2004

Special Achievement Award for YOUNG INVESTIGATORS in APPLIED MECHANICS

Presented To

Professor Kaushik Bhattacharya

In Recognition Of

his seminal contributions in identifying the critical crystallographic features that govern shape memory behavior in solids and thin films

Presented At

**The Applied Mechanics Division Banquet,
The 2004 International Mechanical Engineering Congress and R& D Expo in Anaheim, CA,
November, 18, 2004**

**Presiding: Mary C. Boyce
ASME/AMD Chair 2004-2005**

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Professor Kaushik Bhattacharya

Kaushik Bhattacharya received his B.Tech degree in Mechanical Engineering from the Indian Institute of Technology, Madras, India in 1986 and his Ph.D. in Mechanics from the University of Minnesota in 1991. He held a post-doctoral position at the Courant Institute for Mathematical Sciences during 1991-1993. He joined the faculty of the California Institute of Technology in 1993, and is currently a Professor of Mechanics and Materials Science. He has held visiting positions at Cornell University, Heriot-Watt University (Edinburgh, Scotland), Max-Planck-Institute for Mathematics in the Sciences (Leipzig, Germany), Cambridge University (England) and the Indian Institute of Science (Bangalore, India).

His main area of research concerns the Mechanics of Materials, and in particular the link between the microstructure and macroscopic properties of active materials. His work has identified the critical criteria in the crystallography that make shape-memory alloys special among martensites and Titanium-Nickel special among shape-memory alloys. This has led to ideas for the improvement of the shape-memory effect in other materials. His research has also identified an electromechanical loading path gives rise to large electrostriction in ferroelectric single crystals.

A current focus of his research has been the application of active materials to microactuation through a new strategy wherein inherent microstructural features of thin films of active materials are used as structural elements. Other areas of his research include the growth of thin films, the effective properties and failure of composite materials, the design of hard but tough steels, failure of heterogeneous materials, precipitation hardening, and the development of methods for a unified molecular-continuum description of materials.

He has as authored over 50 articles in peer-reviewed scientific publications and a research monograph on shape-memory materials. He has given invited and plenary lectures at various professional organizations and universities in the United States, Europe and Asia. He received the Young Investigator Award from the National Science Foundation (NSF) in 1994, Charles Lee Powell Award in 1997 and the Young Investigator Prize from the Society of Engineering Science (SES) in 2004.

He currently serves as an Editor of the Journal of the Mechanics and Physics of Solids, and serves on the Editorial Board of the Archive for Rational Mechanics and Analysis and other archival journals.

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SPECIAL ACHIEVEMENT AWARD FOR YOUNG INVESTIGATORS IN APPLIED MECHANICS

Past Honorees

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