MRS Symposium I:
Nanomaterials for Structural Applications
(Boston, USA, December 2-6, 2002)

About a decade of research has shown that nanostructured materials have the potential to significantly impact growth at every level of the world economy in the 21st century. This new class of materials is now being introduced in structural applications, such as wear resistance, plastic forming, and other load bearing applications. Nanophase or nanocrystalline materials are also being used in electronics, refractory, biological and catalytic applications. Progress in a wide range of structural applications for nanomaterials crucially depends on the development of new fabrication and processing technologies, along with a fundamental understanding of the relationship between the structure and properties. The main aim of this Symposium is to present current multidisciplinary research on nanostructured materials for structural applications with the primary focus of reinforcing the relationship between basic science and engineering at the nanoscale level. We aim to gather researchers who will review recent advances in this area, assess the impact across materials science, and chart a course for future work in research, fabrication, design and application. The Symposium aims to cover bulk materials, as well as films, coatings and nanocomposites. Particular emphasis is placed on bringing researchers working on theoretical and modeling aspects closer to those working on developing processing, fabrication and characterization techniques.
Specific topics of interest include, but are not limited to:

- Fabrication and processing of nanomaterials for structural applications
- Theory and modeling of nanostructures
- Nanostructured materials characterization
- Stress analysis of nanostructured coatings
- Plastic deformation of nanostructured materials
- Fracture of nanostructured materials
- Fatigue properties of nanostructured materials
- Deformation-induced phase transformations in nanostructures
- Innovative structural applications of nanomaterials
- Nanocomposites: polymer with dispersed ceramic or metal nanoparticles, ceramic/ceramic or metal/ceramic systems
- Structural materials from immiscible polymer blends
- Design of nanomaterials for structural applications

The symposium will consist of both invited and contributed talks and poster sessions (for more details, see: http://www.mrs.org/).

Invited speakers (partial list): **C.Bampton** (Boeing), **G.-M.Chow** (National University of Singapore, Singapore), **E.Lavernia** (University of California, Irvine), **A.K.Mukherjee** (University of California, Davis), **C.S.Pande** (Naval Research Laboratory), **K.Sadananda** (Naval Research Laboratory), **H.-E.Schaefer** (Stuttgart University, Germany), **S.Suresh** (Massachusetts Institute of Technology), **R. Talia** (LSU)

Symposium Organizers

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