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Editorial

The new Editors

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As the number of submissions increases, we have added several new Editors. You will also have noticed that we have started to use a system of broad categories to group the published papers rather than 'Original Paper' or 'Article' which wasn't terribly helpful. Our new Editors generally emphasize one of these categories, but some like Corinne Packard and Naiqin Zhao bridge several fields. Unfortunately, we have also said farewell to Mark Aindow after 13 years as an Editor of the Journal of Materials Science. Mark collected together the papers for the 50th Anniversary issue [J Mater Sci 51(1)] and organized the first years of the prestigious Cahn Prize, which Grant Norton now coordinates. We can't thank him enough and wish him every success for the future. Mark's expertise was broadly focused on metals (though he would also be excited by materials topics ranging from atomic resolution TEM to ice-cream wafers), so we are particularly pleased to welcome Antonia Antoniou and Nate Mara who work *inter alia* on metals. Mark Bissett and Kyle Brinkman both strengthen our coverage of Chemical Routes to Materials, but also bring a focus to our sections on Energy Materials. Polymer papers have long been a strength of the Journal of Materials Science with Bob Young having the record number of 77 published papers (an h-index of 30 just for these papers) and Steve Eichhorn's review on cellulose (J Mater Sci 45(1) 1–33, 2010) having passed the 1000 citations. So it is a pleasure to welcome Dale Huber and Maude Jimenez—Maude joins Jaime Grunlan in emphasizing flame-retardant materials and Annela Seddon in the materials science aspects of biomaterials, while Dale links nano and polymers.

In the following, I have asked our new Editors to summarize their background—I have then modified these bios to highlight some of their successes that will be particularly relevant to the Journal of Materials Science. You will also see several connections to the Center for Integrated Nanotechnologies (CINT) which is one of the US DOE's five NanoScience Research Center (the NSRCs). CINT is located at both Los Alamos National Laboratory (LANL) and Sandia National Laboratories and encourages materials

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scientists worldwide to contact them to discuss the possibility of participating in research there. (For more see www.CINT.LANL.gov.)

Antonia Antoniou is an Associate Professor in the George W. Woodruff School of Mechanical Engineering at Georgia Institute of Technology. She received her Ph.D. in Engineering Mechanics at Iowa State University in 2006. She then joined CINT at LANL as a postdoctoral associate. Her main area of research is the experimental investigation of nanostructured material systems, especially as related to understanding of cross-scale deformation mechanisms from nanoscale to mesoscale. She is particularly interested in the synthesis of nanostructured materials, including functionalized nanoporous metals and ceramics. In 2014, she received an NSF CAREER award in the field of mechanics of materials and the Lockheed Martin Inspirational Young Faculty award for her teaching and mentoring efforts.

Mark A. Bissett obtained his B.Sc. in nanotechnology from Flinders University (Adelaide, Australia); he obtained his Ph.D. from Flinders U in 2011. In 2012, he joined the Institute for Materials Chemistry and Engineering (IMCE) in Kyushu University (Japan) as a postdoctoral researcher and in 2013 was appointed as a Research Assistant Professor. At the beginning of 2014, he joined the University of Manchester in the School of Chemistry as a Research Associate before moving to the School of Materials at the beginning of 2016. In November 2016, he was appointed as a Lecturer in nanomaterials within the School of Materials and in the National Graphene Institute (NGI) where he now has an office; these two institutions in the University of Manchester will shortly be joined by the Graphene Engineering Innovation Center (GEIC). Mark's research interests include the synthesis, functionalization, and characterization of nanomaterials, especially carbon nanotubes and two-dimensional materials such as graphene and transition metal dichalcogenides, and their integration into applications, including photovoltaics, flexible composites, and electrochemical energy storage. His research includes investigating the strain within graphene-reinforced nanocomposites using Raman spectroscopy, optimizing the performance of graphene-based supercapacitors, and creating porous 3D structures of various 2D materials that can act as electrodes in batteries.

Kyle Brinkman is an Associate Professor in the Department of Materials Science and Engineering at Clemson University in Clemson, South Carolina. He completed his B.S. in Chemical Engineering and an M.S. in Materials Science and Engineering at Clemson University before pursing a Ph.D. in Materials Science and Engineering in the Ceramics Laboratory of Prof. Nava Setter at the Swiss Federal Institute of Technology (EPFL) in Lausanne, Switzerland. He joined Clemson in 2014 from the DOE's Savannah River National Laboratory (SRNL) where he was a Principal Engineer in the Science and Technology. Prior to working at SRNL, he was a fellow of the Japanese Society for the Promotion of Science (JSPS) working in the National Advanced Institute of Science and Technology (AIST) in Tsukuba, Japan. Kyle was the recipient of the Karl Schwartzwalder Professional Achievement in Ceramic Engineering (PACE) from the American Ceramic Society in 2015, the TMS Young Leaders International Scholar Award in 2015, the US DOE Fuel Cycle Research and Development Early Career Researcher Award in 2013, and the SRNL Laboratory Director's Early Career Exceptional Achievement Award in 2011. His research is in the application areas of solid-state lithium batteries; electronic ceramic materials for gas separation (H_2, O_2, and CO_2); structure/property relations in solid oxide fuel cell systems; high-temperature inorganic separation membranes; and radiation-tolerant crystalline ceramics for applications in nuclear energy. The scientific theme of his research is the control of mixed ionic and electronic transport through interfacial engineering.

Dale Huber is a materials chemist at Sandia National Laboratories in Albuquerque, USA. He completed a B.A. in chemistry from the University of Pennsylvania in 1995, and a Ph.D. in Polymer Science from the University of Connecticut in 2000. After completing his Ph.D., he accepted a postdoctoral position at Sandia National Laboratories and 2 years later joined the permanent technical staff. For the last 10 years, he has been located at CINT where his research focuses on the synthesis of nanomaterials. He divides his time between the synthesis of nanoparticle polymers and the requisite characterization of the products. Of particular interest has been designing nanoparticle syntheses with an eye toward enhanced size control, reproducibility, and scalability and the control of magnetic properties in nanoparticles and nanocomposites. On the polymer front, he has focused on surface-initiated polymerizations to form polymer brushes, including multi-component

Top row from left to right: Antonia Antoniou, Mark A. Bissett, Kyle Brinkman, Dale Huber. Bottom row from left to right: Maude Jimenez, Nathan Mara, Corinne E. Packard, Naiqin Zhao.

mixed-polymer brushes. Recently, he has built a laboratory around the use of microfluidic synthesis, functionalization, and real-time characterization to improve his synthetic capabilities.

Maude Jimenez graduated from the National School of Chemistry of Lille (ENSCL, Lille, France) in 2003 with a master's degree in chemical engineering, and in the same year, obtained a research master's degree in organic and macromolecular chemistry. She obtained her Ph.D. in 2006 on the development of intumescent coatings for steel structures. In 2008, she became an assistant professor in Lille University (France) in the Unit of Materials and Transformations (UMET) with an interest in developing surface treatments. These surface treatments were designed not only for flame-retardant applications, but also for biomaterials, glass treatments, and antifouling applications. In 2013, Maude received the French 'Habilitation to supervise research' (HDR) and in 2016 became Professor in Lille University. Maude currently works on the design and understanding of various surface treatments (coatings, layer-by-layer, sol–gel, etc.), mainly for flame-retardant and antifouling applications. She has extended her research in the study of the functional durability of the coatings she develops and is looking at potential solutions to overcome these aging issues. Dr. Jimenez combines industrial and academic projects and collaborations in France and in other countries including the USA, Luxembourg, Canada, Iran, Switzerland, Spain, and the UK.

Nathan Mara is an Associate Professor at the University of Minnesota, Twin Cities campus. Prior to his position at the University, Nate spent 2 years as a Director's Postdoctoral Fellow and 10 years as a Staff Scientist at LANL. There, he was a founding co-director of the Institute for Materials Science and Thrust Leader for the Nanoscale Electronics and Mechanics thrust at CINT. Nate's research focuses on the relationship between microstructure and mechanical behaviors across length scales from nano to macro, with an emphasis on structural applications in extreme environments such as high temperature, high stresses, and high strain rates, and materials in radiation environments. He earned his Ph.D. in 2005 in Materials Science and Engineering from the University of California, Davis. Dr. Mara is the past chairman (chair 2013–2015) of the Nanomechanical Materials Behavior Committee of TMS and has published journal articles spanning topics from synthesis of bulk nanocomposites to the performance of advanced materials under extreme conditions; he has been cited more than 3200 times since 2012 (GS; Sept. 2017). He received the TMS Young Leader's Professional Development Award in 2012, the LANL Distinguished Mentor Performance Award in 2010

for his dedication to undergraduate and graduate student education at LANL, and the 2017 International Journal of Plasticity Young Investigator Award for his contributions to modeling plastic deformation and mechanisms of metals and nanocomposites.

Corinne E. Packard is an Associate Professor in the George S. Ansell Metallurgical and Materials Engineering Department at the Colorado School of Mines and holds a joint appointment at the National Renewable Energy Laboratory (NREL) in the National Center for Photovoltaics. Prior to her appointment at Mines, Dr. Packard earned her Ph.D. in Materials Science & Engineering from MIT. Her research program applies experimental techniques that are commonly used to characterize mechanical behavior and properties in structural materials to solve problems in ceramics, predominantly for energy-related applications. She has focused on elucidating the principles and mechanisms of deformation behavior in ceramics at the micro- and nanoscales. Specific examples include (i) efforts to determine the role of chemistry in controlling the deformation of rare earth orthophosphates; (ii) engineering fracture in high-cost semiconductors to enable dramatic photovoltaic cost reduction through wafer reuse; (iii) mapping mechanical properties in organic-rich shales (naturally occurring organic/ceramic composites); (iv) identifying fracture behavior and an associated accumulation of lithium in failing cathodes in lithium-ion batteries (LIBs); (v) using information on mechanical properties to design for durability in transparent conducting oxides for photovoltaics and flexible electronics. In 2014, she received a NSF CAREER Award and was selected as a TMS Young Leader. In 2017, she received the AIME Robert Lansing Hardy Award, with the citation: 'for exceptional promise in determining mechanical behavior of materials at diminishing length scales across the spectrum of metals, ceramics, and glasses.' Dr. Packard presently serves as the chair of the Nanomechanical Materials Behavior Committee for TMS.

Naiqin Zhao is a Professor in the School of Materials Science & Engineering, Tianjin University, China. She obtained her Bachelors degree in Materials Science and Engineering in 1983 and Ph.D. in Materials Physics in 1997 at Tianjin University. She has been a visiting scholar and visiting professor in Illinois Institute of Technology, Vanderbilt University, Tohoku University, and the Hong Kong Polytechnic University for 3 years. Her research interests concern phase transformations and other properties of alloys, the design, fabrication, interface structure and properties of metallic matrix composites, the synthesis and characteristics of nanophase and nanocomposites and their applications for energy storage. The latter materials include LIBs and supercapacitors. Dr. Zhao led her research group to create a new method and principle for in situ synthesis of carbon nanotubes and graphene on metal matrices; these new methods significantly improved the microstructure and properties of the composites comparing with the traditional ex situ processing. Naiqin has published more than 260 journal papers, including papers in the Journal of Materials Science. She has authored 4 academic books and obtained $\sim$ 30 granted Chinese patents. She received the National Award for Famous Teachers in Higher Education Institutions from the Ministry of education of China (2011), the National High-level Personnel of Special Support Program award (2014), the First prize of Natural Science, Tianjin Science and Technology Commission (2010), and the award of Excellent Doctoral Dissertation Advisor by Ministry of Education of China (2010). Dr. Zhao is a member of Council of the Chinese Society for Composites Materials.