

SEMINARIOS INTERUNIVERSITARIOS MECÁNICA Y MATERIALES

Speaker: Professor Subra Suresh

Massachusetts Institute of Technology, USA
2006 *Acta Materialia* Gold Medal, 2007 European Materials Medal,
2008 Eringen Medal of the Society of Engineering Science

Fecha y hora: 21 de mayo 2008 a las 17:00 h. (café desde 16:30).

Lugar: Sala Verde, 1ª Planta, E.T.S.I. Caminos, Canales y Puertos,
C/Profesor Aranguren, Univ. Politécnica Madrid, Ciudad Universitaria.

Nanotechnology at the intersections of biology and engineering

This lecture will deal with select topics at the intersections of nanotechnology, engineering, biology and human health. For this purpose, molecular changes induced by external factors or biochemical processes occurring naturally in the human body will be considered with a variety of state-of-the-art experimental and computational tools. The alterations to nanoscale responses of the whole cell, cell membrane and cytoskeleton will be explored. Attention will be focused on examples derived from applications of nanotechnology tools to the study of *Plasmodium falciparum* and *Plasmodium vivax* malaria, several types of hereditary hemolytic disorders, and metastatic invasion of tumor. Case studies of targeted gene inactivation methods to probe specific molecular effects at the intersections of nanotechnology, engineering, biology and human health will also be presented. Potential applications of these results for disease diagnostics, therapeutics and drug efficacy assays will also be explored.

Brief CV of Subra Suresh

Subra Suresh is the Dean of Engineering and Ford Professor of Engineering at Massachusetts Institute of Technology where he holds joint faculty appointments in Materials Science and Engineering, Mechanical Engineering, Biological Engineering, and Health Sciences and Technology. He is recognized for his contributions to the areas of materials science, mechanical engineering, nanotechnology, and cell and molecular mechanics research in the context of human diseases. He has been elected to US Academy of Engineering, American Academy of Arts and Sciences, Indian National Academy of Engineering, Indian Academy of Sciences, Royal Spanish Academy of Sciences, German National Academy of Sciences, and Academy of Sciences of the Developing World based in Trieste, Italy.

Contacto: Coordinador Científico: Dr. José Merodio (jose.merodio@upm.es). Asistencia libre.
Información adicional: yolanda@mecanica.upm.es 91-3366760.

Con la colaboración de: Grupo de Mecánica Computacional (UPM), Dpto. Mecánica de los Medios Continuos y T. Estructuras (UPM), Dpto. Ciencia de los Materiales (UPM), E.T.S.I. Caminos (UPM), IMDEA-Materiales, Dpto. Matemáticas (IMAFF, CSIC)