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***"Nanotechnology: The Next Industrial Revolution?"***

We are at the threshold of a new era in the history of mankind where a few major technologies with attention to societal and ethical issues can create opportunities for new industries, robust job growth and enhanced human abilities. Converging technologies, identified by National Science Foundation as nanotechnology, biotechnology, information technology and cognitive science, are poised to unleash new understanding of matter from atomic scale to the complex working of human brain.

Nanotechnology alone has been hailed to usher in the next industrial revolution that will impact every aspect of our lives from health care to consumer products, communication and safety. According to a recent Lux Research Report, nanotechnology will generate a world wide market of \$2.7 trillion in a time frame of a decade or so. In combination with the other three components of converging technologies, it holds a huge potential to spur economic growth world-wide. However, in the development of these powerful technologies, we must be guided by important ethical and societal considerations so that the human potential

Roop L. Mahajan is the James S. Tucker Chair Professor of Engineering and Director of the Institute of Critical Technology and Applied Science at Virginia Tech. Mahajan came to Virginia Tech in 2006 from the University of Colorado at Boulder where he served as a Professor of Mechanical Engineering from 1991 to 2006.

After earning his Ph.D. degree in Mechanical Engineering at Cornell University (1977), Mahajan worked with AT&T Bell Laboratories-Engineering Research Center, Princeton, NJ, for 3 years as a Member of the Technical Staff, and for 12 years as Supervisor in the Semiconductor Technology Department. In 1989, he was elevated to the prestigious rank of Bell Labs Fellow for outstanding technical contributions in thermally based processes.

Mahajan is an internationally known prolific researcher with expertise in a number of fields including heat transfer, artificial neural networks, bio micro-electro-mechanical systems (Bio-MEMS) and nanotechnology. He has over 170 archival journal publications, several book chapters and review articles and an authoritative textbook to his credit. He holds three patents and has five invention disclosures.

He is the recipient of numerous awards including the American Society of Mechanical Engineers (ASME) 2007 Ralph Coats Roe Medal for his contributions to a better understanding and appreciation of the engineer's value to contemporary society, the 2003 Charles Russ Richards Memorial Award for outstanding achievement in mechanical engineering for 20 years or longer

after graduation, the 2002 ASME Heat Transfer Memorial Award, and the Subaru Educator of the Year Award in 2002. He is an ASME Fellow.