Poster Presentations
2015 Mach Conference
(in alphabetical order by presenter)

Professional Posters

"The Effect of Silicon and Alumina Based Additives on the Densification and Microstructure of Boron Carbide"
Presenter: Kristopher D. Behler
Co-Authors: Jerry C. LaSalvia, David A. Manoukian, Adam Z. Hutchinson III, Victoria L. Blair, Scott D. Walck
Location: P-1

“Simultaneous Internal Deformation Visualization and X-Ray Diffraction of Materials Under Dynamic Deformation In Real Time”
Presenter: Wayne Chen
Co-Authors: Matt Hudspeth, Ben Claus, Niranjan Parab, Kamel Fezzaa, Tao Sun
Location: P-2

"Molecular Simulations of Kevlar Fibrils ”
Presenter: Sanjib Chowdhury
Co-Authors: Bazle Z. (Gama) Haque, Adri C. T. van Duin, Travis A. Bogetti, John W. Gillespie Jr., Subramani Sockalingam
Location: P-3

“Time and space homogenization of viscoelastic-viscoplastic polymer composites under large numbers of cycles”
Presenter: Sarra Haoula
Location: P-4

“Modeling Transverse Impact On UHMWPE Soft Ballistic Sub-Laminate”
Presenter: Bazle Z. (Gama) Haque
Co-Authors: Molla A. Ali, John W. Gillespie Jr.
Location: P-5

“Glass transitions associated with nanodomains in phase-mixed poly(urethane urea) elastomers investigated by solid-state NMR”
Presenter: Weiguo Hu
Co-Authors: Nitin V. Patil, Alex J. Hsieh
Location: P-6

“Simultaneous Temperature and Strain Rate Affects on the Mechanical Properties of Dyneema SK76 Single Fibers”
Presenter: Don Jenket
Location: P-7
“Effect of a composite fabric wrap on damage evolution in ceramic plates”
Presenter: Rune Lausund
Co-Authors: Dennis Rahbek, Bernt Johnsen, Rune Lausund, J. W. Simons, T. Kobayashi, D. A. Shockey
Location: P-8

“Surface constraint effects on ceramic ballistic performance”
Presenter: Jason McDonald
Co-Authors: Sikhanda Satapathy, ARL
Location: P-9

“Synergistic roles of texture and dislocation interactions on plastic anisotropy and formability of face-centered-cubic materials”
Presenter: Minh-Son Pham
Co-Authors: Youngung Jeong, NIST, Adam Creuzinger, NIST, Mark Iadicola, NIST, Anthony Rollett, CMU, Timothy Foeke, NIST
Location: P-10

“Effect of Material Contrast and Crack Length on the Fracture of Functionally Graded Materials”
Presenter: Muhammad Ridwan Murshed
Co-Authors: Shivakumar Ranganathan, Rowan University, Farid Abed, American University of Sharjah
Location: P-11

“Concurrent Velocimetry and Flash X-ray Imaging of Impact and Penetration in Boron Carbide and Silicon Carbide”
Presenter: Brian E. Schuster
Co-Authors: Brady B. Aydelotte, ARL, R. Brian Leavy, ARL, Sikhanda Satapathy, ARL, Michael B. Zellner, ARL, Jerry La Salvia, ARL
Location: P-12

“Dynamic Tensile Response of Boron Carbide Using the Brazilian Disk Method”
Presenter: Matt Shaeffer
Co-Authors: Jamie Hogan, JHU, Lukasz Farbaniec, JHU, KT Ramesh, JHU
Location: P-13

“Probing the Biomechanics of Traumatic Brain Injury on Sub-Cellular Level: Coarse-Grained Molecular Dynamics Simulation of Lipid Membrane”
Presenter: Yelena Sliozberg
Co-Authors: Tanya Chantawansri, ARL
Location: P-14

“Modeling Grain Boundary (Segregation) Engineering at the Nanoscale: Exploiting Micro- and Macro-Scale Interfacial Structure-Property Relationships”
Presenter: Mark Tschopp
Co-Authors: Shawn Coleman, ARL, Jennifer Dunn, ARL, Jane Adams, Todd Beaudet, ARL, Kiran Solanki
Location: P-15
“Deformation and Fracture of Human Hard Tissues: Response at different length scales and loading rates”
Presenter: Tusit Weerasooriya
Co-Authors: Brett Sanborn, ARL, C. Allan Gunnarsson, ARL
Location: P-16

“Development and Implementation of a dislocation emission mediated dynamic ductile failure model”
Presenter: Justin Wilkerson
Co-Authors: Thao Nguyen, UTSA
Location: P-17

“Brittle Beam Fracture and the Transient Flexural Waves Released from the Fracture Point”
Presenter: Fenghua Zhou
Co-Authors: KT Ramesh, JHU
Location: P-18

Student and Postdoc Posters

“Correlating free-volume distribution to plastic deformation of DGEBA via large scale coarse-grained Molecular dynamics simulations”
Presenter: Amin Aramoon
Co-Authors: Stephen Barr, Christopher Woodward, WPAFB, Jaafar El-Awady, JHU
Location: S-1

“Topological Insulator Turned Into a Superconductor”
Presenter: Jaime Arribas Starkey El
Co-Authors: Dereje Seifu, MSU
Location: S-2

“N-doping: A possible route to super-hard boron carbide”
Presenter: Amnaya Awasthi
Co-Authors: Ghatu Subhash, University of Florida, Gainesville
Location: S-3

“A generalized anisotropic damage model for modeling dynamic brittle failure in ceramics”
Presenter: Ravi Sastri Ayyagari
Co-Authors: Nitin Daphalapurkar, JHU, KT Ramesh, JHU
Location: S-4

“Homogenization based Continuum Damage Model for Composites”
Presenter: Shinu Baby  
Co-Authors: Xiaofan Zhang, JHU, Somanth Ghosh, JHU  
**Location:** S-5

"Using computer simulations to predict the growth of L-alanine crystals in the presence of multiple amino acid additives"  
Presenter: Edward Constance  
Co-Authors: Kadir Aslan, Morgan State  
**Location:** S-6

"Incorporation of Silicon in Boron Carbide for the Mitigation of High Pressure Amorphization"  
Presenter: Anthony Etzold  
Co-Authors: Rich Haber, Rutgers  
**Location:** S-7

"Identifying the role of twinning on the hardening behavior of magnesium through discrete dislocation dynamics simulations"  
Presenter: Haidong Fan  
**Location:** S-8

"Micromechanical Modeling of Unidirectional Composites: Role of Interphase and matrix on Dynamic Stress Concentrations around a fiber break"  
Presenter: Raja Ganesh  
Co-Authors: Subramani Sockalingam, Udel, Bazle Haque, Udel, John Gillespie, Jr., Udel  
**Location:** S-9

"In Situ High-Rate Mechanical Testing in the Dynamic Transmission Electron Microscope"  
Presenter: Michael D. Grapes  
Co-Authors: Thomas Voison, Yong Zhang, Melissa K. Santala, Geoffrey H. Campbell, Nicholas J. Lorenzo, Jonathan P. Ligda, Brian E. Schuster, Timothy P. Weihs  
**Location:** S-10

"Modeling dynamic brittle failure using efficiently binned crack families"  
Presenter: Farah Huq  
Co-Authors: Lori Graham-Brady, JHU, Rebecca Brannon, U. Utah  
**Location:** S-11

"Fatigue Strength and Surface Roughness Evolution under Cyclic Loads in FCC Metals through Discrete Dislocation Dynamics Simulations"  
Presenter: Ahmed Hussein  
Co-Authors: Jaafar El-Awady, JHU  
**Location:** S-12
“High Strain Rate Compression of Magnesium Single Crystals along the c-axis”
Presenter: Vignesh Kannan
Co-Authors: KT Ramesh, JHU
Location: S-13

“Dynamic deformation response of a silver-copper unidirectional eutectic alloy”
Presenter: Owen T. Kingstedt
Location: S-14

“The Effect of Strain Rate and Temperature on Microstructural Evolution in Pure Magnesium during ECAE”
Presenter: Nicholas M. Krywopusk
Co-Authors: Laszlo Kecskes, ARL, Timothy Weihs, JHU
Location: S-15

“Characterization of Boron Carbide Fragments subjected to Static and Dynamic Loading”
Presenter: Kanak Kuwelkar
Co-Authors: William Rafaniello, Rich Haber, Rutgers University, Vladislav Dominch, Rutgers
Location: S-16

“Preliminary Results on the Amorphization of Boron Carbide in Dynamic Compression-Shear Experiments”
Presenter: Kimberly Leonard
Co-Authors: James Hogan, JHU, KT Ramesh, JHU
Location: S-17

“Dynamic Micromechanical Analysis of S-glass Fiber Reinforced Epoxy Composite: Experiment and Rate-dependent Damage model”
Presenter: Zhiye Li
Co-Authors: Somnath Ghosh, JHU, Daniel O’Brien, ARL, Nebiyou Gerinet, ARL
Location: S-18

“Anisotropic constitutive relations for wing-crack damage models”
Presenter: Junwei Liu
Co-Authors: Lori Graham-Brady, JHU
Location: S-19

“Rapid Crystallization of Proteins on Silver Thin Films and Iron Nano-columns using Microwave Heating”
Presenter: Kevin Mauge-Lewis
Co-Authors: Kevin Mauge-Lewis, Morgan State, Adeolu Mojibola, Morgan State, Dereje Seifu, Morgan State
Location: S-20
“Magneto-Optics Kerr Effect Study of Fe/MgO/Fe Magnetic Tunnel Junction”
Presenter: Alexander Newmann
Co-Authors: Dereje Seifu, MSU
**Location:** S-21

“Dynamic through-thickness shear characterisation of UHMW polyethylene composite”
Presenter: Long Nguyen
Co-Authors: Maria Luisa Ruiz Ripoli, Fraunhofer EMI, Oliver Millon, Fraunhofer EMI, Werner Riedel, Fraunhofer EMI, Shannon Ryan, Fraunhofer EMI, Ardian Offici, Fraunhofer EMI
**Location:** S-22

"Chain Slip vs. Chain Scission: Finite Length Chains and Yield Mechanisms in Polyethylene Fibers"
Presenter: Thomas C. O’Connor
Co-Authors: Mark Robbins, JHU
**Location:** S-23

“Dynamic Tensile Testing of Magnesium Foils”
Presenter: Jastin Paul
Co-Authors: Jamie Kimberley, NMT
**Location:** S-24

“Processing of Boron-Rich Boron Carbide”
Presenter: William Rafaniello
Co-Authors: William Rafaniello, Rich Haber, Rutgers University
**Location:** S-25

“Electric Field Crystallization of Proteins”
Presenter: Joshua Samba
Co-Authors: Emmanuel Uzoechi, Morgan State, Derick Buckles, Morgan State, Kadir Aslan, Morgan State
**Location:** S-26

"Multiscale modeling of macromolecular dynamics in entangled environments: from first principles to continuum mechanics”
Presenter: Jay Schieber
Co-Authors: Marat Andreev, IIT
**Location:** S-27
“Rate-Dependent Mixed-Mode Fracture Initiation of Human Cortical Bone”
Presenter: Logan Shannahan
Co-Authors: Leslie Lamberson, Drexel, Tusit Weerasooriya, ARL, Brett Sanborn, ARL, Allan Gunnarsson, ARL
Location: S-28

"Transverse Impact and Transverse Compression of Ballistic Fibers"
Presenter: Subramani Sockalingam
Co-Authors: Reid Bremble, John W. Gillespie Jr., Michael Keefe, Tusit Weerasoraya
Location: S-29

“Study of Crack Initiation and Propagation Along Fiber Matrix Interface Using Carbon Nanotubes As Sensors”
Presenter: Sandeep Tamrakar
Co-Authors: Subramani Sockalingam, Udel, Bazle Haque, Udel, John Gillespie, Jr., Udel
Location: S-30

“Dislocation Structures of Pure Mg Single Crystals and Hot-rolled Pure Mg Compressed along c-axis”
Presenter: Kelvin Xie
Co-Authors: Kevin Hemker, Johns Hopkins University
Location: S-31

“Dynamic Response of AZ31B Magnesium under Pressure-Shear”
Presenter: Meng Zhao
Co-Authors: KT Ramesh, JHU
Location: S-32