

Biographical Sketch



Alexander A. Balandin received his BS and MS degrees *Summa Cum Laude* in Applied Mathematics and Applied Physics from the Moscow Institute of Physics and Technology (MIPT), Russia. He received his second MS degree and PhD degree in Electrical Engineering from the University of Notre Dame, USA. From 1997 to 1999, he worked as a Research Engineer at UCLA. In 1999 he joined UCR, where he is presently a Distinguished Professor of Electrical and Computer Engineering, the University of California Presidential Chair Professor of Materials Science, and Director of the Phonon Optimized Engineered Materials (POEM) Center. He served for five years as a Director of the UCR Nanofabrication Facility. He is the Founding Chair of the UCR Materials Science and Engineering (MSE) Program.

Professor Balandin's broad expertise covers a wide range of areas – from electronics and nanotechnology to material science and solid-state physics. He is recognized as a pioneer of the graphene thermal field who discovered experimentally and explained theoretically unique heat conduction properties of graphene, and introduced the first graphene-based thermal management technologies. His other notable achievements include development of the phonon engineering approaches for nanoscale devices, demonstration of the room-temperature charge-density-wave devices, electronic noise reduction in wide-band-gap-semiconductor transistors, and development of the electronic noise spectroscopy methods. His current research interests include 1D and 2D van der Waals materials, charge-density-waves and their device applications, electronic noise, Brillouin – Mandelstam – Raman spectroscopy, nanophononics, thermal applications of graphene, emerging quantum materials and devices.

Professor Balandin is the Vannevar Bush Faculty Fellow / Class of 2021 with the \$3M award on one-dimensional quantum materials. He is a recipient of The MRS Medal from the Materials Research Society, The Brillouin Medal from the International Phononics Society and the Pioneer of Nanotechnology Award from IEEE Society for his graphene, phononics and nanotechnology research. He is an elected Fellow of eight professional societies: MRS, APS, IEEE, OSA, SPIE, IOP, IOM3 and AAAS. He is among the Clarivate Analytics and Thomson Reuters Highly Cited Researchers (Physics and Cross-Discipline). He serves as a Deputy Editor-in-Chief of the Applied Physics Letters, a Chair of the IEEE Nanotechnology Council Award Committee, and a Member of the IEEE Nanotechnology Council and IEEE Fellow Committee.

Professor Balandin's research has been funded by NSF, SRC, DOE, ONR, AFOSR, DARPA, other federal and state government agencies as well as industry. He served as a Co-Director and Thrust Leader for the DOE EFRC Spin and Heat in Integrated Nanoelectronic Systems (SHINES), and presently serves as a Thrust Co-Leader for the DOE EFRC Ultra Materials for a Resilient, Smart Electricity Grid (ULTRA). He led several multi-PI NSF projects such as Nano 2020 and Beyond, EFRI 2DARE, DMREF and others. He served as a dissertation director for 35 PhD students who enjoy successful careers at Apple, Intel, Micron, Raytheon, Lam Research, Keysight, Northrop Grumman, General Atomics, other industry leaders, as well as in academia and government labs.

For more information, visit his group web-site: <http://balandingroup.ucr.edu/>