Alexander A. Balandin named 2013 MRS Medalist for graphene thermal properties

The Materials Research Society has announced that the 2013 MRS Medal will go to Alexander A. Balandin, Founding Chair of the Materials Science and Engineering Program and Professor in the Department of Electrical Engineering at the University of California (UC)–Riverside. Balandin is cited for the "discovery of the extraordinary high intrinsic thermal conductivity of graphene, development of an original optothermal measurement technique for investigation of thermal properties of graphene, and theoretical explanation of the unique features of the phonon transport in graphene." Balandin, who is also director of the Nano-Device Laboratory at UC–Riverside, will be recognized during the award ceremony at the 2013 MRS Fall Meeting in Boston.

In 2007, Balandin introduced the optothermal experimental technique for measuring thermal conductivity of atomically thin films. This technique, where the micro-Raman confocal spectrometer is used for measuring the local temperature and thermal conductivity, has been reproduced in many laboratories worldwide and applied to a variety of materials systems. In 2008, Balandin published a seminal paper with the report that graphene has extremely high intrinsic thermal conductivity. This discovery created the subfield of graphene thermal research.

The following year, Balandin and his group published theoretical papers where it became clear that the difference in thermal conductivity of graphene and graphite is related to the specifics of the low-energy phonon transport in these systems. In 2010, Balandin and his coworkers carried out the first experimental demonstration of the evolution of heat conduction as the system dimensionality changes from two-dimensional (graphene) and explained it theoretically. The high thermal conductivity of graphene is important for proposed electronic applications of graphene. It also opens a new range of graphene applications in thermal management such as graphene-enhanced thermal interface materials and few-layer graphene heat spreaders.

Balandin received his MS degree in applied physics from the Moscow Institute of Physics and Technology (1991) and his PhD degree in electrical engineering from the University of Notre Dame (1996). Following his postdoctoral research at the University of California–Los Angeles, Balandin joined the UC–Riverside faculty in 1999 and founded the Materials Science and Engineering Program in 2006. He is a Fellow of the American Physical Society, The Institute of Electrical and Electronics Engineers, American Association for the Advancement of Science, the Optical Society of America, and the International Society for Optical Engineering. He is a recipient of the Pioneer of Nanotechnology Award for 2011.

David J. Srolovitz receives 2013 Materials Theory Award

The Materials Research Society has named David J. Srolovitz of the University of Pennsylvania as the recipient of the 2013 Materials Theory Award for his "decisive and highly influential contributions to the theory and simulation of microstructure, morphological evolution, mechanical behavior, and the structure and dynamics of interfaces." Srolovitz will be recognized during the award ceremony at the 2013 MRS Fall Meeting in Boston. The Materials Theory Award, endowed by Toh-Ming Lu and Gwo-Ching Wang, "recognizes exceptional advances made by materials theory to the fundamental understanding of the structure and behavior of materials."

Srolovitz received his BS degree in physics from Rutgers University, and his MS and PhD degrees in materials science from the University of Pennsylvania. He recently joined the faculty at the University of Pennsylvania as the Joseph Bordogna Professor of Engineering and Applied Science in the Department of Materials Science and Engineering and in the Department of Mechanical Engineering and Applied Mechanics, after serving as the executive director of the A*STAR Institute of High Performance Computing in Singapore since 2009. Prior to this position he held senior faculty appointments at Yeshiva University, Princeton University, and the University of Michigan,

https://doi.org/10.1557/mrs.2013.252 Published online by Cambridge University Press

along with many distinguished visiting professorships. He is a Fellow of MRS, The Minerals, Metals & Materials Society, the Institute of Physics London, and ASM International. For 30 years he has been at the forefront of theoretical and computational materials science, making contributions to a variety of important materials theory problems.

Among some of Srolovitz's seminal contributions is his work on the topology and kinetics of grain growth in polycrystals. Srolovitz and his collaborators were among the first to use Monte Carlo simulation techniques to track the growth and shrinkage of grains in polycrystalline materials during recrystallization and grain growth. Through these simulations, he was able to provide a microscopic picture of these important processes. In further work in this area, especially using sufficiently large systems to capture the behavior of real polycrystalline metals, he was able to link atomic-scale processes to macroscopically observed microstructural behavior.

In his early work on surface and thin film morphology, Srolovitz showed that stresses and surface tension can lead to the destabilization and roughening of flat surfaces and the break-up of thin films on substrates. These studies have been corroborated by experimental measurements in a wide range of materials systems and have been the basis for new technologies that exploit these instabilities for surface patterning and the formation of controlled island morphologies. Srolovitz has also worked in the areas of mechanical properties of high-temperature alloys, thin film growth, recrystallization, surface phenomena, phase separation, and energy harvesting.

David L. Morse to give plenary address on glass at 2013 MRS Fall Meeting

David L. Morse, executive vice president and chief technology officer of Corning Incorporated, will give the plenary talk on "A Day Made of Glass—Vision Becoming Reality," at the 2013 Materials Research Society Fall Meeting in Boston. His talk will be based on an Internet video series presented by Corning on the future of glass (see www.corning.com/adaymadeofglass). Morse will discuss advanced glass materials and applications from high-performance liquid-crystal display glass to super tough, thin, lightweight substrates to very high bandwidth and very low loss optical fibers and connectors for wire line and wireless applications. These developments, including novel materials modeling to the latest in optical fiber design, and their technical trajectories will be discussed. The presentation will be given on Monday, Dec. 2, at 6:30 p.m. in the Grand Ballroom of the Sheraton Hotel.

Morse joined Corning in 1976 as a composition scientist in glass research after receiving his PhD degree at the Massachusetts Institute of Technology. He is now a member of the management committee of the corporation, is an invited participant to meetings of Corning's board of directors, is a member of the board of directors of Dow Corning Corporation, and is a member of the board of trustees of the Corning Incorporated Foundation.

Over the course of his career at Corning, he has had many senior leadership roles in materials research, product development, and technology leadership in several business divisions. Prior to his current position, Morse was senior vice president, Science & Technology and director, Corporate Research. He has been active in the development of Corning's glass strategy.

Morse is a member of the National Academy of Engineering, chair of the McDonnell International Scholars External Advisory Committee at Washington University in St. Louis, the Board of Industry Advisors of International Materials Institute for New Functionality in Glass, and the National Science Foundation National Board on Chemical Sciences and Technology.

https://doi.org/10.1557/mrs.2013.252 Published online by Cambridge University Press