Mechanical Behavior of Advanced Materials

2017 TMS Annual Meeting, San Diego, CA, Feb. 26-Mar 2

This symposium will honor the outstanding contributions of Prof. Carl C. Koch to many fields in materials science in the last 50 years and celebrate his 80th birthday. In particular, his pioneering research in the areas of synthesis and processing of nanostructured and amorphous materials using mechanical alloying has led to a new paradigm in the field of nanomaterials research. His recent research has focused on synthesis, microstructure and mechanical behavior of bulk nanostructured materials, metallic glasses and high entropy alloys.

The symposium will focus on experimental, theoretical and computational studies related to nanostructured materials, amorphous metals and high entropy alloys in the form of bulk, thin films and coatings. These studies will include, but are not limited to, the following subject areas:

(1) synthesis and microstructural characterization of advanced materials
(2) deformation, plasticity and creep in nanomaterials
(3) fatigue and fracture
(4) nanomechanics,
(5) thermal stability
(6) radiation damage in materials
(7) advanced characterization techniques, including *in situ* techniques and advances in nanomechanical testing techniques;
(8) multifunctional nanomaterials (including but not limited to magnetic materials, metamaterials and thermoelectric materials),
(9) theoretical, computational and analytical modeling of mechanical properties in small dimensions.

Papers from this symposium are planned to be published in a special issue of a peer reviewed materials science journal.

Organizers:

Xinghang Zhang, Texas A&M University, zhangx@tamu.edu ; (979) 845-2143
Yuntian Zhu, North Carolina State University, ytzhu@ncsu.edu
Joseph Poon, University of Virginia, sjp9x@virginia.edu
C. Suryanarayana, University of Central Florida, Surya@ucf.edu
Enrique Lavernia, University of California, Davis, lavernia@ucdavis.edu
Haiyan Wang, Texas A&M University, wangh@ece.tamu.edu

No. of sessions: 6

Publication plan: A special journal issue