

Robert Henry Thurston Lecture Award

SIA NEMAT-NASSER

Conferral at the Thurston Lecture,
2006 International Mechanical Engineering Congress and Exposition

THE ROBERT HENRY THURSTON LECTURE AWARD was established in 1925 in honor of ASME's first president. It provides an opportunity for a leader in pure and/or applied science or engineering to present to the Society a lecture that encourages stimulating thinking on a subject of broad interest to engineers. The Robert Henry Thurston Lecture Award was elevated to a Society award in 2000.

SIA NEMAT-NASSER, Ph.D, *distinguished professor of mechanics and materials, University of California, San Diego, for distinguished contributions as a world leader in the art of experimental, theoretical and computational applied mechanics, including biomimetic multifunctional materials.*



Dr. Nemat-Nasser is distinguished professor of mechanics and materials in the department of mechanical and aerospace engineering at the University of California, San Diego (UCSD). He has been director of the Center of Excellence for Advanced Materials since 1987, and was co-director (1992–97) and director (1997–2000) of the National Science Foundation's (NSF) Institute for Mechanics and Materials. At UCSD, he spearheaded the creation of an integrated Materials Science and Engineering Graduate Program and served as its founding director (1989–1994).

He began his career at UCSD in 1966, after two years as a postdoctoral fellow and senior research engineer at Northwestern University (Evanston, Ill.). He later rejoined UCSD after serving as professor of applied mechanics and applied mathematics at Northwestern University (1970–85), where he organized an Earthquake Research and Engineering Laboratory.

Nemat-Nasser has provided professional services to the Jet Propulsion Laboratory, Gulf-General Atomic, TRW, the Defense Advanced Research Projects Agency's Panel on Material Modeling for Large-Scale Computations, NSF panels, NASA's Orbital Debris Program, the U.S. Naval Research Laboratory Core Review Panel of Materials and Structural Mechanics, Sandia National Laboratories' Waste Isolation Pilot Plan, the Blue Ribbon Panel on U.S. Air Force Airborne Laser's Lethality Program,

the U.S. Army Research Office's (ARO) Mechanical Science Program Review, and the U.S. Army Research Laboratory's Review of Air and Ground Vehicle Technology. Recently he led the U.S. Department of Energy's Basic Energy Sciences Workshop on New Directions in Mechanics and ARO's Workshop on Future Directions in Solid Mechanics.

His research integrates experiment, theory and computation, and currently includes multifunctional composites with tunable electromagnetic functionality, thermal management, self-healing and self-sensing; polyelectrolytes composites as soft actuators/sensors; shape-memory alloys; self-assembly of chemically functionalized carbon nano-tubes; advanced metals; ceramics; elastomers; and granular materials.

Nemat-Nasser graduated over 40 doctoral students; published over 430 research articles and two major books, *Micromechanics: Overall Properties of Heterogeneous Materials* (co-authored by M. Hori and published by Elsevier Science Publishers, first edition, 1993; revised and extended second edition, 1999) and *Plasticity: a Treatise on Finite Deformation of Heterogeneous Inelastic Materials* (Cambridge University, 2004); is editor in chief of the international journal *Mechanics of Materials*; and edited the series *Mechanics Today* and *Mechanics of Elastic and Inelastic Solids*.

An ASME Honorary Member and Fellow, Nemat-Nasser has been active in the Applied Mechanics Division, including service as chair of the Committee on Geomechanics (1981–85); the Materials Division, including service as vice chair (1996–97) and chair (1997–98); and the Materials and Structures Technical Group as 1995 Congress group representative. He was an organizer of the 2001 Mechanics and Materials Summer Conference in San Diego, which was jointly sponsored by ASME's Materials and Applied Mechanics divisions, the American Society of Civil Engineers' (ASCE) Engineering Mechanics Division and the Society of Engineering Science (SES). Nemat-Nasser received a Lifetime Membership Certificate (2001) for 35 years of support to ASME, the Nadai Medal (2002), a Best Paper of the Year Award (2003) from the Aerospace Division.

He is also a Fellow of the American Academy of Mechanics (AAM) and the SES, and a Foreign Fellow of the Danish Center of Applied Mathematics and Mechanics. He served as secretary and president of the AAM and was president, vice president and director of the SES. Nemat-Nasser is a member of the National Academy of Engineering, an honorary member of the World Innovation Foundation and an elected World-Level Member of the Hall of Fame for Engineering, Science and Technology. His other professional society memberships include ASCE; the American Association of University Professors; the Society for Experimental Mechanics; the American Society for Metals; the Minerals, Metals and Materials Society; the International Society for Computational Engineering and Sciences; SPIE – the International Society for Optical Engineering; and the International Technology Institute.

Nemat-Nasser's fellowships and awards include the International Technology Institute's Willard Rockwell Medal (2003), the SES's William Prager Medal in Solid Mechanics (2002), the Technical University of Crete's Gold Medal (1997), the Alburz Educational Foundation Prize (1975), the American Society for Testing and Materials' Student Award (1959–60) and the Iranian Oil Company Fellowship (1956–57). At UCSD, he received the 2005 Faculty Research Lecturer Award, was selected three times by the graduating seniors to receive School of Engineering's department of mechanical and aerospace engineering Teacher of the Year Award (1994–95, 1996–97 and 2000–01) and held the John Dove Isaacs chair in natural philosophy (1996–2001).

Nemat-Nasser received his bachelor's degree in engineering at California State University of Sacramento in 1960. He earned his master's in civil engineering and his Ph.D. in engineering at the University of California, Berkeley, in 1961 and 1964, respectively, while serving as assistant professor (1961–62) at California State University, Sacramento.