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Clarke is a Gordon McKay Professor of Materials and Applied Physics in the Harvard School of Engineering and Applied Sciences. He holds a PhD degree in physics from the University of Cambridge, a BSc degree in applied sciences from Sussex University, and was awarded a ScD degree from the University of Cambridge.

A member of the National Academy of Engineering, he shared the 2008 Japanese NIMS Award for Recent Breakthroughs in Materials Science for Energy and Environment and is a Distinguished Life Member of the American Ceramic Society. Clarke has published more than 450 papers in areas of materials ranging from thermal-barrier coatings to dielectric elastomers to fundamentals of oxidation to microelectronics reliability and the electrical and optical properties of ZnO and GaN.



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Oechsner is a professor of materials technology in mechanical engineering and director of the State Materials Testing Laboratory at the Technical Universitaet in Darmstadt, Germany. He holds a doctoral degree in mechanical engineering from Universitaet Karlsruhe, Germany. Prior to

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director of the NSF Materials Research Science and Engineering Center at The Ohio State University. His research interests include structural ceramics/coatings/ composites and functional nanomaterials. Padture has published more than 125 journal papers, which have been cited over 5,000 times. He has co-invented four patents and delivered about 150 invited talks. A fellow of the American Ceramic Society, he also has received the society's Snow, Coble, and Fulrath awards. Padture is recipient of the Office of Naval Research Young Investigator Award, is an AAAS fellow, and is principal editor of the MRS Journal of Materials Research.



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methods. Particular applications of interest are phonons thermal transport in technologically important systems such as nuclear fuels and thermal-barrier coatings.

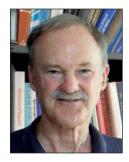


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Hemker is the Alonzo G. Decker Chair of Mechanical Engineering at Johns Hopkins University. He and his students seek to identify the underlying atomic-scale processes that govern the mechanical response of advanced materials. Their research involves the mechanical stability of nanocrystalline thin films, development and characterization of MEMS materials,

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DOI: 10.1557/mrs.2012.240



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Johnson retired in 2008 from his position of principal scientist in Ceramics and Metallurgy Technologies at General Electric (GE) Research, but continues to consult actively for GE and elsewhere. He earned BS and PhD degrees in metallurgy from The Pennsylvania State University. In 1973, he joined GE's Corporate Research and Development Center (now GE Research) in Niskayuna, NY. In 2010, Johnson was appointed

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Levi is a professor of materials and mechanical engineering at the University of California, Santa Barbara. He holds a PhD degree from the University of Illinois at Urbana-Champaign (1981). His research focuses on the fundamental understanding of microstructure evolution in ceramics and metals and its application to the conceptual design of improved structural and functional materials. The current emphasis of

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Lipkin is a senior materials scientist at GE Global Research, where he has worked since 1996. He received his PhD degree in materials science from the University of California, Santa Barbara, and a BS degree in materials science from Northwestern University. His current research is focused on developing advanced alloys, coatings, and coating processes for high-temperature and structural applications. These include oxidation-resistant, thermal-barrier, and environmental-

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Pan is a professor and director of the State Key Lab of New Ceramics and Fine Processing at Tsinghua University, China. He received his BS degree (1982) from the University of Science and Technology Beijing, China, and his MS (1987) and PhD degrees (1990) from Nagoya University in Japan. His research interests include low thermal conductivity ceramics for gas-turbines,

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Phillpot is a professor of materials science and engineering at the University of Florida. He received his BA degree from Oxford University in 1980 and PhD degree from the University of Florida in 1985, both in physics. He spent 16 years at Argonne National Laboratory in Chicago prior to joining the University of Florida in 2003. His research focuses on using atom-

istic and electronic-structure simulation methods to address issues in phonon-mediated heat transfer, ferroelectric and dielectric behavior, defect properties in oxides, mechanical behavior of metals, and tribology. He also works on developing advanced potentials for multifunctional systems. Phillpot is a Fellow of the American Physical Society, the American Association for the Advancement of Science, the Institute of Physics (UK), and the Institute of Materials, Minerals and Mining (UK).

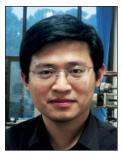


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Pollock is the Alcoa Professor of Materials at the University of California, Santa Barbara. She graduated with a BS degree from Purdue University and a PhD degree from the Massachusetts Institute of Technology in 1989. Her current research focuses on the processing and properties of structural materials and coatings and on the use of ultrafast lasers for microfabrication and materials diagnostics. Pollock is a member

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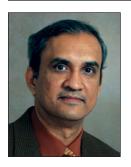


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Schulz is head of the High Temperature and Functional Coatings department at the German Aerospace Center's (DLR) Institute of Materials Research in Cologne, Germany. He studied materials science at the Technical University Mining Academy Freiberg, where he received his PhD degree in 1995. In 1991, he joined DLR to perform research on the development, manu-

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Vidal-Sétif has been working as a senior scientist on thermal-barrier systems for gas-turbine engines at Onera, the French Aerospace Lab, for the past seven years. She graduated as a chemist engineer from the Ecole Supérieure de Physique et Chimie Industrielles in Paris and obtained a PhD degree in physical chemistry

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Zombo has been working in the fields of metallurgy, failure analysis, and NDE for 26 years since earning a degree in metallurgical engineering. His fields of involvement include welding, casting, forging, coating, machining, failure analysis, and composites used in power generation, aerospace, and heavy industry. Zombo has 36 patents and 29 publications in the fields of NDE, *in situ*

inspection, welding, and metallurgy. He was recently awarded "Siemens Inventor of the Year 2009" for outstanding innovation.



MRS On Demand

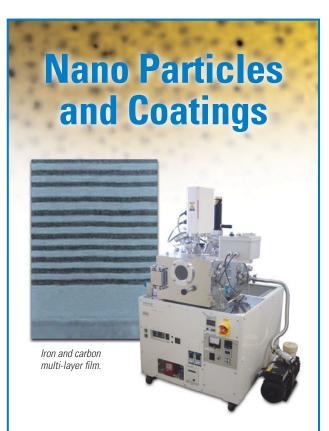
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