ANNOUNCING THE 2022 TMS AWARD RECIPIENTS

MEGAN ENRIGHT

TMS
The Minerals, Metals & Materials Society

AIME
AMERICAN INSTITUTE OF MINING,
METALLURGICAL, AND PETROLEUM ENGINEERS

TMS
FOUNDATION

2023 TMS AWARDS NOMINATIONS DUE APRIL 1

Do you have a colleague who has made a significant impact on their field? Have they been of great service to their community or to TMS? Honor their contributions and recognize their work by nominating them for a 2023 TMS award.

The nomination deadline for most 2023 TMS awards is April 1, 2022.

Visit awards.tms.org to explore the many honors and awards available through TMS and to learn more about the nomination process. For additional information, contact Deborah Hixon, TMS Awards Program Manager, at hixon@tms.org.

Providing encouragement and highlighting role models that embody the hard work, dedication, and success of members of the minerals, metals, and materials field is a crucial way that conferring TMS awards advance the profession. These honors span the full gambit of career stages by celebrating everything from outstanding lifetime contributions to the field, to the achievement of those whose careers are just getting started. Publicly honoring award recipients aids in the advancement of the entire community through career growth, methods to share knowledge, and opportunities to inspire others to reach for new heights.

This article highlights the Society-level awards which were conferred during the TMS-AIME Awards Ceremony at the TMS 2022 Annual Meeting & Exhibition (TMS2022) in Anaheim, California held from February 27-March 3, 2022. Visit www.tms.org/TMS2022 for additional information.

SOCIETY AWARDS

2022 TMS FELLOWS

The class of Fellow is TMS's highest honor. To be inducted, a candidate must be recognized as the leading authority and contributor to the practice of metallurgy, materials science, and technology, with strong consideration given for outstanding service to the Society.

Eduard Arzt
Professor, Leibniz Institute for New Materials

Citation: *For acting as a bridge between US and European materials research, global leadership, seminal contributions to the field, and leading major materials*

research institutes.

"I am thrilled to receive a 2022 TMS Fellow Award and hope very much that in-person proceedings will be possible. It is a great privilege for us scientists to be able to live in a world where ideas flow freely across boundaries and to entertain international ties on a professional and on a personal level. TMS with its international outlook greatly underpins our efforts to promote worldwide science solutions and, in the process, international understanding."

Jiann-Yang (Jim) Hwang
Professor, Michigan Technological University

Citation: *For pioneering research on microwave-assisted metallurgy, for outstanding innovations on mineral processing, for exceptional leadership*

and service to TMS, and for excellent student mentoring.

"TMS for the last 30 years has been the place for me to communicate with colleagues, introduce my students, and serve the community through creating various platforms for new technology developments. This Fellow Award shows my efforts and contributions to the minerals, metals, and materials field has been recognized. I am very grateful to my colleagues and the Society, especially to those who have been working closely with me in the EPD division."

John Lewandowski
Distinguished University Professor and Arthur P. Armington Professor of Engineering II, Case Western Reserve University

Citation: *For sustained research, teaching, service, and mentoring*

activities related to the areas of processing/structure/mechanical property relationships on conventional and advanced structural materials.

"This award gives me the opportunity to thank my family and the many TMS members and other colleagues that have provided great support and mentorship over the years. Professionally, this includes those at CMU and Cambridge University as well as those at CWRU for more than 35 years. I have appreciated the financial support from various agencies, companies, and benefactors to enable me to work with such great colleagues and students. I look forward to continuing such interactions and will strive to provide guidance to others in a manner that I have been fortunate to have experienced."

Ju Li
Professor, Massachusetts Institute of Technology

Citation: *For ground-breaking work on understanding the fundamental properties of ultra-strength materials and development and implementation of*

elastic strain engineering.

"I am honored and humbled to be in the TMS Fellow class of 2022. TMS has played a key role in my career development, for which I'm forever grateful."

Zi-Kui Liu
Dorothy Pate Enright Professor of Materials Science and Engineering, Pennsylvania State University

Citation: *For seminal contributions to fundamentals of thermodynamics and development of computational*

approaches and tools for predictions of properties and design of materials.

"I am honored in receiving the TMS Fellow Award. I would like to thank TMS for providing all the terrific professional services to its members and the materials community, which have enabled me to interact with many great scientists, shape my

research programs, and enhance my contributions to our community. I am very grateful for all my current and former students and research fellows for their willingness and diligence in working with me, so many wonderful collaborators who have been sharing their scientific insights with our group, excellent administrative supports from the Pennsylvania State University at all levels, and the foundational and inspirational education that I received in China and Sweden that drives my curiosity."

Kathy Lu
Professor, Virginia Polytechnic Institute and State University

Citation: *For seminal contributions to the fundamental and applied research of materials science and engineering, especially regarding materials synthesis,*

processing, and performance in demanding environments.

"This award is the highest honor and recognition for my contribution to the fundamental and applied research of materials science and engineering, especially regarding materials synthesis, processing, and performance in demanding environments."

Jan D. Miller
Ivor D. Thomas Distinguished Professor of Metallurgical Engineering, University of Utah

Citation: *For seminal contributions to the characterization and understanding of interfacial phenomena in mineral*

processing and extractive metallurgy as well as associated mentoring and teaching.

"It is a special pleasure to be selected as a TMS Fellow and to be included with such a distinguished group of individuals. For many years TMS has provided important venues to communicate significant research results, thus facilitating advances in science and technology. The TMS opportunities to publish/present research results are greatly appreciated, and extend to many of our students, representing an important aspect of their education."

Amit Misra
Professor and Department Chair, University of Michigan

Citation: *For pioneering research in nanomechanics and interface-enabled mechanical behavior and radiation effects in multiphase and multilayered*

materials, professional leadership, and mentoring of early career scientists.

"I feel honored to be recognized with the TMS Fellow Award and am grateful for the support from my colleagues, friends, and family, and very thankful of the TMS awards committees and my nominators and letter writers. I thank TMS for being a champion for metallurgy and structural materials research and providing the platform for my continued professional development since I was a graduate student."

Anil Sachdev
Lab Group Manager, General Motors Global Research and Development

Citation: *For contributions to implementing lightweight products through computational materials engineering and for efforts to globalize*

materials research.

Patrice Turchi
Senior Scientist, Lawrence Livermore National Laboratory

Citation: *For exceptional and pioneering contributions in electronic structure-based theories of alloys, world-class leadership to promoting materials*

science, and tremendous involvement to professional societies.

"I am grateful and humbled by this honor bestowed by my colleagues, and I am honored to have my name included in the list of those who were presented in the past with the TMS Fellow Award. By virtually every measure, it is easy to recognize that TMS remains the society of choice for everything that deals with minerals, metals, and materials, and that spans from extraction to recycling with all the scientific and engineering science in between, like I have said for more than 30 years now. For these reasons, I remain very attached to what this professional scientific society has to offer to us as a community of scientists and will continue to do my best to honor what this award really means."

2022 BRIMACOMBE MEDALISTS

This mid-career award recognizes individuals with sustained excellence and achievement in business, technology, education, public policy, or science related to minerals, metals, or materials science and engineering, and a record of continuing service to the profession.

Megan Cordill
Deputy Director, Erich Schmid Institute for Materials Science, Austrian Academy of Sciences

Citation: *For sustained excellence and achievement in the science and technology of mechanical behavior of thin films and an*

exceptional and continuing service to the profession.

"TMS is my home society and being recognized by my peers for scientific achievement is an honor."

Michael Demkowicz
Associate Professor, Texas A&M University

Citation: *For atomistic modeling of interface structures and defect interactions for nuclear energy and structural applications, and professional service to TMS and the materials research community.*

"TMS is a vibrant community of scientists and engineers at the frontiers of materials research and development. It is my great honor that this community has chosen me to receive the Brimacombe Medal. I am especially grateful to all those who mentored, supported, and encouraged me throughout my career."

Khalid Hattar
Center for Integrated Nanotechnologies
Scientist, Sandia National
Laboratories

Citation: *For extensive contributions to understand material response under extreme environments through the*

development of in-situ microscopy capabilities. And for outstanding mentorship of next-generation materials scientists.

"I am humbled and honored to join the long list of amazing scientists and engineers to be named J. Keith Brimacombe Medalists. I highly value my TMS membership which has provided exceptional professional opportunities, thought provoking and career altering discussions, sparks that ignited several decade-long and extremely fruitful collaborations, and many fond memories of the last amazing conference before the world shutdown. I would be amiss not to thank my mentors, colleagues, friends, post-docs, student interns, and especially my family, as without their patience and support none of my career accomplishments would be possible."

Edward Herderick
Director of Additive Manufacturing, The
Ohio State University Center for Design
and Manufacturing Excellence

Citation: *For exemplary leadership and contributions to the industrialization of Additive Manufacturing and service to TMS.*

"I am thrilled to join this year's class of Brimacombe Medalists and am grateful and appreciative of TMS and my colleagues, collaborators, and students over the years who have made it so much fun and rewarding to pursue a career in materials science and engineering. I really believe that the TMS community has the tools and knowhow to address societal challenges through collaboration and developing the next generation in our profession. Legendary Ohio State football coach Woody Hayes had a saying: "Pay it Forward" and I think that Keith Brimacombe would have really loved that sentiment. I'm looking forward to doing that with my fellow TMS members for years to come."

Peter Hosemann
Professor, University of California,
Berkeley

Citation: *For contribution to micro and macroscale mechanical testing of irradiated materials and in-situ materials testing and continued dedication to TMS*

and education.

"TMS has been my professional home ever since I entered the profession as a material scientist and has been instrumental in my professional development ever since. The inclusive and bottom-up nature of TMS as an organization makes it a very welcoming Society. The Brimacombe Medal reflects this environment very well and as such I am extremely thankful and humbled to receive this award. I thank TMS, my colleagues, friends, and family for their support over the years who enabled me to work in my profession and I am looking forward to many TMS events and engagements in the future."

Jun Lou
Professor, Rice University

Citation: *For sustained contributions to the development of low-dimensional materials and the understanding of their complex electro-chemical and mechanical behaviors, and for dedication*

to service.

"It is a great honor for me to receive the prestigious Brimacombe Medal this year. TMS has played a very important role in my academic career development, including delivering my first ever conference presentation twenty years ago, receiving a young leaders award, organizing several exciting symposia with outstanding speakers and participants, and providing a vibrant professional community I call an intellectual home. I look forward to continuing active engagement with TMS in the years to come."

Akane Suzuki
Principal Engineer, GE Research

Citation: *For sustained development of high-temperature alloys for critical components of aircraft engines and power generation gas turbines and advancing understanding of their*

operational life-limiting behavior.

"I am truly honored and grateful to receive the TMS Brimacombe Medal. I am fortunate to be a part of TMS and thankful for the tremendous opportunities it provides through conferences and technical committee activities. I wish to thank my colleagues, peers, and mentors for their support, encouragement, and inspiration."

Michael Tonks
Professor, University of Florida

Citation: *For contributions in computational materials science approaches for materials in harsh environments.*

"TMS is an excellent professional society and my membership in it has had a large impact on my career. I am honored and humbled to be recognized by them as a Brimacombe Medalist."

ALEXANDER SCOTT DISTINGUISHED SERVICE AWARD

Recognizing a member's outstanding contributions to TMS, this award is typically presented for 10 or more years of TMS service in membership development, student chapters, education, and professional affairs, and/or other Society-level activity.

Carl Cady
Research Engineer, Los Alamos National Laboratory

Citation: *For dedicated and sustained service to TMS and its members, particularly to improvements in the quality of programming at TMS annual meetings and at Materials Science & Technology conferences.*

"It continues to be my honor to work with so many colleagues and TMS staff that give their time and energy to make our Society better. The relationships that I have developed with other volunteers have been beneficial in my career development, both in the information and knowledge that is shared by more personal interaction, but also in having a broader network of contacts within our field...I am honored to be given this award because it means that I have contributed to the success of our Society. I hope that I can inspire others to do more. Your efforts will also be rewarded as mine have."

JULIA AND JOHANNES WEERTMAN EDUCATOR AWARD

This award recognizes an individual who has made outstanding contributions to education in metallurgical engineering and/or materials science and engineering.

Gregory Olson
ThermoCalc Professor of the Practice, Massachusetts Institute of Technology

Citation: *Pioneering contributions and leadership in the integration of materials design into the undergraduate engineering curriculum.*

"I will always be grateful for the advice and support of Hans and Julia during my transition from researcher to educator, tackling the prescient challenge of teaching computational materials design to undergraduates some 30 years ago."

LEADERSHIP AWARD

This award recognizes an individual who has demonstrated outstanding leadership in the national and international materials community.

Steven Zinkle
Governor's Chair Professor, University of Tennessee

Citation: *For research leadership utilizing microstructure/property relationships that has enabled improved understanding of operational limits and design strategies for high-performance radiation-resistant materials.*

"My research career has been integrally connected with TMS, beginning with my first technical presentation at a joint TMS/ASM Fall meeting when I was a 2nd-year graduate student. I have enormously benefited from the personal interactions and technical insights gleaned from TMS meetings. I am, therefore, deeply grateful for being recognized with the TMS Leadership Award."

RESEARCH TO INDUSTRIAL PRACTICE AWARD

This award recognizes an individual who has demonstrated outstanding achievement in transferring research results or findings into commercial production and practical use.

Oden Warren
General Manager, Bruker Nano Surfaces Division

Citation: *For the development of advanced commercial nanomechanical testing instrumentation and experimental techniques to determine structure-mechanical property relationships in materials.*

BRUCE CHALMERS AWARD

Honors outstanding contributions to the science and/or technology of materials processing by an individual.

Carl Thompson
Stavros Salapatas Professor of Materials Science and Engineering, Massachusetts Institute of Technology

Citation: *For pioneering scholarly work defining the processing-structure-property connections in thin-film and small-scale metallic materials broadly impacting the microelectronics industry.*

"I am deeply honored to have been chosen for this award. While Professor Chalmers' own research focused on solidification, his fundamental focus was on linking new insights into the mechanisms of structure evolution, to new ways of making materials that achieved engineering goals. He was an early practitioner and advocate for this approach that now forms the basis of materials science and engineering as we know it today, whether it involves development of the scientific basis for processing of ingots or thin films."

MORRIS COHEN AWARD

This award recognizes an individual who has made outstanding contributions to the science and/or technology of materials properties. The award includes a life membership to TMS.

Huseyin Sehitoglu
Professor, University of Illinois at Urbana-Champaign

Citation: *For outstanding lifelong contributions to the understanding of the fatigue of metals.*

"It is an honor to receive this TMS award paying tribute to Morris Cohen whose papers I have studied and learned from, especially on the role of stress state on phase transformations. His papers on the role of transformation dislocations helped me formulate the energetics of transformation in my own work on shape memory alloys. It is especially rewarding to receive this award from TMS considering their very high standards."

CYRIL STANLEY SMITH AWARD

This award recognizes outstanding contributions to the science and/or technology of materials structure.

Gregory Olson
ThermoCalc Professor of the Practice, Massachusetts Institute of Technology

Citation: *Pioneering contributions in materials design methodologies using a systems-based approach to accelerate materials development.*

"This award has a very special meaning to me. Through inspiring interactions with Cyril in the 1980s, his vision of a systems approach to hierarchical microstructure formed the foundation of the materials design methodology on which my career has been based."

OLEG D. SHERBY AWARD

This award recognizes an individual, or small group of collaborators, who has made significant contributions to the understanding of the behavior of materials at high temperatures.

Michael Kassner
Professor, University of Southern California

Citation: *For outstanding work and contributions to the study of creep and high temperature plasticity including his seminal book "Fundamentals of Creep in Metals and Alloys".*

"I have been a member of TMS for over 40 Years. I love the organization."

WILLIAM HUME-ROTHERY AWARD

Awarded in recognition of exceptional scholarly contributions to the science of alloys.

Anton Van der Ven
Professor, University of California, Santa Barbara

Citation: *For distinguished contributions to computational materials science and application of first-principles statistical mechanics methods to predict properties*

of alloys, oxides, and battery materials.

Presentation: *"Study of Ferroelectricity and Phase Transitions in Hafnia"*

INSTITUTE OF METALS LECTURER & ROBERT FRANKLIN MEHL AWARD

This award recognizes an outstanding scientific leader by inviting them to present a lecture at the Society's Annual Meeting on a technical subject of particular interest in the materials science and application of metals program areas.

Ke Lu
Director, Institute of Metal Research

Citation: *For his seminal contribution to the understanding of the mechanical behaviors of nanostructured metals and his world-class leadership of materials research.*

"The TMS 2022 IOM Lecture/Mehl"

Award is an extraordinary recognition for me. I am deeply humbled to join the stellar awardee list over the past 100 years, in which many names I learned are from textbooks of materials science and engineering. It is an extra honor for me to follow T.S. Ke, one of key pioneers of materials science in China and a distinguished predecessor of my institute, to receive this prestigious award. I am inspired by this award to deepen explorations in the rich territory of structural materials, especially metals and alloys, and to promote future generations."

Presentation: *"Schwarz Crystal Structures in Extremely Fine-Grained Metals"*

ELLEN SWALLOW RICHARDS DIVERSITY AWARD

This award recognizes an individual who, in the remarkable pioneering spirit of Ellen Swallow Richards, has helped or inspired others to overcome personal, professional, educational, cultural, or institutional adversity to pursue a career in minerals, metals, and/or materials.

Cammy Abernathy
Dean, University of Florida

Citation: *For seminal contributions in compound semiconductor processing and efforts to eliminate institutional barriers to achieve the exemplar model for diversity, equity, and inclusion.*

"It is an incredible honor to receive this award. Ellen Swallow Richards was an inspiration for so many young women at MIT and in the field of materials. Though there is certainly more to be done, it is greatly fulfilling to see how our discipline has grown in importance and diversity over the decades since her trailblazing career. I am very grateful to TMS and to Jeffery and Geraldine McCulley Wadsworth for bringing special attention to the importance of diversity, and I am truly humbled to be considered among those who have helped to advance our discipline in this regard."

WILLIAM D. NIX AWARD

This award is established to honor William D. Nix and the tremendous legacy that he has developed and shared with the minerals, metals, and materials community, and to highlight and promote continued progress and innovation relevant to research into the underlying mechanisms and mechanical behavior of macro-, micro-, and nanoscale materials.

Huajian Gao
Distinguished University Professor,
Nanyang Technological University
Citation: *For seminal contributions to the mechanics of engineering and biological materials at multiple length scales, and for mentoring exceptional members of the next generation of scientists.*

"William Nix was my mentor and role model throughout my career. It is with enormous gratitude that I accept this award in his honor."

Presentation: "Mechano-materials: Engineering Mechanical Properties of Materials with Internal Interfaces and Lightweight Structures"

SADOWAY MATERIALS INNOVATIONS AND ADVOCACY AWARD

This award recognizes a mid-career individual with impactful and broad materials science and engineering achievements and a unique ability to champion their work and the materials science and engineering field through education, public advocacy, or entrepreneurship, particularly in areas related to sustainability.

Elsa Olivetti
Associate Professor, Massachusetts Institute of Technology
Citation: *For leadership and innovative and pioneering work for sustainability of our material resources in three axes: education, policy, and technical innovations.*

"It is a tremendous privilege to honor the extraordinary and broad impact that Don Sadoway has had on our field...Don Sadoway has been an incredible mentor and intellectual inspiration to me along every dimension of my academic journey from advising

my Ph.D. thesis to learning from his teaching and the example he has set in working on problems of great societal importance. I am grateful and honored to be a part of the extraordinary community he catalyzed and fostered through his leadership including students, industrial collaborators, and academic colleagues. Finally, I am thankful to the TMS community, which has been critical in providing opportunities to build strong ties across research and educational initiatives, this award being one impactful way we can continue to build towards a more sustainable materials future."

EARLY CAREER FACULTY FELLOW

This award recognizes an assistant professor for his or her accomplishments that have advanced the academic institution where employed, and for abilities to broaden the technological profile of TMS.

Fadi Abdeljawad
Assistant Professor, Clemson University
Presentation: "Interface-driven Phenomena in Materials: From Nanostructuring to Additive Manufacturing"

"I am very honored and humbled by this recognition from TMS. I am also very grateful to the TMS Foundation for their continued support of early career professionals. Thank you to all my students, mentors, colleagues, and collaborators for their support. Ever since my first TMS annual meeting in 2010 as a first-year graduate student, TMS has become a home for all my research, professional development, and networking needs. TMS has been instrumental in advancing my career...I look forward to continuing to contribute to TMS in various activities and to advance the fascinating field of materials science."

Yu Zou
Assistant Professor, University of Toronto
Presentation: "Tailoring Defects in Alloy Design and Additive Manufacturing: An Analogy with Professional Development"

"It has been more than ten years since I attended my first TMS meeting, as a student, in San Diego, California in 2011. TMS has been my academic home through my different career stages – as a master's student, Ph.D. student, post-doctoral fellow, and now as an Assistant Professor. In TMS I met international leaders in my research field, attended student mixers and career events, and discussed with peers in poster or oral sessions. I enjoyed every moment from TMS. In 2019, I brought two of my Ph.D. students to the TMS meeting and introduced them to this dynamic atmosphere and I am looking forward to bringing more students and young professionals to this community. I am truly grateful for this recognition!"

TMS BEST PAPER CONTEST

This award recognizes student essays on global or national issues as well as technical research papers relating to any field of metallurgy or materials science

Best Paper Award - First Place Graduate

Di Xie
Student, University of Tennessee, Knoxville

Paper: "Plastic anisotropy and twin distributions near the fatigue crack tip of textured Mg alloys from in situ synchrotron x-ray diffraction

measurements and multiscale mechanics modeling"
"It is a great honor for me to receive this award. I would like to express sincere gratitude to the TMS Foundation and Material Advantage, which offer me a great opportunity to communicate with many excellent researchers about the state-the-art investigations and progress in my field. This award will boost my confidence in my current academic study and surely inspire me to further progress in my academic and research endeavors."

Best Paper Award - Second Place Graduate

Rakesh Kamath
Student, University of Tennessee, Knoxville

Paper: "In-situ, dynamic synchrotron x-ray radiography studies on melt pool evolution and solidification kinetics during laser fusion processing of Ti-6Al-4V"

"It is a huge honor to be recognized by one of the most renowned international professional organizations in the materials science community. I am very much thankful to the TMS Foundation for selecting me as the recipient amongst many of my highly qualified peers. I wish to express my sincere gratitude to my advisor, Hahn Choo, and mentor, Suresh Babu, for their constant guidance and encouragement throughout my dissertation research. I strongly believe this recognition will serve me well, both as a springboard for my future career and a source of inspiration that will enable me to give my best to materials research."

KAUFMAN CALPHAD SCHOLARSHIP

Awarded through CALPHAD Inc. and the TMS Foundation to sophomore or junior undergraduate students majoring in metallurgical engineering, materials science and engineering, or minerals processing/extraction programs.

Michael Bohnet
Student, Louisiana State University

"I am honored to receive the Kaufman CALPHAD scholarship and I would like to thank the TMS Foundation for making this opportunity possible. This scholarship will help ease my financial

burden as I pursue my master's degree in Data Science at the University of Texas at Austin."

AIME AWARDS

AIME HONORARY MEMBERSHIP AWARD

Conferred upon an individual for outstanding service to or distinguished scientific or engineering achievement in the fields embracing the activities of the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) and its Member Societies. As one of the highest honors that the Institute can bestow, this award is considered a pinnacle award.

Elizabeth Holm
Professor of Materials Science and Engineering, Carnegie Mellon University
Citation: For her outstanding service to TMS and distinguished scientific achievements in computational materials science and engineering.

AIME CHAMPION H. MATHEWSON AWARD

Awarded to the author(s) of a paper, or a series of closely related papers, representing the most notable contribution to metallurgical science during the period under review.

Rajendra Bordia, Clemson University; Diletta Giuntini, Eindhoven University of Technology; Tyler Harrington, University of California, San Diego; Alberto Molinari, University of Trento; Eugene Olevsky and Elsa Torresani, San Diego State University; Kenneth Vecchio, University of California, San Diego; and Chaoyi Zhu, EAG Laboratories

Paper: "Anisotropy of Mass Transfer During Sintering of Powder Materials with Pore-Particle Structure Orientation," *Metallurgical and Materials Transactions A*, February 2019.

"I am honored that our technical contribution was selected for this significant honor by our peers. I thank Maciej Pietrzyk for nominating our paper and the TMS Honors and Professional Recognition Committee and the TMS Board of Directors for selecting it for this prestigious award," said Bordia. "It is my honor to share this award with our collaborators. Over the past few years, TMS has been a great a platform for me to interact and share my ideas with scientists and researchers around the world. Undoubtedly, it has helped me to develop my career as a scientist with a special focus on materials characterization," Zhu added.

AIME ROBERT LANSING HARDY AWARD

For more than half a century, this award has recognized professionals under the age of 35 in the broad fields of metallurgy and materials science for exceptional promise of a successful career.

Ankit Srivastava
Associate Professor, Texas A&M University

Citation: *For pioneering contributions to microstructural mechanics and exceptional promise of thought leadership in materials design for*

enhanced mechanical performance.

"It is an honor to receive the TMS-AIME Robert Lansing Hardy Award and I sincerely hope to live up to the promise of the award. I am extremely grateful to my principal nominator, mentors, colleagues, and TMS. Participating in the activities of TMS has been a rewarding experience and has immensely impacted my professional development."

AIME HENRY DEWITT SMITH SCHOLARSHIPS

This scholarship is awarded to graduate students majoring in mineral, metals, and/or materials engineering. The award aims to advance the mineral industries by assisting students in the pursuit of graduate education in mining, metallurgical, materials, or petroleum-related disciplines.

Jennifer Bustillos
Student, Cornell University

"I am tremendously honored and grateful to have been selected as a Henry deWitt Smith Scholar. As an active Material Advantage member (since my undergraduate studies), I was

eager to participate in TMS student competitions and academic symposia. These opportunities presented by TMS have allowed me to interface with industry partners and students from all around the world to develop the necessary communication and networking skills to excel as a graduate student and professional in the future."

Ho Lun Chan
Graduate Student, University of Virginia

"This scholarship award serves not only as a generous financial support to academic studies, but also as a recognition to my continuing efforts to learn and prosper as an emerging

professional in the field of materials science. In 2018, I self-attended the TMS Annual Meeting & Exhibition as an undergraduate student having no clue about what materials science is. TMS and its conferences gave me exposure to the latest of the greatest that I would not be able to learn in school and defined my academic as well as professional goals."

TMS/SME/AIME JAMES DOUGLAS GOLD MEDAL

Honors distinguished achievement in nonferrous metallurgy, including both the beneficiation of ores and the alloying and utilization of nonferrous metals. This award is administered through TMS's Extraction & Processing Division (EPD) and the Society for Mining, Metallurgy & Exploration's (SME) Minerals & Metallurgical Processing Division (MPD).

Deepak Malhotra
Director, Magellan Gold Corporation

Citation: *For a lifetime of dedication to the industry.*

ACTA MATERIALIA AWARDS

GOLD MEDAL AWARD

Awarded to a proven leader in materials science and engineering whose research has significantly impacted the development of the discipline.

Dierk Raabe
Director, Max-Planck Institute

SILVER MEDAL AWARD

This award honors scientific contributions and leadership from academic, industry, and public sector leaders in the midst of their careers.

David Dye
Professor, Imperial College London

HOLLOMON MATERIALS AND SOCIETY AWARD

This recognition honors an individual who promotes understanding of the relationship and interactions between materials technology and societal interest or needs.

Alexander Michaelis
President and Professor, Fraunhofer Institute for Ceramic Technologies and Systems IKTS

MARY FORTUNE GLOBAL DIVERSITY AWARD

This award recognizes one or more of the following in the field of materials science and engineering: promotion of, or representation of, women and other under-represented groups in the materials science and engineering field; contributions to the field of materials science and engineering, including teaching, professional service, or research; demonstrated commitment to mentoring students and young professionals; and promotion of materials science and related professional activities in the broader community.

Amber Genau
Associate Professor, University of Alabama at Birmingham

ACTA MATERIALIA UNDERGRADUATE SCHOLARSHIP

Supported by the generosity of Acta Materialia Inc. and issued under the TMS Foundation, this scholarship is available to undergraduate students majoring in metallurgical engineering, materials science, and engineering, or to undergraduate students with a significant interest in the materials area.

Andrew Ruba
Student, Iowa State University
"I joined the Iowa State University (ISU) Material Advantage chapter during my freshman year of college. This was an excellent place to learn about the larger materials science and engineering community, as well as the various opportunities and experiences that the field offers. I am deeply grateful to both TMS and Acta Materialia Inc. for providing exposure, aid, and professional growth opportunities to undergraduate students. I will graduate in the fall of 2022 from ISU, and I look forward to working in R&D of advanced polymers or polymer composites."

Gladys Durán Durán
Student, Instituto Tecnológico de Morelia
"Being a part of the Material Advantage program gave me the tools to get ready to participate in and solve real problems and this scholarship will support the next step in my journey of material science research. After graduation, I plan to enroll in a master's program related to materials science and engineering focused on the development of new alloys for aerospace industry and renewable energy. I am grateful to the TMS Foundation for recognizing my effort and passion in this field. This is just the beginning!"

DIVISION AWARDS

In addition to the many Society-level awards administered by TMS, each of the Society's five divisions provide opportunities for recognition specific to the work performed in their areas of technical interest. More information on each of these awards, as well as quotes and photos from recipients, are available at awards.tms.org.

EXTRACTION & PROCESSING DIVISION**EXTRACTION & PROCESSING DIVISION (EPD) DISTINGUISHED LECTURE AWARD**

David Dreisinger
Professor and Industrial Research Chair in Hydrometallurgy, University of British Columbia

Citation: *In recognition to his international leadership and innovator spirit in research, development, and teaching of hydrometallurgy, supporting sustainable extraction, and processing of metals.*

Presentation: "Rare Earth and Critical Material Recovery from Peralkaline Volcanic Ores: Minerals Processing, Hydrometallurgy and Solvent Extraction Separation"

EPD DISTINGUISHED SERVICE AWARD

Corby Anderson
Harrison Western Professor, Colorado School of Mines

EPD SCIENCE AWARD

Megumi Akashi, Helmholtz-Zentrum Dresden-Rossendorf (HZDR); Sten Anders, HZDR; Sven Eckert, Head of Department Magnetohydrodynamics, HZDR; Markus Reuter, Senior Expert, SMS Group, Düsseldorf; Natalia Shevchenko, Research Fellow, HZDR; and Olga Keplinger, Senior Engineer Design Enablement, Globalfoundries (not pictured)

Paper: "X-ray Radioscopic Visualization of Bubbly Flows Injected Through a Top Submerged Lance into a Liquid Metal," *Metallurgical and Materials Transactions B*, February 2020.

EPD PYROMETALLURGY BEST PAPER AWARD

Gerardo Alvear-Flores, Rio Tinto; Joe Pease, Mineralis Consultants; and Carlos Risopatron, International Copper Study Group

Paper: "Processing of Complex Materials in the Copper Industry: Challenges and Opportunities Ahead," *JOM*, July 2020.

NAGY EL-KADDAH AWARD FOR BEST PAPER IN MHD IN MATERIAL PROCESSING

Christoph Beckermann, University of Iowa, and Vahid Khalajzadeh, MEMC
Paper: "Simulation of Shrinkage Porosity Formation During Alloy Solidification,"

Metallurgical and Materials Transactions A, May 2020.

FUNCTIONAL MATERIALS DIVISION

FUNCTIONAL MATERIALS DIVISION (FMD) JOHN BARDEEN AWARD

Long-Qing Chen
Hamer Professor of Materials Science & Engineering, Pennsylvania State University

FMD DISTINGUISHED SCIENTIST/ENGINEER AWARD

Roger Narayan
Professor of Biomedical Engineering, University of North Carolina

FMD JOURNAL OF ELECTRONIC MATERIALS BEST PAPER AWARD

Hongyan Du, Runhua Fan, Xueyan Fu, Yuliang Jiang, Rui Tian, Shengmei Wei, Guojing Zhao, Wenjin Zhang, and Zidong Zhang, Shandong University, and Chuanxin Hou, Yantai University

Paper: "Porous Fe@Fe₃O₄-C Nanocomposite Using Polyvinyl Alcohol Sponge as Template for Microwave Absorption," *Journal of Electronic Materials*, November 2020.

LIGHT METALS DIVISION

LIGHT METALS DIVISION (LMD) DISTINGUISHED SERVICE AWARD

Alan Tomsett
Technical Manager, Rio Tinto Pacific Operations

LMD TECHNOLOGY AWARD

Dag Mortensen
Principal Research Scientist, Institute for Energy Technology

LMD JOM BEST PAPER AWARD

Geoffrey Sigworth, GKS Engineering Services

Paper: "Refining of Secondary Aluminum: Important Chemical Factors," *JOM*, September 2021.

NOMINATION PACKET TIPS

It's never too early to start preparing an awards nomination packet. You can start by reviewing award requirements and reading through the Tips for Preparing Nominations page at www.tms.org/Awards. Here, you can learn more about the awards process and access award nomination forms. Completed forms and supporting documents should be submitted to awards@tms.org.

MATERIALS PROCESSING & MANUFACTURING DIVISION

MATERIALS PROCESSING & MANUFACTURING DIVISION (MPMD) DISTINGUISHED SERVICE AWARD

Corbett Battaile
*Principal Member of Technical Staff,
Sandia National Laboratories*

MPMD DISTINGUISHED SCIENTIST/ENGINEER AWARD

Jian Wang
Professor, University of Nebraska-Lincoln

STRUCTURAL MATERIALS DIVISION

STRUCTURAL MATERIALS DIVISION (SMD) DISTINGUISHED SCIENTIST/ENGINEER AWARD

Elizabeth Holm
Professor of Materials Science and Engineering, Carnegie Mellon University

SMD DISTINGUISHED SERVICE AWARD

Carl Cady
Research Engineer, Los Alamos National Laboratory

SMD JOM BEST PAPER AWARD

Andrew Chuang, Benjamin Gould, and Niranjana Parab, Argonne National Laboratory; Joseph Aroh, Rachel Lim, Seunghee Oh, Anthony Rollett, and Robert Suter, Carnegie Mellon University; Joel Bernier, Lawrence Livermore National Laboratory; and Tao Sun, University of Virginia
Paper: "Microscale Observation via High-Speed X-ray Diffraction of Alloy 718 During In Situ Laser Melting," *JOM*, January 2021.

EPD/LMD JOURNAL OF SUSTAINABLE METALLURGY BEST PAPER AWARD

Alejandro Abadias Llamas and Jose Ricardo da Assuncao Godinho, Helmholtz-Zentrum Dresden-Rossendorf; Juho Hannula, AFRY Finland Oy; Saija Luukkanen, University of Oulu; and Markus Reuter, SMS Group, Düsseldorf
Paper: "Simulation-Based Exergy and LCA Analysis of Aluminum Recycling: Linking Predictive Physical Separation and Re-melting Process Models with Specific Alloy Production," *Journal of Sustainable Metallurgy*, March 2020.

LMD/EPD BEST PAPER AWARDS

The following awards recognize the author(s) for excellence of a paper published in the preceding year's volume of the Energy proceedings or *JOM* related to an energy topic.

Professional

Yan Chen, Junkai Gao, Qian Shi, Shibin Wu, Qinyao Xu, and Junwei Zhang, Zhejiang Ocean University
Paper: "Fabrication of a Novel Highly Thermal Conductive Shape-Stabilized Phase-Change Material Using Cheap and Easily Available Cabbage Mustard Biochar," *JOM*, August 2021.

Student

Fang Dong, Xiao-long Li, Gui-li Liu, Yan Liu, and Ting-an Zhang, Northeastern University
Paper: "Hydrodynamics of Gas-Liquid Two-phase Flow in Reverse Spray Washing Process," *Energy Technology* 2021.

LIGHT METALS SUBJECT AWARDS

The following awards recognize individual excellence of papers presented at the previous year's TMS annual meeting in an LMD-sponsored session.

Aluminum Alloys

Jon T. Carter and Louis G. Hector, Jr., *General Motors Warren Tech Center*; Katherine E. Rader, *Pacific Northwest National Laboratory*; and Eric M. Taleff, *University of Texas at Austin*
Paper: "Review of Retrogression Forming and Reaging for AA7075-T6 Sheet," *Light Metals 2021*.

Yeqi Shi and Izabela Szlufarska, *University of Wisconsin-Madison*

Paper: "Simulations of Wear-Induced Microstructural Evolution in Nanocrystalline Aluminum," *Light Metals 2021*.

Alumina/Bauxite

Andrey Panov, Alexander Senyuta, and Andrey Smirnov, *RUSAL Engineering and Technological Center*
Paper: "Revisiting Alternative Smelter Grade Alumina Production Processes"

Aluminum Reduction Technology

Patricia Gagnon, Marie-Ève Laframboise, and Xiangwen Wang, *Alcoa Aluminum Center of Excellence*
Paper: "Experience with Lengthy Pot Hibernation at Alcoa Baie-Comeau," *Light Metals 2021*.

Electrode Technology for Aluminum Production

Julien Lauzon-Gauthier and John Secasan, *Alcoa Continuous Improvement Smelting Technology*
Paper: "Development and Applications of the Four Points Probe (4PP) Electrical Resistivity Measurements for Anode Process Optimization," *Light Metals 2021*.

Warren Peterson Cast Shop for Aluminum Production

Valdis Bojarevics, Georgi Djambazov, Koulis Pericleous, and Catherine E.H. Tonry, *University of Greenwich*
Paper: "Contactless Ultrasonic Treatment in Direct Chill Casting," *JOM*, January 2020.

LMD MAGNESIUM TECHNOLOGY AWARDS

The following celebrate individual excellence of papers published in the previous year's volume of *Magnesium Technology* on specific topics or presented during the TMS annual meeting at the Magnesium Technology Symposium.

Application

MingZhe Bian, *National Institute of Advanced Industrial Science and Technology*, and Kazuhiro Hono, Zehao Li, and Taisuke Sasaki, *National Institute for Materials Science*

Paper: "Toward Development of Strong and Formable Magnesium Alloy Sheets with Bake-Hardenability," *JOM*, May 2021.

Fundamental Research

Zongrui Pei, *New York University*
Paper: "Mechanisms and Machine Learning for Magnesium Alloys Design," *Magnesium Technology 2021*.

Student Paper

Marek Niewczas, *McMaster University*, and Sean Agnew, Jishnu Bhattacharyya, and Mohammed Shabana, *University of Virginia*

Paper: "Thermally Activated Nature of Basal and Prismatic Slip in Mg and Its Alloys," *Magnesium Technology 2021*.

Best Poster

Trevor Abbott, *RMIT University*, and Yahia Ali, Manjin Kim, Stuart McDonald, Kazuhiro Nogita, and Julio Piraquive, *University of Queensland*
Title: "Eutectic Modification of Mg₂Si in Mg-Si Alloys for Faster Hydrogen Absorption Kinetics"

EPD MATERIALS CHARACTERIZATION AWARDS

The following awards acknowledge the individual excellence of papers published or posters presented on the topic of materials characterization.

Best Poster Award – First Place

Carolyn Fink, Cheng-Han Li, and John Lippold, *The Ohio State University*, and Joerg Jinschek, *Technical University of Denmark*
Title: "S/TEM Characterization of Interdendritic Phases in Ni-30Cr Weld Metal 52XL"

Best Poster Award – Second Place

Wendell Bruno Almeida Bezerra, Luana Crystine da Cruz Demosthenes, Sergio Neves Monteiro, Ulisses Oliveira Costa, Fernanda Santos da Luz, and Michelle Souza Oliveira, *Military Institute of Engineering*

Title: "Thermal Stability of Plain Arapaima Scales and Scales-reinforced Epoxy Matrix Composites"

Best Poster Award – Third Place

Bianca Bonomo, Anna Carolina Lucas, Gustavo Lima, Marcia Lopez, Beatriz Mendes, Leonardo Pedroti, and Livia Silva, *Universidade Federal de Vicosa*
Title: "Effect of the Incorporation of Bauxite and Iron Ore Tailings on the Properties of Clay Bricks"