Biography

Veena Misra is the Director of the National Science Foundation Nanosystems Engineering Research Center on Advanced Self-Powered of Integrated Sensors and Technologies (ASSIST). She is a Distinguished Professor of Electrical and Computer Engineering at North Carolina State University and a 2012 IEEE Fellow. She received the B.S., M.S., and Ph.D. degrees in electrical engineering from North Carolina State University, Raleigh. After working at the Advanced Products Research and Development Laboratories, Motorola Inc., Austin, TX, she joined the faculty of North Carolina State University in 1998. She has authored or coauthored over 150 papers in the areas of state-of-the-art low-power CMOS devices, power devices, alternative high-mobility substrates, nanoscale magnetics, and energy-harvesting. Dr. Misra was the recipient of the 2001 National Science Foundation Presidential Early CAREER Award, the 2011 Alcoa Distinguished Engineering Research Award, and 2007 Outstanding Alumni Research Award and the 2016 R.J. Reynolds Award. She also served as the general chair of the 2012 IEEE International Electron Device Meeting.

Dr. Misra has had a track record in working on intersection of various heterogeneous technologies. While her background and training as an electrical engineer is on advanced high performance silicon devices, she has spent the last 15 years of her career in integrating these technologies with non-traditional technologies both in structure and in functionality. Examples include hybrid silicon-molecular electronics, organic solar cells, patterned cell growth using semiconductor patterning, nanomagnetics and most recently health and environmental sensors that operate at power levels that are so low that they can be supported by energy harvested from the human body to build self-powered devices. Her work on sensors is focused on building ultra low power gas sensors based on metal oxides that can be used for detection of harmful chemicals used. Her work has shown that with proper sensor material and deposition technique, ultra low power can be achieved with high sensitivity and selectivity. She is extending this work to exploring multiple chemicals such as ozone and VOCs used in hospital environments. The sensor effort is being leveraged by the work being carried out in ASSIST Center, which she is directing and the ultra low power

operation will significantly enhance the operation lifetime of these sensors leading to longer term monitoring for health and wellness.

The following 5 items represent Dr. Misra's contribution in sensors. The first 4 are publications and the last bullet represents a keynote talk at Body Sensors Network.

- Misra V., A. Bozkurt, B. Calhoun, T. Jackson, J. Jur, J. Lach, B. Lee, J. Muth, O. Oralkan, M. Ozturk, S. Trolier-McKinstry, D. Vashaee, D. Wentzloff and Y. Zhu, "Flexible Technologies for Self-Powered Wearable Health and Environmental Sensing", *Proceedings of the IEEE, April 2015.*
- Steven Mills, Michael Lim, Bongmook Lee and Veena Misra, "Atomic Layer Deposition of SnO2 for Selective Room Temperature Low ppb Level O3 Sensing", *ECS J. Solid State Sci. Technol. 2015 volume 4, issue 10, S3059-S3061*.
- Misra V, B. Lee, P. Manickam, M. Lim, S. Pasha, S. Mills, and S. Bhansali, "Ultra-low Power Sensing Platform for Personal Health and Personal Environmental Monitoring", *Proceedings of IEEE International Electron device Meeting, Pages 13.1.1-13.1.4*. December 2015.
- A. Dhawan, Yan Du; Hsinneng Wang; D. Leonard, V. Misra, M. Ozturk, M. Gerhold, T. Vo-Dinh, *"*Development of plasmonics-active SERS substrates on a wafer scale for chemical and biological sensing applications", *Electron Devices Meeting, 2008. IEDM 2008. IEEE International,* Page(s):1 – 4, 15-17 Dec. 2008.
- Keynote, Body Sensor Networks, 2016