

Full name	Affiliation	Abstract title
2012 GEMS Finalists		
Babak Anasori	Drexel University	Thermally stable Nano-grain Mg Composites Reinforced with MAX Phases
Bo Chen	Virginia Tech	Voltage Decreasing Rate Effect during Two-Step Anodization on Multilayer TiO ₂ Nanotubes
Henry Colorado	University of California, Los Angeles	New Concept of Ultra Low Cost Chemically Bonded Ceramic Materials Fabricated from Traditional Fillers and Wastes
Hoorshad Fathi	Alfred University	Development of a Model of Reverse Micelle Size with Electrolyte Additions
James Kelly	Alfred University	Densification Behavior and Interfaces of Tantalum Carbide Nanopowders Consolidated by Spark Plasma Sintering
Jiamian Hu	Tsinghua University/The Pennsylvania State University	Phase-Field Simulations of a Simple Voltage-Controlled Magnetic Random Access Memory
Ozgun Keles	Purdue University	Statistical Failure Analysis of Crystallographically Isotropic Porous Materials
Solaiman Tarafder	Washington State University	Mechanical, Histological and Immunohistochemical Evaluation of Sr/Mg doped 3D Printed Interconnected Porous β -Tricalcium Phosphate Ceramic Scaffolds for Bone Tissue Engineering
Stephanie Bojarski	Carnegie Mellon University	Changes in the Grain Boundary Character and Mean Relative Energy Resulting from a Complexion Transition in Ca-doped Yttria
William Yi Wang	The Pennsylvania State University	Electronic Structure of Stacking Faults in Mg: A First-Principles Study
2011 GEMS Finalists		
Indranil Lahiri	Florida International University	Interface Engineered Carbon Nanotube Based Field Emission Devices
Jian Shi	University of Wisconsin-Madison	3D TiO ₂ Nanoarchitecture Fabricated by Pulsed Chemical Vapor Deposition
John Koppes	Purdue University	Effects of Thermal Cycling and Thermal/Humidity Hold on Texture Evolution of Sn, Sn-Cu, and Sn-Cu-Pb Electroplated Films

Kyubum Kim	University of Michigan	Effect of Strain Rate and Cycling in the Superelastic Deformation of the Shape Memory Alloy Nickel-Titanium
Mark Andio	The Ohio State University	Synthesis of Nano-structured Metal-Oxides and Deposition via Ink-Jet Printing on Microhotplate Substrates for Applications in Gas Sensing
Michael Asoro	University of Texas at Austin	In-situ TEM Observation of Solid to Vapor Phase Transitions in Silver Nanoparticles
Rutooj Deshpande	University of Kentucky	Understanding diffusion-induced-stresses in lithium ion battery electrodes
Xing Huang	University of Kentucky	Novel Catalytic Behavior of Ultra-Small Ceria Nanoparticles for Water Splitting through DFT Investigation
Yang Zhong	University of Connecticut, Storrs	Sintering and Characterization of Nano WC-Co Powder— On the Formation of WC Platelets
Zhi-Gang Mei	The Pennsylvania State University	First-principles Study of Lattice Dynamics and Thermodynamics of TiO ₂ Polymorphs
2010 GEMS Finalists		
No GEMS Awards were given in 2010		
2009 GEMS Finalists		
Craig Przybyla	Georgia Institute of Technology	Microstructure-Sensitive Extreme Value Probabilities of Fatigue in Advanced Engineering Alloys
Hamid Azizi-Alizamini	University of British Columbia	Phase Field Modeling of Austenite Formation from Ferrite-Carbide Aggregates
Jimmy Shi	Clemson University	Segregation, Disorder and Wetting at Molybdenum Grain Boundaries and Their Implications in Activated Sintering
Sarthak Havelia	Carnegie Mellon University	Novel Approaches to the Growth of Epitaxial BiMnO ₃ Thin Films
Shaun Gittard	North Carolina State University	Two Photon Polymerization of Organically-Modified Ceramic Materials
Sudhakar Shet	New Jersey Institute of Technology	Bandgap-reduced P-type ZnO Films by Co-doping of Cu and Ga for Improving Photoelectrochemical Response
Weronika Walkosz	University of Illinois at Chicago	Interfaces of Silicon Nitride Ceramics: Direct Imaging and First-Principles Calculations

Yaodong Yang	Virginia Tech	Solid State Synthesis of Perovskite-Spinel Nanocomposites
2008 GEMS Finalists		
Edward D Herderick	The Ohio State University	Synthesis, Characterization and Properties of Metal-Oxide-Metal Heterojunction Nanowires
Guang Sheng	The Pennsylvania State University	Domain stability for ferroelectric thin films under anisotropic in-plane substrate strains: a phase-field simulation
Huinan Liu	Brown University	Nanophase Hydroxyapatite in Biodegradable Polymer Composites as Novel Drug-Carrying Implants for Treating Bone Diseases at Targeted Sites
Judith Sorge	Rutgers University	Hydrothermal Production and Characterization of Structures Grown on Titanium Metal
Laura B. Cerully	Georgia Institute of Technology	Gas Carburization and Heat Treatment of Reduced Metal-Oxide Strip
Melissa K. Santala	University of California, Berkeley	Orientation Relationships and Morphologies of Pt Precipitates in Sapphire
Mor Baram	Israel Institute of Technology	Atomistic Characterization of Nanometric Films at Metal-Ceramic Interfaces
Sarvesh Kumar Soni	National Chemical Laboratory, Pune, India	Biomimetic synthesis of nanosized Hydroxyapatite and its polymorphs
Sumin Zhu	Missouri University of Science and Technology	Mechanical properties of zirconium diboride ceramics at elevated temperatures
William C. Chueh	California Institute of Technology	Electrochemical Characterization of Highly Oriented Ceria Thin Film
2007 GEMS Finalists		
James F Carroll	University of Illinois at Urbana-Champaign	Field-Induced Strain Behavior of Potassium Modified Sodium Bismuth Titanate Polycrystalline Ceramics
Jennifer Hicks Czerepinski	Rutgers, the State University of New Jersey	A Computational Model to Determine Chemical Uniformity of Rare Earth-Doped Ceramics
Jennifer Lynn Walley	University of California	Fatigue Properties and Microstructural Correlations of Ultra-Fine Grained 5083 Aluminum Alloys
Kevin Anthony Grossklaus	Purdue University	Development of Pb-Free Nanoparticle Solders for Microelectronic Packaging
Ramesh Nath	University of Connecticut	Nanoscale Ferroelectric Domain Dynamics via 10 frame/sec SPM Imaging
Ratan Kumar Saha	University of Calgary	Use of Electrodeposited Coatings as Interlayers in Transient Liquid Phase Bonding

Samrat Choudhury	The Pennsylvania State University	Local Switching and Domain Evolution of PZT Thin Films - A Phase-Field Simulation
Soodkhet Imlao	University of New South Wales	Frequency Dependence of Ferroelastic Domain Switching Behaviour of Piezoelectric Ceramics Under Cyclic Mechanical Loading Measured by Neutron Diffraction
Svea Mayer	Montanuniversitaet Leoben	Correlation Between Heat Treatment, Microstructure and Mechanical Properties of a Hot-work Tool Steel
Tao Sun	Northwestern University	In-situ Investigation of Nucleation and Grain Growth of Sol-Gel Derived Oxide Thin Films by GISAXS
2006 GEMS Finalists		
Anand Doraiswamy	University of North Carolina and North Carolina State University	Laser Direct Writing: Transcending Tools for Biomaterials Processing
Arnold Allenic	University of Michigan	Structure And Optoelectronic Properties Of N-type And P-type Phosphorus-doped ZnO Films
Jing Liu	University of Central Florida	Selected Microstructural Observations In Thermal Barrier Coatings By Transmission Electron Microscopy
Josh Sugar	University of California, Berkeley	A Novel Approach to Model Studies of Volumetrically Constrained Spinodal Decomposition
Julia Deneen Nowak	University of Minnesota	Lattice Defects in Nanoparticles
Kristen Brosnan	The Pennsylvania State University	Processing and Application of High Strain, Textured Piezoelectric Materials
Lane W. Martin	University of California, Berkeley	Investigations of Multiferroic Complex Oxides
Marian Kennedy	Washington State University	Aging of Transition Metal Interfaces and Evolution of Interfacial Fracture Energies
Michael Rauscher	The Ohio State University	Patterned Thin Film Electrodes For Studying Oxygen Reduction In SOFC Cathodes
Shen Dillon	Lehigh University	Temperature and Chemically Induced Grain Boundary Structural Transitions in Alumina