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Related Faculty:

[Li Shi](#) [2]

Friday, January 18, 2013

Professor Li Shi is pictured holding a cryostat, which is an instrument used for measuring the thermal property of graphene (a form of carbon one atom thick) as reported in the journal *Science*.

The Academy of Medicine, Engineering, and Science of Texas awarded Mechanical Engineering professor, and Myron L. Begeman Fellow in Engineering, Dr. Li Shi the 2013 Edith and Peter O'Donnell Award in Engineering. This prestigious merit recognizes Shi's pioneering contribution to the fundamental understanding of nanoscale thermal transport and thermoelectric energy conversion processes, and his application of scientific discoveries to enhance thermoelectric energy conversion devices and thermal management of nanoelectronic and energy storage devices.

The O'Donnell Awards recognize rising Texas researchers who are addressing the essential roles that science and technology play in society, and whose work meets the highest standards of exemplary professional performance, creativity and resourcefulness.

Shi's Research

Shi's research focuses on thermal transport and thermoelectric energy conversion in nanostructured and complex materials. His research group developed a unique methodology, drawing from nanofabricated measurement devices and scanning probe microscopy, to characterize energy transport in individual carbon nanotubes, graphene, nanowires, thin films, and nanocomposites. The publications of his breakthroughs have been widely cited, and they have endowed the academic community with a better understanding of thermal transport processes in nanomaterials, especially carbon nanostructures. Based on their findings, Shi's research group is also developing high-performance thermal and thermoelectric devices for thermal energy storage, vehicle waste heat recovery, and solar energy utilization. Other research includes thermal management of nanoelectronic devices, and nanotechnologies for drug delivery and biomedical imaging.

Honors and Professional Service

Shi has served as associate editor for *Nanoscale* and *Microscale Thermophysical Engineering* since 2011 and was named editor-in-chief this month. He is on the executive committee of ThermalHub, an online platform for thermal science research and education supported by the National Science Foundation. Shi's research achievements and professional services have been recognized by the National Science Foundation with a 2003 Faculty Early Career Development (CAREER) Award, the Office of Naval Research in 2004 (Young Investigator Award), and the ASME Journal of Heat Transfer in 2005 (Outstanding Reviewer Award).

Education

Shi earned an undergraduate degree in thermal engineering from Tsinghua University in Beijing, China in 1991, where he took part in combustion research. He went on to industrial research for four years before earning a Master of Science degree from Arizona State University in 1997. During his doctoral studies at the University of California, Berkeley, he designed and fabricated micro-bridges, as part of his investigation on thermal physics in individual nanostructures. He developed the first experimental observation of the superior thermal conductivity of individual carbon nanotubes, which allowed him to utilize his earlier research interest in physics and bridges. After receiving a Ph.D. in Mechanical Engineering in 2001, Shi worked for a year as a research staff member at IBM Research Division, joining the Mechanical Engineering department faculty at The University of Texas at Austin in 2002.



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