



Fan to be presented with the Mid-Career Researcher Award

Hongyou Fan, Sandia National Laboratories and The University of New Mexico, will receive the Mid-Career Researcher Award “for outstanding contributions in nanoparticle self-assembly of functional nanomaterials and for leadership within the Materials community.” The award recognizes exceptional achievements in materials research by mid-career professionals. The recipient must also demonstrate notable leadership in the materials area.

Fan is widely recognized for his pioneering work on stress-induced nanoscale assembly and fabrication technology. Stress-induced assembly uses mechanical forces to induce nanoparticles’ meso-phase transition for fabrication of a variety of new nanostructured metallic, semiconducting, and magnetic materials. While current nanoparticle materials synthesis

methods are largely based on solution chemistry at ambient conditions, the stress-induced assembly method uses mechanical compression stresses to provide an additional processing parameter to change material structures. This enables formation of new nanomaterial configurations that impart innovative chemical and physical properties that have not been possible using chemical synthesis methods.

Recently, Fan led a major effort to extend this technology using dynamically applied electromagnetic forces to achieve high throughput fabrication with loading conditions similar to embossing and imprinting manufacturing processes but at ultrashort (nanosecond) time scales. The advantage of this approach is that nanostructured materials can be fabricated with improved performance and reduced manufacturing cost.

His team fabricated arrays of high-performance nanowire stress sensors exhibiting 10 times the density, twice the strength, and a much faster response time of ~400 nanoseconds compared to those fabricated by chemical methods.

Fan is a distinguished member of the technical staff at Sandia National Laboratories and is a National Laboratory Professor in the Department of Chemical and Biological Engineering at The University of New Mexico. He received a BS degree in chemistry from Jilin University in 1990, an MS degree in polymer science from the Chinese Academy of Sciences in 1995, and a PhD degree in chemical engineering from The University of New Mexico in 2000. He was a postdoctoral fellow at Sandia National Laboratories, Albuquerque, N.M., before working there full-time. His research focuses on functional nanomaterials synthesis, assembly, and integration for nanoelectronic and nanophotonic applications. He is a Fellow of MRS and the American Physical Society. He has received the MRS Kavli Distinguished Lectureship Award in Nanoscience, four R&D 100 Awards for the development of technically significant products, The University of New Mexico Outstanding Faculty Mentor Award, and the Asian American Engineer of the Year Award.



Meyyappan to receive MRS Impact Award

Meyya Meyyappan, NASA Ames Research Center, will receive the MRS Impact Award “for his lifelong dedication toward creating a significant and outstanding impact to understanding nanotechnology through global outreach initiatives and for unwavering mentorship.”

Meyyappan arrived at NASA Ames Research Center 20 years ago and began

his efforts toward education and training opportunities in nanotechnology and nanomaterials. He was one of the original four members of the Interagency Working Group on Nanotechnology (IWGN) established by the White House Office of Science and Technology Policy. The IWGN was responsible for organizing the US National Nanotechnology

Initiative. Since then, Meyyappan has helped with national nanotechnology initiatives in the United Kingdom, Israel, Republic of Korea, Thailand, Taiwan, Canada, and several other countries.

Meyyappan was instrumental in creating an IEEE website (trynano.org) in collaboration with the IEEE Educational Activities Board. This website, geared toward educating high-school students and their teachers about nanotechnology, covers topics such as what is nanotechnology and what are the applications. He has worked with community college to create nanotechnology awareness. Meyyappan also offered a NATO short course on nanomaterials for aerospace application in eight different countries with attendees from both industry and academia.