

Center for Advanced Materials of High Quality Dynamic Performance to investigate properties and physical limits of modern man-made materials has received funding from Department of Defense

July 10, 1986

Media Contact: Denys Horgan, 534-3120

LIMITS OF MAN-MADE MATERIALS TO BE INVESTIGATED

A center to investigate the properties and physical limits of modern man-made materials such as ceramics and composites is to be established at the University of California, San Diego with the cooperation of scientists from local industries and funding from the Department of Defense.

Called the Center for Advanced Materials of High Quality Dynamic Performance, the new center has already been accepted in principle by the DOD. The proposed research will cost at least \$6 million over five years.

When finally approved, the center will be headed by Sia Nemat-Nasser, professor of solid and structural mechanics in the Department of Applied Mechanics and Engineering Sciences at UCSD.

Ceramics, composites and cellular materials have a wide variety of uses in modern society. Depending on qualities such as brittleness and the ability to withstand great heat or shock, the new materials are found in scissor blades, tennis rackets, automobile engines and the tiles covering space shuttles. Improved armored protection is one possible military use.

Although some research into the development of the cheaper, stronger and lighter new materials may take place at UCSD, the center's principal role will be to investigate their properties, Nemat-Nasser says.

The center has a two-fold objective. "Our aim is to develop facilities that don't now exist to conduct research into the properties of certain advanced materials," Nemat-Nasser says.

The second objective is human resource development: to create a pool of U.S. graduate students expert in the mechanics of the modern materials, he adds.

Among the San Diego companies cooperating with the new center are Science Applications International Corporation (SAIC), GA-Technologies, Inc. (GA), Pacifica Technology (PacTech), and Global Analytics.

Key personnel in the center will include faculty members of UCSD and the University of California, Santa Barbara and scientists from the Lawrence Berkeley Laboratory, the Lawrence Livermore National Laboratory, the Los Alamos National Laboratory, and Army laboratories and several post-doctoral research fellows and graduate students.

Besides Nemat-Nasser, other UCSD faculty members participating in the multidisciplinary center include Gilbert Hegemier, professor of applied mechanics; Massoud Simnad, adjunct professor of materials science and engineering and nuclear energy; Albert Ellis, professor emeritus of applied mechanics; Huey-Lin Luo, professor

of electrical engineering; Constantin Politis, adjunct professor of electrical engineering, and Hidenori Murakami, assistant professor of applied mechanics.

In addition, approximately 15 people will be employed at the center.

While the center has been approved in principle, the precise amount of funding is dependent on negotiations between the DOD and UCSD and subject to the availability of Congressional funds for university research in fiscal year 1987.

For additional information, please contact Professor Nemat-Nasser, Tel. 534-4914 or Denys Horgan, 534-3120.

(July 10, 1986)