

IEEE ED NIT Silchar Student Branch Chapter Organizes Virtual Distinguished Lecture (DL) on 31 July 2020, 6 PM (IST)

Challenges and Directions for Nanoelectronics to Nanotechnology

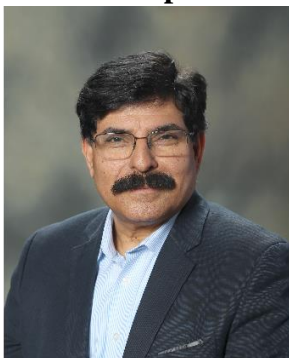
Prof. Durga Misra

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Abstract:

The next generation of nanoelectronics device scaling for sub-14 nm CMOS technology (More Moore) has introduced bulk/SOI FinFETs and requires that the EOT scaling of gate dielectric beyond 0.7 nm. FinFET Reliability issues like Self-Heating has been a challenge that needs to be resolved. Additionally, current trends in Internet of Things (IoT) require the convergence of Nanoelectronics, Nanotechnology, Communication Technology and Information Technology. Integrated sensor systems monitoring environment, health care, water quality, vehicle traffic, smart cities are becoming the norm. Despite extended range of applications, low power requirement is the key to these nanosystems. Incorporation of different nanodevices into these nanosystems with functionalities that do not necessarily scale according to "Moore's Law," but provide additional value in different ways (more than Moore), is necessary. Furthermore, nanoelectronic devices with extremely low power consumption allows a set of next generation devices for artificial intelligence hardware and neuromorphic applications. It is, therefore, important to get exposed to the current trends in circuit design architectures, device structures and fabrication, device and circuit relationship and design, reliability of new devices and processes. In this talk, some of the recent developments and trends in device design and fabrication of next generation electronics devices and IoT devices will be outlined.

About the Speaker:



Prof. Durga Misra is a Professor in the Department of Electrical and Computer Engineering, New Jersey Institute of Technology, Newark, USA. His current research interests are in the areas of nanoelectronic/optoelectronic devices and circuits, especially in the area of nanometer CMOS gate stacks and device reliability. He is Fellow of IEEE. He is a Distinguished Lecturer of IEEE Electron Devices Society (EDS) and serving in the IEEE EDS Board of Governors. He is, also, a Fellow of the Electrochemical Society (ECS). He received the Thomas Collinan Award from the Dielectric Science & Technology Division of ECS. He is also the winner of the Electronic and Photonic Division Award from ECS. He edited and co-edited more than 45 books and conference proceedings in his field of research. He has published more than 200 technical articles in peer reviewed Journals and in International Conference proceedings including 95 Invited Talks. He has graduated 19 PhD students and 40 MS students. He received the M.S. and Ph.D. degrees in electrical engineering from the University of Waterloo, Waterloo, ON, Canada, in 1985 and 1988, respectively.

Date: 31 July 2020 (FRI), Time: 6 PM (IST), Mode: Virtual (Webex)

Meeting link: <https://njit.webex.com/njit/j.php?MTID=ma600a412590579a61b0d708d17969acc>

Meeting number: 120 779 0648; Password: gF6wagyAY82

Registration FREE: <https://events.vtools.ieee.org/m/236133>

After successful registration, an email of all the details of the event will be automatically mailed.