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Dr. M. Singh, FASM, FACerS, FIMMM (UK) and Academician, World Academy of Ceramics, Italy is Chief Scientist at Ohio Aerospace Institute, NASA Glenn Research Center, Cleveland, OH (USA). He received his Ph.D. in Metallurgical Engineering from Banaras Hindu University, Varanasi, India in 1983. He worked as Research Associate at Louisiana State University, Baton Rouge, LA from 1986-1987, Senior Research Associate at Rensselaer Polytechnic Institute, Troy, NY from 1987-1991. He came to NASA Glenn Research Center, Cleveland, OH in August 1991 as Senior Researcher in Ceramics Branch, Materials Division. He is involved with various activities in processing, manufacturing, joining and attachment technologies, and characterization of advanced ceramics and composites, lightweight cellular ceramics and porous foams, high conductivity composites and porous materials for thermal management systems, ceramic matrix composites for turbomachinery and propulsion systems and a wide variety of materials for ultra high temperature and extreme environment applications.

He is also involved in developing microjoining and packaging technologies for sensors for high temperatures and harsh environments, integration and sealing technologies for solid oxide fuel cells (SOFCs), and bonding technologies for silicon carbide based MEMS Lean Direct Injector for low emission combustion in aero engines. He has also been working on nanocrystalline silicon carbide materials, biomaterials for orthopedic implants, biomimetics, and environmentally conscious ceramics (Ecoceramics). He was actively involved in developing in space repair technologies for the thermal protection systems of space shuttle and exploration vehicles, heat rejection systems for space exploration missions, advanced ceramic matrix composites and gaskets and sealants for hypersonic and reentry application and ultra high temperature ceramics and composites for leading edges of next generation space transportation systems.

He has authored or coauthored more than two hundred fifty publications in journals, edited thirty books/proceedings, three book chapters, and five journal volumes, holds several patents, and various technology transfers to industries. He has co-supervised number of masters and Ph.D students in various universities in USA and abroad. He is recipient of numerous (*more than thirty*) national and international awards including 1989 Crystal Growth Award, 1993 Jacquet-Lucas Award from the International Metallographic Society and ASM International, 1994 ASM International/IIM Visiting Lectureship, 1995 R&D 100 Award for the development of Affordable Fiber Reinforced Ceramic Composite (AFReCC) technology, 1995 and 1997 Innovator of the Year and 1995 Best Paper of the Year Awards from NYMA, Inc., 1998 Federal Laboratory Consortium Award for Excellence in Technology Transfer, 1999 Best Paper award from

the American Ceramic Society, 1999 R&D 100 Award, 2000 NorTech Innovation Award, and Dynacs Engineering Innovator of the Year award for the development of Affordable Robust Ceramic Joining Technology (ARCJoinT).

He received NASA Public Service Medal in 1999 and NASA Exceptional Space Act Award in 2000 for his outstanding and extraordinary contributions to various NASA programs, 2000 Richard M. Fulrath Award of the American Ceramic Society, Ishikawa International Carbon Prize from Ishikawa Science and Technology Foundation, Tokyo, Japan in 2000, 2001 R&D 100 Award and 2002 NorTech Innovation Award for the development of Environment Conscious Ceramics (Ecoceramics) technology, 2003 Samuel Geijsbeek Award from the American Ceramic Society, 2004 Distinguished Alumnus Award from the Department of Metallurgical Engineering, Institute of Technology, Banaras Hindu University, India, 2004 ASM International-Indian Institute of Metals (IIM) visiting lectureship, and 2004 Japan Fine Ceramics Association (JFCA) International Prize, Tokyo, Japan.

He received James I. Mueller Memorial award from the American Ceramic Society in 2005 and delivered the plenary award lecture in International Cocoa Beach conference in January 2005. He received 2005 R&D 100 award and 2005 Northern Ohio Live Magazine Awards of Achievement in Science and Technology for the development of GRABER technology. He received "Order of the Enterprise" award from NASA in 2005 for his contributions to Space Shuttle Return to Flight efforts.

He delivered 37th Prof. Gottfried Wagener Memorial Award lecture at Tokyo Institute of Technology, Tokyo, Japan in Sept. 2006. He received NASA Glenn's R&T directorate special recognition award in 2006. For his contributions to space shuttle return to flight (RTF) and safety of manned space flight, he received Silver Snoopy Award (Astronauts Personal Award) from the crew of STS-115 in November 2006. He received International Award from the European Ceramic Society for his outstanding contributions to science and technology of engineering ceramics and composites, which have made enormous impact. He delivered key note plenary presentation during the 10th International Conference and Exposition of the European Ceramic Society in Berlin in June 2007. He has also delivered a keynote plenary presentation during the PACRIM-7 conference in Shanghai, China in November 2007.

He is member (academician) of the **World Academy of Ceramics**, Italy. He is a **Fellow** of the **American Ceramic Society**, **ASM International**, and **Institute of Mining, Minerals, and Materials (UK)**. He is an adjunct professor at Sardar Patel University, Vallabh Vidya Nagar, Gujarat, India. Currently, he is the Trustee of the Engineering Ceramics Division (ECD) of the American Ceramic Society and also served as counselor and past chair of the division, past chair of the division nominating committee, program chair of Cocoa Beach 2002, and past chair of the ECD Awards Committee. He has served on various positions of the Engineering Ceramics Division including secretary, vice chair and treasurer, chair-elect and chair. In the American Ceramic Society, he is the past chair of the Corporate Environmental Achievement Award committee and past chair and member of John Jeppson Award committee. He was also a member of the ACerS Globalization Task Force (GTF) and Convening Committee of

Americas (CCA). He has also served on the ACerS meeting task force and currently serves on the ACerS membership task force as chair of the international committee. In addition, he was a member of the W.D. Kingery Award committee and past chair as well as member of the Robert L. Coble Award committee. He currently serves as a member of Richard M. Fulrath Award selection committee and member of Panel of Fellows of the American Ceramic Society. He was instrumental and played a major role in the start-up of new ACerS journal entitled "International Journal of Applied Ceramic Technology", which has highest ISI impact factor in ceramics journals in 2007. He currently serves on various high level strategic planning committees and task forces of the American Ceramic Society.

He chaired the 5th International Conference on High Temperature Ceramic Matrix Composites (HTCMC-5) in Seattle, WA in September 2004 organized by the American Ceramic Society. He served as Global Roadmap Editor during the 1st International Congress on Ceramics held in Toronto, Canada during 2006. He has also served as American Ceramic Society liaison to PACRIM 7 in Shanghai in 2007 and will be the Chair of PACRIM-8 in 2009 organized by the American Ceramic Society in Vancouver, Canada, May 31-June 5, 2009.

In ASM International, he is a member of Awards Policy Committee, International Materials Review Committee, Journal of Materials Engineering and Performance committee, and ASM-IIM Visiting Lectureship committee. He has served as member and past chair of ASM Panel of Fellows. He is past chair of Journal of Materials Engineering and Performance Committee, member of Bradley Stoughton young teacher award selection committee, past chair of ASM Education Committee and Joining Critical Technology Sector of ASM International's Technical Programming Board and member of Materials Engineering Institute (MEI) advisory council, vice chair and member of joining critical technologies sector, manufacturing technologies sector, and a number of other committees. He is a member of Brazing Committee of ASM International-Heat Treat Society and the American Welding Society. He has also played a key role in the development of strategic plan of ASM International.

In Acta Materialia, Inc., he serves on the Acta Materialia Board of Governors. The Acta Materialia Board oversees the publication of three highly cited materials science journals namely Acta Materialia, Scripta Materialia, and Acta Biomaterialia and prestigious Acta Gold Medal and Acta Biomaterialia Gold Medal. He is a member of nominating committee of World Academy of Ceramics, Italy. He is also actively involved in US National Academy of Engineering- Frontiers of Engineering activities. He is also a member of the Ceramic Society of Japan and the American Institute of Aeronautics and Astronautics (AIAA).

He has served and continuously serves on the international scientific and advisory boards of many international conferences, workshops, and technology exchange forums all over the world. His vision and strategies led to internationalization and global growth of International Cocoa Beach conference. In 1998, he started an International Conference series on Joining of Advanced and Specialty Materials in ASM International and it has been held regularly during the annual meeting. In addition to organization of

various international meetings and conferences organized by the American Ceramic Society and ASM International, he has been actively involved in organization of various multi-society hosted international meetings and co-chaired various symposia including first International Brazing and Soldering Conference in Albuquerque, NM; Okamura Symposium in Kyoto, Japan; PACRIM-5 in Nagoya, Japan; 9th European Ceramic Society Conference in Portoroz, Slovenia; 10th European Ceramic Society Conference in Berlin, Germany; PACRIM-6 in Maui, Hawaii; 9th CIMTEC-World Ceramics Congress in Sicily, Italy and PACRIM-7 in Shanghai, China.

Since 2000, he chaired or co-chaired at least twelve symposia during the International Cocoa Beach Conference in Cocoa Beach/Daytona Beach, FL related to Advanced Processing and Manufacturing Technologies, Aerospace Materials and Technologies, Nanomaterials and Nanotechnologies, Biomimetics, and Design and Mechanical Behavior of Engineering Ceramics and Composites. He has also chaired/co-chaired four conferences during the Annual Meeting of the American Ceramic Society in different areas. He has organized/co-organized more than six international conferences during the annual meeting of ASM International.

He co-chaired first and second International Conference on Recent Advances in Composite Materials (ICRACM-2004 and ICRACM-2007) in India in December 2004 and February 2007, respectively. He served as the co-chair of 6th International Conference on High Temperature Ceramic Matrix Composites (HTCMC-6) in New Delhi, India in September 2007. He is also the co-chairman of 9th International Symposium on Ceramic Materials and Components for Energy and Environmental Applications (CMCEE) in Shanghai, China during November 11-14, 2008.

He has served as Visiting Advisor for the International Center of Young Scientists (ICYS) at National Institute of Materials Science (NIMS), Tsukuba, Japan in February 2008. He has also served as international expert of various programs and institutes in Europe, Asia, and USA. He has served on the panel of various prestigious international awards including R&D 100 award, NorTech Innovation Award, Karl Heinz Beickerts Prize, Germany and Japan Prize.

He currently serves on the editorial boards of many international journals including International Materials Review (IMR) published by ASM International and IOM, Journal of Materials Engineering and Performance published by ASM International, Science of Sintering published by International Institute of Science of Sintering, Belgrade, Powder Metallurgy Reports published by Metal Powder Industries Federation (MPIF), Ceramic Society of Japan Journal, Ceramic Forum International (CFI) published by German Ceramic Society (DFG), Ceramics International, Materials Science and Engineering A, and Current Opinions in Solid State and Materials Science published by Elsevier Science, Journal of Materials Integration, Japan, and Ceramic Bulletin published by the American Ceramic Society. He has given numerous invited presentations at various international conferences and workshops, government laboratories, universities, industries, and various forums all over the world.