunde Baeza, Thaiseh; Tegou, Dimitris (Texas A&M University, College Station) none

D3 14:40pm 957 Mechanics of Solids and Structures 14:40pm 2:40pm Dean Preston - dean@tartan.gov Coupling Plasticity and Phase Transformation A phase field finite element approach to study the effects of plasticity on thermal- and stress-induced martensite transformation in superelastic shape memory alloy Anderson, Peter Anderson, Peter Manchiraju, Swap; Bowers, Matthew; Mills, Michael; (The Ohio State University, Columbus) none

D3 14:40pm 645 Mechanics of Solids and Structures 14:40pm 2:40pm Dean Preston - dean@tartan.gov Coupling Plasticity and Phase Transformation A Microstructure-Informed Phase Field Model of Fully Coupled Plasticity, Phase Transformation, and Damage Steiner, Aaron Steiner, Aaron Bhattacharya, Kaustav (California Institute of Technology, United States) none

D5 2:40pm 1003 Mechanics of Solids and Structures 2:40pm 2:40pm Glaucio Paulino Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Deformation Designing electrically tough materials Hong, Wei Hong, Wei none

D5 2:40pm 1014 Mechanics of Solids and Structures 2:40pm 2:40pm Glaucio Paulino Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Deformation Modeling of internal contact in cellular solids and reticulated structures for simulation of collapse, Wong, Josep Wong, Josep-Miguel; Wong, Josep-Miguel Prakash, Arun (Purdue University, United States)

D5 2:40pm 762 Mechanics of Solids and Structures 2:40pm 2:40pm Glaucio Paulino Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Deformation Fully coupled multi-scale modeling of cohesive failure in heterogeneous interfaces using high performance computing Mosby, Matthew Mosby, Matthew Matouz, Karel (University of Notre Dame, United States) none

D5 2:40pm 1029 Mechanics of Solids and Structures 2:40pm 2:40pm Glaucio Paulino Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Deformation EFFECT OF OVERWEIGHT TRUCKS AND NATURAL ylims ON DURABILITY OF CONCRETE Liu, Boyuan Liu, Boyuan Cha, Hun (Purdue University, Korea; Republique of); Prakash, Arun (Purdue University, United States) none

D6 140 C Sam Daly, Leslie Lambersen 1:40 1062 Mechanics of Solids and Structures 1:40 1:40 Sam Daly, Leslie Lambersen Mechanics of Multifunctional Materials and Structures Modeling of Heat transfer and material flow in friction extrusion process Zhang, Hongsheng Zhang, Hongsheng none

D6 2:00 1072 Mechanics of Solids and Structures 2:00 2:00 Sam Daly, Leslie Lambersen Mechanics of Multifunctional Materials and Structures Designing the energy landscape of folded structures Waikutakis, Scott Waikutakis, Scott van Hecke, Martin (University of Leiden, Netherlands) none

D6 2:40 1076 Mechanics of Solids and Structures 2:40 2:40 Sam Daly, Leslie Lambersen Mechanics of Multifunctional Materials and Structures Design of multifunctional materials for solar energy harvesting and conversion (invited) Tan, Marcus Hwai Yik Tan, Marcus Hwai Yik Najafi, Ahmad R.; Safarzad, Masoud; Guellibe, Philippe H. (University of Illinois, Urbana-Champaign; United States) none

D6 2:40 1106 Mechanics of Solids and Structures 2:40 2:40 Sam Daly, Leslie Lambersen Mechanics of Multifunctional Materials and Structures Design of high temperature microcomposite composites Dynamic Electromechanical Behavior of Lead Free Piezoceramics Lambersen, Leslie Lambersen, Leslie none

D8 1:40 774 Mechanics of Solids and Structures 1:40 1:40 M Taher Saff, saff@illinois.edu Mechanics of Thin Films and Multi-layer Materials KEYNOTE: Molecular thinning of thin film/substrate interfaces using self-assembled monolayers Geubelle, Philippe Geubelle, Philippe Zhan, Chen; Awasthi, Amnya; Grady, Matia; Sottos, Nancy

D8 2:00 1047 Mechanics of Solids and Structures 2:00 2:00 M Taher Saff, saff@illinois.edu Mechanics of Thin Films and Multi-layer Materials Crack Propagation in Thermal Barrier Coating Systems Seiler, Philipp Seiler, Philipp Bäker, Martin; Rösler, Joachim (TU Braunschweig, Germany)

D8 2:40 727 Mechanics of Solids and Structures 2:40 2:40 M Taher Saff, saff@illinois.edu Mechanics of Thin Films and Multi-layer Materials Deformation and failure analysis of pin-torsion based thermal runway evaluation method of Li Xiu, Xuyi Xiu, Xuyi Li, Tianle (Florida State University, United States); Ren, Fei (Temple University, United States)

D9 1:40 664 Mechanics of Solids and Structures 1:40 1:40 Darren Pagan <dpagan@cornell.edu> Mechanics of Solids and Structures Experiments on Mechanical Behavior Uniqueness Deformation Mechanisms of an Ultra-High Strength Metal and Designing Experiments and Experiments on Mechanical Behavior Steiner, Aaron Steiner, Aaron Balogh, Levente (Queens University, Canada); Yu, Qian; Minar, Andrew (University of Pennsylvania, United States)

D9 2:00 694 Mechanics of Solids and Structures 2:00 2:00 Darren Pagan <dpagan@cornell.edu> Mechanics of Solids and Structures Experiments on Mechanical Behavior Mechanical Response of Salt Irradiated Single Crystal, FCC Micropillars Hattar, K. Hattar, K. Jiang, X.; He, M. (University of Pennsylvania, United States) none
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<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker/Institution</th>
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<tr>
<td>14:20</td>
<td>Session on Materials Science</td>
<td>Aghaei, Amin</td>
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<td>14:40</td>
<td>Session on Materials Science</td>
<td>Aghaei, Amin</td>
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<td>1:40PM</td>
<td>Cloud computing in nanohub</td>
<td>Marisoli Koslowski</td>
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<td>2:20PM</td>
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<td>3:30PM</td>
<td>Session on Biomechanics</td>
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<td>3:30PM</td>
<td>Stochastic Virtual Tests for Fiber Composites</td>
<td>Cox, Brian</td>
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<td>Multiscale characterization of DPMB steels for automotive applications</td>
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<td>Fracture Stiffness: The Link among Fracture Properties</td>
<td>Pyrek-Nolet, Laura</td>
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<td>A Potential Energy Surface Based Atomic Model for the Unfolding of Protein at Experimental Timescales</td>
<td>Park, Harold</td>
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<td>Effect of PEG conjugation on entropy driven self-assembly of coiled colds</td>
<td>Hamed, Elham</td>
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<td>Kinetics vs. thermodynamics dichotomy and growth mechanisms in linear self-assemble of mixed</td>
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<td>Quantifying Cooperativity in Mutated Collagen</td>
<td>Cranford, Steven</td>
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<td>Effect of Implant Design and Material on Subsidence Following Dynamic Loading of Intervertebral Devices</td>
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<td>Fracture Stiffness: The Link among Fracture Properties</td>
<td>Pyrek-Nolet, Laura</td>
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<td>4:30PM</td>
<td>A Potential Energy Surface Based Atomic Model for the Unfolding of Protein at Experimental Timescales</td>
<td>Park, Harold</td>
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<td>4:30PM</td>
<td>Effect of PEG conjugation on entropy driven self-assembly of coiled colds</td>
<td>Hamed, Elham</td>
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<tr>
<td>4:30PM</td>
<td>Kinetics vs. thermodynamics dichotomy and growth mechanisms in linear self-assemble of mixed</td>
<td>Ruiz, Lisen, Sinan</td>
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<td>4:30PM</td>
<td>Quantifying Cooperativity in Mutated Collagen</td>
<td>Cranford, Steven</td>
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<tr>
<td>4:30PM</td>
<td>Effect of Implant Design and Material on Subsidence Following Dynamic Loading of Intervertebral Devices</td>
<td>Valdevit, Antonio</td>
</tr>
</tbody>
</table>
T4 214 B Ahmed Elbanna (elbanna2@illinois.edu) 3:30 PM 769 Biological and Biomimetic Materials tissues: Modeling, Experimental Characterization, and Design The Potential Within: Topology Optimization of the Bone Peetz, Darin Elbanna, Ahmed Peetz, Darin (University of Illinois at Urbana-Champaign, United States)

T4 214 B Ahmed Elbanna (elbanna2@illinois.edu) 3:50 PM 974 Biological and Biomimetic Materials tissues: Modeling, Experimental Characterization, and Design From Butter to Bone Tissues: Assessing the Fracture Resistance via Scratch Testing Akono, Ange-Therese Akono, Ange-Therese None

T4 214 B Ahmed Elbanna (elbanna2@illinois.edu) 4:10 PM 1215 Biological and Biomimetic Materials tissues: Modeling, Experimental Characterization, and Design Crack Propagation in Bone on the Scale of Mineralized Collagen Fibers: Role of Polymers with Elbanna, Ahmed Elbanna, Ahmed Wang, Wenyi (IJUI, United States)

T4 214 B Ahmed Elbanna (elbanna2@illinois.edu) 4:30 PM 1223 Biological and Biomimetic Materials tissues: Modeling, Experimental Characterization, and Design Tissue Statistics: Mechanics and Size-Topology Correlations Hilgenfeld, Sascha Hilgenfeld, Sascha Kim, Sangwoo, Cai, Myun University of Illinois at Urbana-

T4 214 D Daphalapurkar, Nitin 3:30 PM 682 Mechanics of Solids and Structures Computational Fracture Mechanics Failure of brittle heterogeneous materials: Interfacial or continuum regime Banes, Jonathan Banes, Jonathan Bonamy, Daniel (CEA, Saclay, France)


T4 214 D Daphalapurkar, Nitin 4:10 PM 711 Mechanics of Solids and Structures Computational Fracture Mechanics Fracture Simulation using a Non-local Particle Model Chen, Haolong Chen, Haolong Liu, Yongming (Arizona State University, United States)

T4 218 A Richard Lesar - lesar@iastate.edu 15:30pm 619 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation Kinetics of a fast moving twinning dislocation (Invited) Daphalapurkar, Nitin Daphalapurkar, Nitin Wilkerson, J.W.; Wright, T.W.; Ramach, R.T. (Johns Hopkins University, United States)

T4 218 A Richard Lesar - lesar@iastate.edu 15:50pm 773 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation Microscopic phase field and Peterli-Nabarbo modeling of dislocation dissociation, glide and Zwack, Bob Zwack, Bob None

T4 218 A Richard Lesar - lesar@iastate.edu 16:10pm 930 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation Twin Boundary Stability (Invited) Wright, Thomas Wright, Thomas Daphalapurkar, Nitin; Ramach, RT (Johns Hopkins University, United States)

T4 218 A Richard Lesar - lesar@iastate.edu 16:30pm 801 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformation An efficient continuum model for the slip-twinning transformation Chang, Yingrui Chang, Yingrui Kochmann, Dennis (California Institute of Technology, United States)

T4 218 D Bo Li 3:30pm 754 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Understanding grain boundary embrittlement and its correlation with polycrystalline tungsten fracture Tomar, Vikas Tomar, Vikas Vurik, Pardus University West Lafayette, United States

T4 218 D Bo Li 3:50pm 759 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Effect of Viscoelasticity in HMX Grains on Ignition Probability of Dynamically Loaded PBX Hardin, David Hardin, David Zhou, Min (Georgia Institute of Technology, United States)

T4 218 D Bo Li 4:10pm 943 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Resolving the evolution of microstructures in 3D laser welds Foulis, James Foulis, James None

T4 218 D Bo Li 4:30pm 899 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Cavitaiton in Rubber: An Elastic Instability or a Fracture Phenomenon? Lefevre, Victor Lefevre, Victor Lopez-Pamies, Oscar (University of Illinois at Urbana-Champaign, United States)

T4 218 D Bo Li 4:50pm 1115 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Simulation of the Misorientation Evolution in Polymor Matrix Composites Safdari, Mostafa Safdari, Mostafa Raos, Najaf, Ahmad; Sottos, Nancy R.; Geubelle, Philippe H. (University of Illinois at Urbana-Champaign, United States)

T4 218 C Trisha Sain, David Restrepo 1530 1089 Mechanics of Multifunctional Materials and Structures Constitutive modeling and characterization of nanocomposite hydrides for blunt resistant materials Sain, Trisha Sain, Trisha (North Carolina A & T State University, United States)

T4 218 C Trisha Sain, David Restrepo 1550 1117 Mechanics of Multifunctional Materials and Structures PHASE TRANSFORMING CELLULAR MATERIALS Restrepo, David Restrepo, David Makino, Naoh; General Motors Research & Development, United States; Zavattieri, Pablo (Purdue University, United States)

T4 218 C Trisha Sain, David Restrepo 1610 1120 Mechanics of Multifunctional Materials and Structures An Interface-Enriched Generalized Finite-Element Method for Efficient Electromagnetic Analysis of Composite Materials Zhang, Ked Zhang, Ked Naji, Ahmad; Jin, Jian-Ming; Geubelle, Philippe H. (University of Illinois at Urbana-Champaign, United States)

T4 218 C Trisha Sain, David Restrepo 1630 1130 Mechanics of Multifunctional Materials and Structures Thermomechanical Characterization of Actively Cooled Vascularized Composites Coppola, Anthony Coppola, Anthony Sottes, Nancy, White, Scott (University of Illinois, United States)

T4 218 C Trisha Sain, David Restrepo 1650 1143 Mechanics of Multifunctional Materials and Structures Shape optimization of microvascular composite used in active cooling applications Raissi Najafi, Ahmad Raissi Najafi, Ahmad Tavan, Marcus; Sottos, Nancy R.; Geubelle, Philippe H. (University of Illinois at Urbana-Champaign, United States)

T4 206 Rui Huang, ruihuang@mail.uta.edu 3:30pm 838 Mechanics of Solids and Structures Mechanics of Thin Films and Multi-layer Materials KEYNOTE: Interfacial Mechanics of Graphene Zhu, Yong Zhu, Yong None

T4 206 Rui Huang, ruihuang@mail.uta.edu 4:10pm 1218 Mechanics of Solids and Structures Mechanics of Thin Films and Multi-layer Materials Strain Rate Dependence of Yield Stress and Early Bauchinger Effect in Nanoscale Aluminum Films with Cai, Muyun Cai, Muyun Rajagopalan, Jagannathan (Arizona State University, United States)

T4 206 Rui Huang, ruihuang@mail.uta.edu 4:30pm 1192 Mechanics of Solids and Structures Mechanics of Thin Films and Multi-layer Materials Fluctuating the kinetics of two boundaries from thermal fluctuations Kulkarni, Vaishnavi Kulkarni, Vaishnavi Yashashee, Chen, Dongfa (University of Houston, United States)

T4 206 Rui Huang, ruihuang@mail.uta.edu 4:50pm 955 Mechanics of Solids and Structures Mechanics of Thin Films and Multi-layer Materials Nonlinear Wave Propagation in Periodic Multilayer of Polymers Wang, Pai Wang, Pai Casadei, Filippo; Bortkaj, Katie (Harvard University, United States)

T4 206 Rui Huang, ruihuang@mail.uta.edu 5:10pm 994 Mechanics of Solids and Structures Mechanics of Thin Films and Multi-layer Materials Buckling of stiff thin film on free-standing bi-layer substrate Cheng, Huanyu Cheng, Huanyu Huang, Mengyang (Hong Kong University of Science and Technology, China)

T4 306 Jason Geathers <jgeather@umich.edu> 3:30 PM 1265 Mechanics of Solids and Structures Microscale and Microstructural Effects on Mechanical Behavior Modeling the Interface Formation and Morphology within Cu/Nb Layered Composites with Heterogeneous Deformation in Alpha-Ti Alloys at the Microscale Bronkhorst, Curt Bronkhorst, Curt None

T4 306 Jason Geathers <jgeather@umich.edu> 3:50 PM 879 Mechanics of Solids and Structures Microscale and Microstructural Effects on Mechanical Behavior Unloading Material Instability and the Accuracy of Homogenization Theory in Polycrystalline Bishop, Joseph Bishop, Joseph None

T4 306 Jason Geathers <jgeather@umich.edu> 4:10 PM 1252 Mechanics of Solids and Structures Microscale and Microstructural Effects on Mechanical Behavior Predictive Microstructural Evolution viaLocalized Strain Dependence Measurements Using Correlated Tabei, Mitra Tabei, Mitra None

T4 306 Jason Geathers <jgeather@umich.edu> 4:30 PM 971 Mechanics of Solids and Structures Microscale and Microstructural Effects on Mechanical Behavior Heterogeneous Deformation in Alpha-Ti Alloys at the Microscale Chen, Zhe Chen, Zhe Allison, John; Daly, Samantha (University of Michigan, United States)

T4 306 Jason Geathers <jgeather@umich.edu> 4:50 PM 978 Mechanics of Solids and Structures Microscale and Microstructural Effects on Mechanical Behavior Lattice Strain Evolution in Polycrystalline Materials and Comparison to Advanced Diffraction Pu, Chao Pu, Chao None

T4 311 David Henaren (david.henaren@brown.edu) 3:30 pm 785 Mechanics of Solids and Structures Multiscale Mechanics of Particulate Media Shear-rate independent collisional diffusion in granular materials Umbanhowar, Paul B. Umbanhowar, Paul B. Umbanhowar, Paul B. Fan, Yi (The Dow Chemical Company, United States); Ottino, Julie M. (University of Illinois at Urbana-Champaign, United States)

T4 311 David Henaren (david.henaren@brown.edu) 3:30 pm 785 Mechanics of Solids and Structures Multiscale Mechanics of Particulate Media Shear-rate independent collisional diffusion in granular materials Umbanhowar, Paul B. Umbanhowar, Paul B. Umbanhowar, Paul B. Fan, Yi (The Dow Chemical Company, United States); Ottino, Julie M. (University of Illinois at Urbana-Champaign, United States)
<table>
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<tr>
<th>Time</th>
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<th>Speaker(s)</th>
<th>Title</th>
<th>Description</th>
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<th>Notes</th>
</tr>
</thead>
</table>
| 3:50pm | D11  | David Henann | Mechanics of Solids and Structures                                    | Shear Softening above Jamming                                             | Coulais, Corentin | Coulais, Corentin
|       |      | [david_henann@brown.edu] | | | | Seguin, Antoine (Paris Sud University, FAST Lab, France) | |
| 4:10pm | D11  | David Henann | Mechanics of Solids and Structures                                    | Imaging Forces in a Three-Dimensional Granular Material                    | Bares, Jonathan | Bares, Jonathan
|       |      | [david_henann@brown.edu] | | | | Dijkman, Joshua (Wageningen UR, Netherlands); Broda, Nicolas (INRIA) | |
| 4:30pm | D11  | David Henann | Mechanics of Solids and Structures                                    | "Buoyancy" in Granular Medium: How deep can an object sink in sand?        | Chand, Ram | Shi, Qingfan
|       |      | [david_henann@brown.edu] | | | | Chandi, Ram (University of Malaya, Malaysia); Xu, Kun (Chinese Academy of Sciences) | |
| 3:30 PM | D12  | Gerardo Callegari | Chemicals and Structures.                                              | Optimum drug dissolution time in an intermediate compartment associated with different competing | Callegari, Gerardo | Callegari, Gerardo
|       |      | [gerardo_callegari@purdue.edu] | | | | Pastrana, Isamar (University of Puerto Rico at Mayaguez, United States) | |
| 3:50 PM | D12  | Gerardo Callegari | Chemicals and Structures.                                              | Modeling of Disintegration and Dissolution of Food Additives.              | Gabronenko, Nikolay | Gabronenko, Nikolay
|       |      | [gerardo_callegari@purdue.edu] | | | | None | |
| 4:30 PM | D12  | Gerardo Callegari | Chemicals and Structures.                                              | "Forming" of roll flow and layer flow in steady shear flow and application in food process. | Gabronenko, Nikolay | Gabronenko, Nikolay
|       |      | [gerardo_callegari@purdue.edu] | | | | None | |
| 3:30 PM | D15A | Zhu, Yong; Case, Jennifer | Soft Materials and Structures.                                         | Materials for Soft Robotic Applications                                    | Case, Jennifer | case15@purdue.ed u |
|       |      | [yong_zhu@ncsu.edu] | | | | White, Edward; Kramer, Rebecca (Purdue University, United States) | |
| 3:50 PM | D15A | Zhu, Yong; Case, Jennifer | Soft Materials and Structures.                                         | Stretchable Electronics based on One-Dimensional Nanomaterials             | Zhu, Yong | yong_zhu@ncsu.edu |
|       |      | [yong_zhu@ncsu.edu] | | | | Yao, Shanshan; Miyers, Amanda; Cui, Zheng (North Carolina State University, United States) | |
| 4:30 PM | D15A | Zhu, Yong; Case, Jennifer | Soft Materials and Structures.                                         | Processing Liquid Metal for Conformable Electronics                       | Boley, J. William | awlliamboley@gmai l.com |
|       |      | [jwlliamboley@gmai l.com] | | | | White, Edward L.; Lear, Trevor R.; Chu, George T.-C.; Kramer, Rebecca K. (Purdue University, United States) | |
| 3:30 PM | D15B | Chi Heng, Li bo | Mechanics of Solids and Structures                                    | Polygonal finite elements for finite elasticity                            | Chi, Heng | hengch2@illinois.e du |
|       |      | [chi_heng@illinois.edu] | | | | Talisch, Cameron; Lopez-Farias, Oscar; Paulino, Glacie (UI of I urbana-Champaign, United States) | |
| 3:50 PM | D15B | Chi Heng, Li bo | Mechanics of Solids and Structures                                    | Textile-based active-sensory skins                                         | Yuen, Michelle | yuen.michelle.co m |
|       |      | [chi_heng@illinois.edu] | | | | Kramer, Rebecca (Purdue University, United States) | |
| 4:10 PM | D15B | Chi Heng, Li bo | Mechanics of Solids and Structures                                    | SpiderWeb honecomb                                                         | Mouseaneshad, Davood | davood.mousane shad@gmail.com |
|       |      | [chi_heng@illinois.edu] | | | | Ebrahimi, Hamid; Namani, Babak; Ghosh, Ranajay; Ajdari, Amir; Vaziri, Ashkan (Northeastern University, United States) | |
| 3:30 PM | D15B | Chi Heng, Li bo | Mechanics of Solids and Structures                                    | Evolutionary electromechanical stability in viscoelastic dielectrics under constant loads | Li, BO | biancolee@gmail.co m |
|       |      | [chi_heng@illinois.edu] | | | | Taltiseh, Cameron; Lopez-Faries, Oscar; Paulino, Glacie (UI of Urbana-Champaign, United States) | |
| 3:30 PM | D16  | Hart, Kevin  | Mechanics of Solids and Structures                                    | Self-healing of an epoxy matrix using latent 2-ethyl-4- methylylindaninitiator | Hart, Kevin | Hart, Kevin
|       |      | [hku@brown.edu] | | | | none | |
|       |      | [hku@brown.edu] | | | | none | |
|       |      | [hku@brown.edu] | | | | Matouz, Karei (University of Notre Dame, United States) | |
| 3:30 PM | D16  | Hart, Kevin  | Mechanics of Solids and Structures                                    | General Session. A predictive multiscale computational framework for viscoelastic properties of polymeric materials | Li, Ying | Li, Ying
|       |      | [hku@brown.edu] | | | | none | |
| 4:50 PM | D16  | Hart, Kevin  | Mechanics of Solids and Structures                                    | ON THE DEVELOPMENT AND PERFORMANCE OF MULTI-TIME-STEP COUPLING METHODS FOR | Karimi, Saed | Karimi, Saed
|       |      | [hku@brown.edu] | | | | Nakahara, Takuya (Babu University, United States) | |
| 15:30pm | E4   | Ghadir Haikal | Mechanical science                                                    | Theoretical analysis of nanoindentation hardness and pop-in behavior: Variation as a characterization tool. | Maughan, Michael | Maughan, Michael
|       |      | [ghai kal@purdue.edu] | | | | Bahr, David (Purdue University, United States) | |
| 15:50pm | E4   | Ghadir Haikal | Mechanical science                                                    | Investigation of the elastic distortion fields for deformed FCC crystals: Discrete distortion dynamics | Ahmed, Karim | El-Azab, Antar
|       |      | [ghai kal@purdue.edu] | | | | None | |
| 16:10pm | E4   | Ghadir Haikal | Mechanical science                                                    | An Efficient Hybrid 2D/3D Thin Film Discrete Dislocation Dynamics         | Sarrafan, Siavash | Sarrafan, Siavash
|       |      | [ghai kal@purdue.edu] | | | | Fertig, Ray (University of Wyoming, United States) | |
| 16:30pm | E4   | Ghadir Haikal | Mechanical science                                                    | Kinetic Monte Carlo enabled modeling of diffusion assisted plastic deformation | Martinio, James | Martinio, James
|       |      | [ghai kal@purdue.edu] | | | | Martinio, James (Northeastern University, United States) | |
| 16:50pm | E4   | Ghadir Haikal | Mechanical science                                                    | Investigation of deformation twins using a DFT-informed 3D phase field dislocation dynamics (PFDD) | Hunter, Abigail | Hunter, Abigail
|       |      | [ghai kal@purdue.edu] | | | | Beyeler, Irene (Los Alamos National Laboratory, United States) | |
| 3:30 PM | H1    | Tanya Faltens | nanohub | Cloud computing in nanohub power engineering and research | minmol: A Minimal Molecular Dynamics Program using the knowledgebase of Interatomic Models | Eilad Radm | Eilad Radm
|       |      | [tanya_faltens@brown.edu] | | | | Ryan Elliott and Ronal Miller | |
| 3:50 PM | H1    | Tanya Faltens | nanohub | Cloud computing in nanohub power engineering and research | Nano plasticity laboratory | Mariol Koslowski | Mariol Koslowski
|       |      | [tanya_faltens@brown.edu] | | | | M. Hunt, Iai Cao, A. Strachan | |
| 4:10 PM | H1    | Tanya Faltens | nanohub | Cloud computing in nanohub power engineering and research | Coarse-Grained Model of RF MEMS Devices | Alina Alexeenko | Alina Alexeenko
|       |      | [tanya_faltens@brown.edu] | | | | None | |
| 4:30 PM | H1    | Tanya Faltens | nanohub | Cloud computing in nanohub power engineering and research | nanohub Tutorial and open house | Tanya Faltens | Tanya Faltens
<p>|       |      | [<a href="mailto:tanya_faltens@brown.edu">tanya_faltens@brown.edu</a>] | | | | None | |</p>
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<tr>
<th>Time</th>
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<th>Venue</th>
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<tr>
<td>9:00 AM</td>
<td>F1 A</td>
<td>Fowler Hall</td>
<td>Honor Symposia</td>
<td>John Rudnick's Symposium: Recipient of Engineering Science</td>
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<tr>
<td>9:10 AM</td>
<td>F1 A</td>
<td>Fowler Hall</td>
<td>Honor Symposia</td>
<td>John Rudnick's Symposium: Recipient of Engineering Science</td>
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<tr>
<td>9:30 AM</td>
<td>F1 C</td>
<td>318</td>
<td>Biological and Biomemetic Materials</td>
<td>Computational modeling approach to predicting the shape and mechanical properties of DNB-based properties.</td>
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<td>9:40 AM</td>
<td>F1 C</td>
<td>318</td>
<td>Biological and Biomemetic Materials</td>
<td>Biochemical Comparison Of Fatigue And Load Bearing Performance Of Elastic Stable Intradimensional Nailing</td>
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<td>9:50 AM</td>
<td>F1 C</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Mechanical load assisted dosis response of biomedical cobalt-chromium and titanium metallic alloys: Influence of in-plane stress and chemical environment</td>
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<td>10:00 AM</td>
<td>F1 C</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Flexible Growing Rods: Polymer Rods Provide Stability to Skeletal Immature Spines</td>
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<td>10:30 AM</td>
<td>F1 C</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Spatial and Depth Dependent Viscoelastic Behavior of Articular Cartilage</td>
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<td>10:40 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>A study of deformation and phase transformation coupling for TRIP-assisted steels.</td>
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<tr>
<td>10:50 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>XFEM based transient dynamic fracture analysis in multifield coupled smart materials</td>
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<td>11:00 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>ON A COMPUTATIONAL FRAMEWORK TO MODEL MATERIAL DEGRADATION DUE TO MOISTURE,</td>
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<td>11:10 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>A General Cohesive Continuum Mechanics Framework for Constitutive Modeling of Micro-Damage Healing</td>
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<td>11:20 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Microvascular Composites for Integrated Battery Packaging and Cooling</td>
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<td>11:30 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Mechano- and Thermo-Mutable Amorosity of 3D Porous Multifunctional Bone Nitre Nanostructures</td>
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<tr>
<td>11:40 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Non-linear analysis of multilayer composite pipes</td>
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<td>11:50 AM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Stress Evolution of Anodic Alumina Films Prior to the Pore Formation</td>
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<td>12:00 PM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Computing Third-Order Models of Effective Material Behavior for Polydopamine Particulate Composites</td>
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<td>12:10 PM</td>
<td>F1 D</td>
<td>214 A</td>
<td>Orthopaedic Bioengineering - Nano-Science to Device Level</td>
<td>Consideration of different hardening mechanisms in a higher-order crystal plasticity theory</td>
</tr>
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</table>
F2 214 A 10:40 AM 812 Biological and Biomimetic Materials Orthopaedic Bioengineering - NanoScience to Device Level Wear characteristics of 85U Total Ankle Replacement under Shear and Torsion loads Gundapaneni, Dinesh Gundapaneni, Dinesh Goswami, Tanus (Wright State University, United States)

F2 214 A 11:00 AM 1200 Biological and Biomimetic Materials Orthopaedic Bioengineering - NanoScience to Device Level Knee Loading for Abnormal Gait Hutchison, J. Hutchison, J. Madsen, D.; Norman, T. L. (Cedarville University, United States); Blaha, J. D. (University of Michigan, United States)

F2 214 A 11:20 AM 1297 Biological and Biomimetic Materials Orthopaedic Bioengineering - NanoScience to Device Level Anterior Cruciate Ligament Biomechanics: Characterization and Computational Modeling within a Full Knee Model Mallett, Kaitlyn Mallett, Kaitlyn Arruda, Ellen (University of Michigan, United States)

F2 214 A 11:40 AM 872 Biological and Biomimetic Materials Orthopaedic Bioengineering - NanoScience to Device Level Methods to determine the volume of infrapatellar fat pad as an indicator of anterior cruciate ligament tear Cheruvu, Bharadwaj Cheruvu, Bharadwaj Tatsalis, James; Laughlin, Richard (Miami Valley Hospital, United States); Goswami, Tanus (Wright State University, United States)

F2 214 A 12:00 PM 748 Biological and Biomimetic Materials Orthopaedic Bioengineering - NanoScience to Device Level RAMAN THERMOMETRY BASED THERMAL CONDUCTIVITY MEASUREMENT OF BOVINE CORTICAL BONE AS A FUNCTION OF COMPRESSIVE STRESS Tomar, Vikas Zhang, Yang Tomar, Vikas (Purdue University West Lafayette, United States)

F2 D3 218 A 10:40am 1006 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformations Enhancing ductility of Ultra-High-Strength Metal-Ceramic Laminate Composites (Invited) Pathak, Sid Pathak, Sid Zheng, Shipian; Mara, Nathan; Bayerl, Inna (Los Alamos National Laboratory, United States)

F2 D3 218 A 11:00am 1086 Mechanics of Solids and Structures Coupling Plasticity and Phase Transformations Plasticity Induced phase transformation in molecular crystals (Invited) Kosowski, Marisol Kosowski, Marisol None

F2 D5 218 D 10:40am 921 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Fragmentation Non-local regularizion for loss of ellipticity in a non-linear plasticity formulation Mota, Alejandro Mota, Alejandro Fouik, James; Osten, Jakob (Sandia National Laboratories, United States)

F2 D5 218 D 11:00am 1273 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Fragmentation Using Geometrically, Topologically and Materially Unstructured Methods to Reduce Mesh Dependency Spring, Daniel Paulino, Glaucio None

F2 D5 218 D 11:20am 1267 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Fragmentation Conjugate-directions meshes for cohesive elements: the role of cohesive zone model Rimali, Julian Rimali, Julian J. Mota, Alejandro; Fouik, James; Osten, Jakob (Sandia National Laboratories, United States)

F2 D5 218 D 11:40am 895 Mechanics of Solids and Structures Issues in Computational Modeling of Damage, Fracture and Fragmentation Multiscale Experimental Investigation and Numerical Simulation of Deformation and Failure in Graphene and Carbon Nanotubes Shahrmannezhad, Ali Shahrmannezhad, Ali Rae-Chandari, Krishnamoorthy (University of Texas at Austin, United States)

F2 d6 214 C 10:40 1260 Mechanics of Solids and Structures Mechanics of Multifunctional Materials and Structures CRYSTALLIZABLE TRIPLE SHAPE MEMORY POLYMERS: CONSTRUCTIVE MODELING AND NUMERICAL SIMULATIONS moon, snapfili moon, snapfili Rao, I. Joga; Chester, Shawn A. (New Jersey Institute of Technology, United States)

F2 d6 214 C 11:00 1277 Mechanics of Multifunctional Materials and Structures Numerical computation of the effective properties of smart composite materials Brenner, Renald Brenner, Renald None

F2 d6 214 C 11:20 1294 Mechanics of Multifunctional Materials and Structures Influence of the high intensity pulsed electric field on the impact response of carbon fiber reinforced composites Zhzpanska, Olesya Hart, Robert Zhzpanska, Olesya (University of Iowa, United States)

F2 d6 214 C 11:40 1315 Mechanics of Multifunctional Materials and Structures A Computational Analysis of a Cycle of Thermal Phase Transformation in Bacterial Cell Wall Bhattarcharya, Abhijit Bhattarcharya, Abhijit Ozturr, Mehmet M. (University of Technology, United States)

F2 d6 214 C 12:00PM 819 Mechanics of Multifunctional Materials and Structures Mechanics of Multifunctional Materials and Structures Opto-mechanical responses of 3D TO22 package with plastic assured polycrystalline silicon crystal strain sensors Moon, Junghwan Moon, Junghwan Jung, Jingbo (Georgia Institute of Technology, Technology, Korea, Republic); Zhou, Min (Georgia Institute of Technology, United States)

F2 D8 206 10:40am 796 Mechanics of Multifunctional Materials and Structures Mechanics of Thin Films and Multilayer Materials KEYNOTE: Mechanics analysis and design of fractal interconnected stretchable batteries Huang, Yonggang Huang, Yonggang None

F2 D8 206 11:20am 980 Mechanics of Multifunctional Materials and Structures Mechanics of Thin Films and Multilayer Materials Mechanical fracture behavior of cellulosic-bases multilayer laminate Liu, Jen-Chieh Youngblood, Jeffrey Liu, Jen-Chieh (Purdue University, U.S.A.); Moon, Robert (US Forest Service, United States)

F2 D8 206 11:40am 984 Mechanics of Multifunctional Materials and Structures Mechanics of Thin Films and Multilayer Materials Size effects of mechanical response in thin film samples vs. bulk - molecular dynamics simulation Kim, Hojin Kim, Hojin Strachan, Andrew (Purdue University, United States)

F2 D8 206 12:00pm 1283 Mechanics of Multifunctional Materials and Structures Mechanics of Thin Films and Multilayer Materials Stress-function variational method for interface stress analysis of bonded and adhesive bonded Wu, Xiangli Wu, Xiangli None

F2 D9 306 10:40am 1110 Mechanics of Multifunctional Materials and Structures Microscale and Microstructural Effects on Mechanical Behavior Damage-growth-induced Evolution of Contact Resistance of a RF MEMS Switch Wu, Yu-Chao Yu-Chao Yang, Wei; Peroulis, Dimitrios (Purdue University, United States)

F2 D9 306 11:00am 847 Mechanics of Multifunctional Materials and Structures Microscale and Microstructural Effects on Mechanical Behavior Effect of alumination on g sensitvity of PZT Kim, Seokpum Kim, Seokpum Hong, Yawondale (Korea Research Institute of Chemical Technology, United States); Zhou, Min None

F2 D9 306 11:20am 1136 Mechanics of Multifunctional Materials and Structures Microscale and Microstructural Effects on Mechanical Behavior ULTRASOUND MATERIALS THROUGH SURFACE HEAT TREATMENT Shrivati, Pranav Membbari, Ammar Wu, Zhuoru; Shrivati, Pranav; Zhao, Jingming (Iowa State University, United States)

F2 D11 313 10:40am 1227 Mechanics of Multifunctional Materials and Structures Multiscale Mechanics of Particulate Media Metoscale Modeling (of Granular Medium) Using Grain Fracture Using Grain Morphology Tumer, Anne Tumer, Anne Kim, Fakhrul (University of Tennessee - Knoxville, United States); Penumadu, None

F2 D11 313 11:00am 563 Mechanics of Multifunctional Materials and Structures Multiscale Mechanics of Particulate Media Microscopic origin of macroscopic strength in granular media Jerjes, Alex Jerjes, Alex Andrade, Jose (California Institute of Technology, United States)

F2 D11 313 11:20am 625 Mechanics of Multifunctional Materials and Structures Multiscale Mechanics of Particulate Media Flow of Granular Material with Sharp Slip Boundary Condition Zhao, Xinran Zhao, Xinran None

F2 D11 313 11:40am 1208 Mechanics of Multifunctional Materials and Structures Multiscale Mechanics of Particulate Media Experimental assessment of fracture of individual sand particles at different loading rates Parab, Nitin Parab, Nitin Claus, Benjamin; Hudspeth, Matthew; Sun, Jianhuo (Purdue University, United States)


F2 D12 320 11:00AM 960 Mechanics of Solids and Structures Pharmaceutical solids: Synthesis, Manufacturing, Characterization and Performance Study of Therapeutic Time-domain Measurement to Monitor Individual Layer Thickness Wang, Yifan Wang, Yifan Heaps, David (Advanced America, United States); Muzzio, Fernando; None


F2 012 320 Marisol Kosowsky 12:00 PM 675 Mechanics of Solids and Structures Pharmaceutical solids: Synthesis, Manufacturing, Characterization and PAT Data Management to Enable Advanced Process Monitoring and Control on Hot Melt Extrusion Lines Bruen Docherty, Pamela Bruen Docherty, Pamela None

F2 015 322 Dorfmann, Luis; yu, kai 10:40 AM 1194 Mechanics of Solids and Structures Soft Materials and Structures Stability of active muscle tissue Dorfmann, Luis yu.dorfmann@tufts.edu Paetsch, Chris (Tufts University, United States) Taeyton, Philip; Zhang, Wei (University of Colorado at Boulder, United States); Dunn, Martin I. (Singapore University of Technology and Design, Singapore); Q. H.Jerry (Georgia Institute of Technology, United States)

F2 015 322 Dorfmann, Luis; yu, kai 11:00 AM 679 Mechanics of Solids and Structures Soft Materials and Structures Reprocessing and Recycling of Thermoset Polymers based on Bond Exchange Reaction yu, kai kai-­‐yu@gatech.edu

F2 015 322 Dorfmann, Luis; yu, kai 11:20 AM 1094 Mechanics of Solids and Structures Soft Materials and Structures Characterizing the Elastic Property Distribution of Soft Materials Non-­‐Destructively Goenezen, Sevan sgoenezen@tamu.edu Mei, Yue (Texas A&M University, United States)

F2 015 322 Dorfmann, Luis; yu, kai 11:40 AM 656 Mechanics of Solids and Structures Soft Materials and Structures Determining local mechanical properties of biological scaffolds Tryjanova, Ijennan ijennan@brown.edu Ulm, Franz-­‐Josef (Massachusetts Institute of Technology, United States)

F2 015 322 Dorfmann, Luis; yu, kai 12:00 PM 966 Mechanics of Solids and Structures Soft Materials and Structures Rate-­‐dependent Toughness in Soft Materials via Microscopic Scratch Testing Akons, Ange-­‐Therese akons@illinois.edu Elson, Elliot; Genin, Guy (Washington University in St. Louis, United States)

F2 016 204 Genin, Guy 10:40 AM 1233 Mechanics of Solids and Structures General Session Viscoelastic spectrum analysis and the Identification of a Fung viscoelastic material Genin, Guy Babaee, Behzad Osmanian, Ali (Washington University in St. Louis, United States)

F2 016 204 Genin, Guy 11:00 AM 1234 Mechanics of Solids and Structures General Session Kinematics-based tracking of cells and fluorescent beads using feature vectors Genin, Guy Rowe, Roger Elson, Elliot; Genin, Guy (Washington University in St. Louis, United States)

F2 016 204 Genin, Guy 11:20 AM 1253 Mechanics of Solids and Structures General Session The Effect of Grain Size Distributions on Low-­‐Temperature Creep in a Thin Film Kolls, Peter Kolls, Peter None

F2 016 204 Genin, Guy 11:40 AM 562 Mechanics of Solids and Structures General Session Materials & Mechanics Problem-­‐Based Learning Project for Undergraduates Gipson, Kyle Gipson, Kyle None

F2 016 204 Genin, Guy 12:00 PM 1284 Mechanics of Solids and Structures General Session Implementation of nanoscience and nanotechnology into undergraduate mechanical engineering design Wu, Xiangfa Wu, Xiangfa None

F2 E1 218 C Phanish Suryanarayana (phanish.suryanarayana@ce.gatech.edu) 10:40am 1134 Mechanics in Material Science Ab-­‐initio Methods in the Mechanics of Materials Finite elements for accurate, large-scale quantum mechanical materials calculations: from classical to Paik, John Paik, John None

F2 E1 218 C Phanish Suryanarayana (phanish.suryanarayana@ce.gatech.edu) 11:00am 661 Mechanics in Material Science Ab-­‐initio Methods in the Mechanics of Materials A spectral scheme for ab initio simulations of clusters Banerjee, Amartya Banerjee, Amartya Elliott, Ryan; James, Richard (University of Minnesota, United States)

F2 E1 218 C Phanish Suryanarayana (phanish.suryanarayana@ce.gatech.edu) 11:20am 1183 Mechanics in Material Science Ab-­‐initio Methods in the Mechanics of Materials A Tensor-­‐product approach for large scale electronic structure calculations using Kohn-­‐Sham density functional theory Motamarri, Phani Motamarri, Phani Bleijs, Thomas (Max-­‐Planck-­‐Institute for Mathematics in the Sciences, Germany); Gavini, Vikram

F2 E1 218 C Phanish Suryanarayana (phanish.suryanarayana@ce.gatech.edu) 11:40am 1230 Mechanics in Material Science Ab-­‐initio Methods in the Mechanics of Materials Overcoming the cubic-­‐scaling bottleneck: Linear-­‐ scaling Density Functional Theory Suryanarayana, Phanish Suryanarayana, Phanish None

F2 E1 218 C Phanish Suryanarayana (phanish.suryanarayana@ce.gatech.edu) 12:00pm 775 Mechanics in Material Science Ab-­‐initio Methods in the Mechanics of Materials Coarse-­‐Graining KS-­‐DFT. Pongia, Mauricio Pongia, Mauricio Ortiz, Michael; Bhattacharya`, Kausik (California Institute of Technology, United States)

F2 E4 218 B Abigail Hunter, ahunter@lanl.gov 10:40am 1014 Mechanics in materials science Mesoscale mechanics of materials A Generalized Finite Element Method for bridging fine-­‐scale heterogeneity to the structural scale Plesws, Julia Plesws, Julia Duarte, C. Armando (University of Illinois at Urbana-­‐Champaign, United States)

F2 E4 218 B Abigail Hunter, ahunter@lanl.gov 11:00am 1001 Mechanics in materials science Mesoscale mechanics of materials Micro mechanical modeling of fiber reinforced pervious concrete composites Yang, Mija Yang, Mija None

F2 E4 218 B Abigail Hunter, ahunter@lanl.gov 11:20am 870 Mechanics in materials science Mesoscale mechanics of materials Shape Memory Effect in NiTi Microwires under Shape-Mechanical Cycling Gong, Yue Gong, Yue Daly, Samantha (University of Michigan, United States)

F2 E4 218 B Abigail Hunter, ahunter@lanl.gov 11:40am 867 Mechanics in materials science Mesoscale mechanics of materials A general model for energy and morphology of crystal interfaces Ranulis, Brandon Ranulis, Brandon None

F2 E4 218 B Abigail Hunter, ahunter@lanl.gov 12:00noon 738 Mechanics in materials science Mesoscale mechanics of materials Combined experimental-numerical investigation of ductile fracture toughness of high purity fine-grained nickel through small-­‐size notched tensile specimens Farbanic, Lukasz Farbanic, Lukasz Coquelle, Herve (Necker-­‐Munotrens, France); Orsda, Guy (Paris 13 University, France)