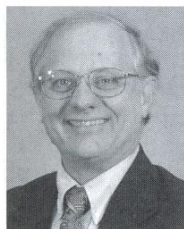


## Meet the TMS 2011 Fellows

The 2011 Class of TMS Fellows celebrates the spectrum of materials science and engineering and the impact of materials advancements on society. The highest honor bestowed by TMS, the Fellow Award not only recognizes individuals as eminent authorities in their disciplines, but also honors their contributions to the profession and their outstanding service to TMS. Congratulations to the following individuals who have been selected for this newest Class of Fellows. The profiles presented in this article are based on information and comments gleaned from their nomination packets to offer a sense of their professional achievements and personal qualities. They will be officially inducted at the TMS 2011 Annual Meeting, February 27–March 3, in San Diego, California.

### David L. Bourell

*Temple Foundation Professor,  
Mechanical Engineering Department,  
The University of Texas at Austin*



**Citation:** “For pioneering advances in the materials engineering of powder-based additive manufacturing, particularly selective laser sintering, including the development of binders and post-processing methods.”

Bourell’s principal technical contributions have been in the area of powder materials, specifically the solid freeform fabrication (SFF) of metals and ceramics. He has also spearheaded the development and application of a key SFF technology—selective laser sintering (SLS)—through broad research related to binder selection, sintering behavior/kinetics during SLS, and post-sintering densification. In addition to SLS of conventional microcrystalline alloys, Bourell has made significant contributions in the area of SLS of nanocrystalline materials and high-temperature superconductors and is credited for developing and applying

powder densification maps to quantify densification mechanisms and kinetics of materials synthesized via SFF. “From an engineering perspective, his work has played a critical role in the commercialization of SLS systems,” wrote one nominator.

Bourell received his B.S. in mechanical engineering from Texas A&M University, and earned both his M.S. and Ph.D. in materials science and engineering from Stanford University. He joined TMS in 1980 as a graduate student and attended his first TMS Annual Meeting that same year. Since 1982, he has been a member or chair of at least one TMS technical or administrative committee. His TMS service includes: chair of the TMS Application to Practice, Educator, and Leadership Awards Sub-Committee; member and chair of the Shaping and Forming Committee, and member of the Materials Processing & Manufacturing Division (MPMD) Administrative Council. In 2009, he received the MPMD Distinguished Scientist/Engineer Award.

Said Bourell, “Over the years, TMS has provided a forum for communication and interaction which has been instrumental. Therefore, it is a particular honor to receive this recognition from TMS.”

### Kazuhiro Hono

*Fellow, National Institute for Materials Science (NIMS), Japan;  
Managing Director, Magnetic Materials Center and Group Leader, Magnetic Materials Group, NIMS; Principal Investigator, International Center for Materials Nanoarchitectonics, NIMS (WPI Center); Professor, Graduate School of Pure and Applied Sciences, University of Tsukuba*



**Citation:** “For seminal contributions to the understanding of structure-property relations in metals and alloys and functional materials.”

Hono is probably best known for his pioneering use of atom probe field

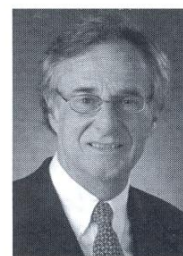
ion microscopy/tomography and high resolution electron microscopy to push advancement in the use of microstructure manipulation to enhance the performance of magnetic and nanocrystalline materials. He has also made key contributions to the understanding of precipitation hardening alloys for structural applications. “He is one of the rare individuals whose work is so much more than just to contribute new information to a field,” wrote his nominator. “Instead, Kazuhiro Hono’s world-class materials research and scholarship have provided key insight in seeking new directions of inquiry.”

Hono earned his B.E. and M.E. degrees in materials science at Tohoku University, Japan, and received his Ph.D. in metals science and engineering at The Pennsylvania State University. He joined NIMS in 1995 as a senior researcher, and was quickly promoted to laboratory head and research group director. He was named a NIMS Fellow in 2004 and managing director in 2006. A prolific author, he is the principal editor for *Scripta Materialia* and an editor of *Acta Materialia*. He joined TMS as a graduate student in 1984.

“I consider the reception of the TMS Fellows Award as the highlight of my professional career,” said Hono. “Through TMS, I have met many distinguished scientists in the metallurgical and materials science community, and I am fortunate that some of them have provided me the opportunity to be considered for this award. I want to share this honor with my colleagues and graduate students at NIMS and the University of Tsukuba.”

### Marc André Meyers

*Professor of Materials Science,  
University of California, San Diego*



**Citation:** “For global leadership in the field of mechanical behavior of materials and for original and seminal contributions to fundamental mechanisms in shock



compression, shear localization, grain-size effects, and biological materials.”

For more than 37 years, Meyers has led the way in the study of the dynamic behavior of materials, encompassing dynamic processing, deformation, and fracture. Over time, he has also explored extractive metallurgy, processing, and physical metallurgy. He has most recently expanded his research to include the structural aspects of biological materials, as well as ultrafine grained and nanocrystalline metals. At the time Meyers began his career, there were “a number of scattered and highly specialized areas of research,” including shock compression, ballistic effects, shock synthesis, shear bands, and dynamic fracture. Meyers “dedicated his career to synthesizing these disparate activities and focusing them within a unifying theme—the dynamic behavior of materials,” a nominator wrote.

Meyers earned his undergraduate degree in mechanical engineering from the University of Minas Gerais, Brazil. He received both his M.S. in materials science and his Ph.D. in physical metallurgy from the University of Denver. A TMS member since 1974, Meyers received the Distinguished Materials Scientist/Engineer Award from the TMS Structural Materials Division in 2003. In 2010, he was honored with the *Acta Materialia* Materials and Society Award. His volunteer leadership to TMS has included chairing the Biomaterials Committee, organizing or co-organizing an array of symposia, and serving as TMS representative and international coordinator of the first TMS-ABM International Materials Congress, held in July 2010.

#### Anthony D. Rollett

*Professor, Materials Science and Engineering, Carnegie Mellon University*



**Citation:** “For his seminal contributions to the understanding of microstructural evolution and his achievements in making texture analysis accessible to the community.”

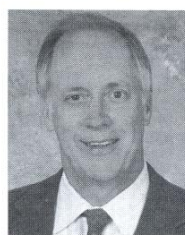
Rollett’s current research focuses on the quantification of microstructure-property relationships via experimental characterization and mesoscale modeling

of materials processing and properties. His key technical contributions have advanced the areas of modeling of microstructure evolution and the determination and representation of microstructure and crystallographic texture. “Early in his career, he was a member of the team that developed the texture-analysis software popLA and deformation-texture-modeling code LApp. For many years, these codes were the gold standard in the area and served as invaluable research tools for many,” a nominator wrote. Rollett has also been a leader in developing, applying, and validating Monte-Carlo codes for simulating grain growth and recrystallization during annealing.

Rollett obtained an M.A. in metallurgy and materials science from Cambridge University and a Ph.D. in materials engineering from Drexel University. He worked for Los Alamos National Laboratory for 16 years and was eventually named deputy director of the Materials Science and Technology Division. He moved to Carnegie Mellon University, Pittsburgh, Pennsylvania, to serve as the Materials Science and Engineering department head from 1995 to 2000. He joined TMS in 1986 and, since 1989, has organized or co-organized numerous symposia and specialty meetings for the society. He served on the TMS Board of Directors from 1997–2001 with a special responsibility for education, was chair of the Computational Materials Committee, and a member of the Shaping and Forming Committee and selection committees for the *Acta Materialia* Medal and the Hume-Rothery Award.

#### Steven Zinkle

*Director, Material Science and Technology Division; UT-Battelle Corporate Fellow, Oak Ridge National Laboratory*



**Citation:** “For contributions to our improved understanding of radiation effects and deformation mechanisms in metals and ceramics for fission and fusion energy systems.”

Zinkle joined the former Metals and Ceramics Division of Oak Ridge National Laboratory (ORNL) as a Wigner Fellow. He also led the ORNL Nuclear Materi-

als Science and Technology Group and managed the fusion materials and space reactor materials programs. His research has focused on transmission electron microscopy and physical properties of metals, ceramic insulations, and structural ceramics, as well as fundamental mechanisms of deformation and fracture. He has broad expertise in both metallic and ceramic materials for nuclear technology applications and is a leading expert on radiation effects on materials.

Zinkle’s work has “directly influenced the selection of materials and the design of plasma-facing structure, diagnostic insulators, and primary structure for ITER, the next major fusion experiment. He has also been a major contributor to the formulation and execution of materials research strategies and materials engineering in support of the Generation IV nuclear power reactor program and the NASA Prometheus space reactor program,” a nominator stated. Zinkle has contributed to numerous national and international advisory panels focused on the advancement of energy technologies, including the Energy Materials Blue Ribbon Panel convened by TMS in February 2010 and commissioned by the U.S. Department of Energy (DOE) Industrial Technologies Program (ITP). He has also served as a chair and long-time member of the TMS Nuclear Materials Committee.

Zinkle earned his B.S. and M.S. in nuclear engineering, as well as an M.S. in materials science and a Ph.D. in nuclear engineering, from the University of Wisconsin, Madison. “My association with TMS extends back to my first presentation at a scientific conference when I was a young graduate student,” said Zinkle. “Over the years, TMS has consistently maintained its status as a premier venue for research that encompasses fundamental to applied materials research and development topics. I am deeply grateful for the numerous collaborations with colleagues that have enriched my career and I am honored to join the select ranks of distinguished TMS Fellows.”

For additional information on the TMS Fellow Award, the nomination process or other aspects of the TMS Professional Recognition Program, go to [www.tms.org/society/tmsawards.aspx](http://www.tms.org/society/tmsawards.aspx).