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Subjects: Nanoscience & Nanotechnology | Engineering, Mechanical

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Dr. EH Yang is a Professor of the Mechanical Engineering Department at Stevens Institute of Technology. The first to receive a MEMS Ph.D. in his native South Korea, he joined Stevens in 2006 following tenure as a senior member of the engineering staff at NASA Jet Propulsion Laboratory, where he was awarded, among other honors, the Lew Allen Award for Excellence for developing MEMS-based actuators and microvalves for large-aperture space telescopes and deformable mirrors capable of correcting for optical aberrations to improve high-resolution imaging. Through the Stevens Micro Device Laboratory, Dr. Yang facilitates student research and hands-on education in emerging nanotechnologies. In addition to his role as a faculty advisor of the nanotechnology graduate program, he spearheaded the design of Stevens' first undergraduate nanotechnology research-track training program. Dr. Yang has secured more than 35 federal grants and contracts, including funding from the National Science Foundation, Air Force Office of Scientific Research, National Reconnaissance Office, US Army, and NASA. Dr. Yang's professional service credits include editorial or editorial board positions for several journals, including Nature's *Scientific Reports* and multiple track chair positions for ASME International Mechanical Engineering Congress and Exposition (IMECE). He has produced more than 300 journal papers, conference proceedings, and presentations and has delivered several keynotes or invited talks. He holds several issued or pending patents in the fields of micro- and nanotechnology. Dr. Yang was a featured Micro- and Nano- Systems Engineering and Packaging track plenary speaker at IMECE in 2018. He received the Technical Achievement Award from IEEE Sensors Council in 2020. Dr. Yang has been elected a Fellow of the National Academy of Inventors, the highest professional distinction for academic inventors. He has also been elected a Fellow of the American Society of Mechanical Engineers (ASME) for his extensive contributions to the fields of micro- and nanotechnology.

Keywords: 2D materials ; 2D magnets ; carbon nanotubes

Dr. Eui-Hyeok Yang leads research in several distinct and exciting areas of micro- and nanotechnology, which represents a significant advance in nanomaterials, microfluidics, supercapacitors, photosensors, and pressure sensors. His most significant patents are US 9,738,526, US 9,640,391, US 9,573,814 and US 8,878,120. These patents concern novel energy harvesting and energy storage, as well as detector applications, which have numerous civilian, military, and scientific uses.

Dr. Yang has been nationally and internationally recognized for his research excellence. He was honored to give Track Plenary lectures at ASME International Mechanical Engineering Congress and Exposition, Pittsburg, PA, November 2018. Dr. Yang was also elected a *Fellow of the National Academy of Inventors* for demonstrating a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on the quality of life, economic development, and welfare of society. He received numerous awards, including the NASA ICB Space Act Award (2003, 2005), Bonus (Level B and C) Award (2001, 2003), many Class 1 NASA Tech Brief Awards (2001-2008), and the prestigious Lew Allen Award for Excellence (2003), recognized for his excellence in advancing the use of Micro Electro Mechanical Systems-based actuators for space applications. Dr. Yang received the Jess H. Davis Memorial Award for Research Excellence (2018) at Stevens, and the leadership recognition (2014) from the ASME MEMS Division in honor of the excellence in leading the division in efforts to foster collaboration and maintain a high level of creativity in the field.

His commitment to mentoring, sharing knowledge and contributing to the scientific community is demonstrated in more than 145 journal titles that he has reviewed throughout his career, including Nature Communications, Advanced Materials, Advanced Functional Materials, JACS, Materials Today, ACS Nano, and Chemistry of Materials. At NASA, Dr. Yang managed and monitored several NASA SBIR projects, and participated in the review committee for developing NASA's Multi-Object Spectrometer for James Webb Space Telescope, in addition to managing or executing several research contracts funded by NASA, DARPA, and NRO.

Dr. Yang exudes a spirit of innovation which he shares through his various leadership roles in the professional societies; he has served several professional activities for American Society of Mechanical Engineers (ASME), Institute of Electronics and Electrical Engineers (IEEE), Materials Research Society (MRS), Society of Photographic Instrumentation Engineers (SPIE), American Vacuum Society (AVS), New York Academy of Sciences, and American Physical Society

(APS). His service to the professional community furthermore includes formal appointments such as Associate Editor of ASME Journal of Electrochemical Energy Conversion and Storage, Editorial Board Member of Nature's Scientific Reports, and Associate Editor of IEEE Sensors Journal. In particular, Dr. Yang has been a significant contributor to ASME MEMS Division and ASME International Mechanical Engineering Congress and Exposition (IMECE); as Track Chair of the IMECE Nano and Micro Systems Track, he organized and ran several symposia consisting of approximately 50 sessions and over 250 presentations related to advances in Nano and Micro Systems, each year from 2009 to 2011. He was Division Chair (2012-2013), Division Vice-Chair (2011-2012), Member of the Executive Committee (2009-2014), Committee Chair, Program and Editorial Committee, (2009-2011), Track Chair of IMECE Micro and Nano Systems Track (2009-2011), Track Co-Chair of IMECE Micro and Nano Systems Track (2012), Track Co-Chair of IMECE Nanoengineering for Biology and Medicine Track (2011), Organizer and Committee Member of the ASME Society-Wide Micro/Nano Technology Forum (2008-2012), Committee Member of IMECE's Micro and Nano Devices Symposium, and Miniaturization for Space (2005-2010).

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