

Press Release – 2015 Acta Materialia, Inc. Hollomon Materials and Society Award

The recipient of the 2015 Acta Materialia Inc. Hollomon Materials & Society Award is Dr. Tresa M. Pollock, the Alcoa Professor of Materials at the University of California Santa Barbara. Dr. Pollock specializes in the mechanical and environmental performance of materials in extreme environments, unique high temperature materials processing paths, ultrafast laser-material interactions, alloy and coating design and 3-D materials science for prediction of the properties of structural and functional materials. She has been a member of the National Academy of Engineering (NAE) since 2005 and has served in a number of leadership positions in professional societies, government and academia.



Dr. Pollock, whose career has spanned from industry to academia, was employed at General Electric Aviation and Allison Gas Turbine (now Rolls Royce) during the 1980's, involved in research and development on high temperature alloys and coatings. She was a co-inventor of the GE single crystal turbine airfoil alloy, René N6. Pollock served as the L.H. and F.E. Van Vlack Professor of Materials at the University of Michigan Ann Arbor from 2000 – 2009 and the Alcoa Professor of Materials Science and Engineering at Carnegie Mellon University, where she progressed from Assistant to Associate to Full Professor from 1991 – 1999. Born in Springfield, Ohio, Dr. Pollock received an undergraduate degree from Purdue University in 1984 and a Ph.D. in Materials Science and Engineering from the Massachusetts Institute of Technology in 1989.

With over 250 peer reviewed scientific publications, her recent research has focused on thermal barrier coating systems, a new class of intermetallic-containing high temperature cobalt-base alloys, materials for hypersonic flight, lightweight materials and structures, new growth processes for nickel- and cobalt-base alloy single crystals and femtosecond laser – material interactions. Her research group has recently developed a unique femtosecond laser-aided 3-D tomography technique which uses ultrashort laser pulses to ablate material layer-by-layer, permitting acquisition of mesoscale 3D multimodal datasets with nanometer-scale resolution and unprecedented speed. Dr. Pollock has served on the advisory committees for the Engineering Directorate of the National Science Foundation and the Los Alamos Institutes. She is also the recipient of the 2014 ASM Gold Medal and is a Fellow of TMS and ASM.

Professor Pollock chaired the 2008 NAE Study on Integrated Computational Engineering (ICME), which significantly contributed to the development of the White House Materials Genome Initiative and the development of a broad set of US Federal research programs that aim to develop computational, experimental and data/informatics tools that permit new materials to be developed twice as fast at a fraction of the cost, compared to what is currently possible. She delivered the Keynote Lecture at the 1st World Congress on International

Computational Materials Engineering (2011) and served on the International Advisory Committee for the 2nd World Congress (2013). She was also co-organizer of the Materials Genome Grand Challenges Summit (2013) and the 2nd International Congress on 3D Materials Science (2014). Professor Pollock has provided leadership in the development of early career professionals in Materials Science and on improving diversity in the engineering profession. As Vice President and President of the Minerals, Metals and Materials Society (2004 – 2005), she developed new programs for early career professionals and junior faculty in Materials. The NSF International Center for Materials Research (ICMR), directed by Pollock since 2010, provides support for students, postdoctoral researchers and junior faculty to engage in international research exchanges and to develop international collaborations through workshops and summer schools. From 2006 – 2009 she served as lead organizer of the NAE US – German Frontiers of Engineering meetings, that bring together emerging academic, industrial and government engineering leaders from each country for exchanges of leading-edge engineering research and to facilitate international collaborations. Dr. Pollock also served on the Advisory Board and was an active participant in the NSF-Advance program at the University of Michigan (2001 – 2006), which developed programs and initiatives on recruiting, retention and leadership for women faculty in science and engineering. Most recently she served as an advisory organizer of the 2014 TMS Summit on Diversity in the Minerals, Metals and Materials Professions, held at the National Academy of Science.

The Acta Materialia, Inc. Hollomon Award in Materials and Society was established in memory of Dr. J. Herbert Hollomon and his dedication to promoting positive social consequences of science and technology that have had a major impact on society. The Award consists of a glass sculpture, an inscribed certificate and a cash honorarium.

Dr. Pollock was selected as the 2015 awardee by an international panel of judges appointed by the Board of Governors of Acta Materialia, Inc. and will receive this prestigious award in March 2015 during the TMS Annual meeting in Orlando, FL.