



Workshop on "New Technologies in 5G"

Workshop Co-chairs

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Scope and guidelines

Internet of everything (IoE) and huge number of mobile applications are taking the wireless world to new standards. Standardization efforts for 5G have begun as the research activities for 5G are in progress. As there is consensus on requirements of 5G systems various methods to achieve the same are being proposed, researched and developed. 5G standardization efforts include use of millimeter waves or EHF band of the spectrum in order to address the inadequacy of available spectrum. The spectrum efficiency issues are addressed using large number of antennas or massive MIMO techniques, various multiple access techniques like non-orthogonal multiple access (NOMA), beam division multiple access (BDMA) and new techniques of waveform communication. At the physical layer, many potential candidates are proposed to replace OFDM in order to perform waveform design. Some techniques which improve upon OFDM are Filter Bank Multi Carrier (FBMC), Universal Filtered Multi-Carrier (UFMC) and Generalized Frequency Division Multiplexing (GFDM).

The workshop on "New Technologies in 5G" will focus on cutting edge technologies and latest developments in 5G. Papers on novel algorithms, recent research will be presented. This workshop solicits original contributions in not limited to, the following areas:

- massive MIMO,
- millimeter wave (mmWave)
- smallcell networks (HetNet)
- Filter Bank Multi Carrier (FBMC)
- Universal Filtered Multi-Carrier (UFMC)
- Generalized Frequency Division Multiplexing (GFDM)
- Distributed Antenna Systems (DAS)
- New waveform and training sequence designs

Co-chair biographies

Devendra Jalihal graduated with a B.Tech (1983) from IIT Kharagpur, India and obtained his Masters degree (1988) in Engineering from the McMaster University, Hamilton, Canada. Subsequently, he earned his doctorate (1992) in Electrical Engineering from the University of Duke, Durham, NC, USA, for his work on Application of Detection Theory to Image re-construction. Between 1992 and 1994, he was a post-doctoral fellow at the Department of Electrical Engineering, Duke University. In 1994, he joined the

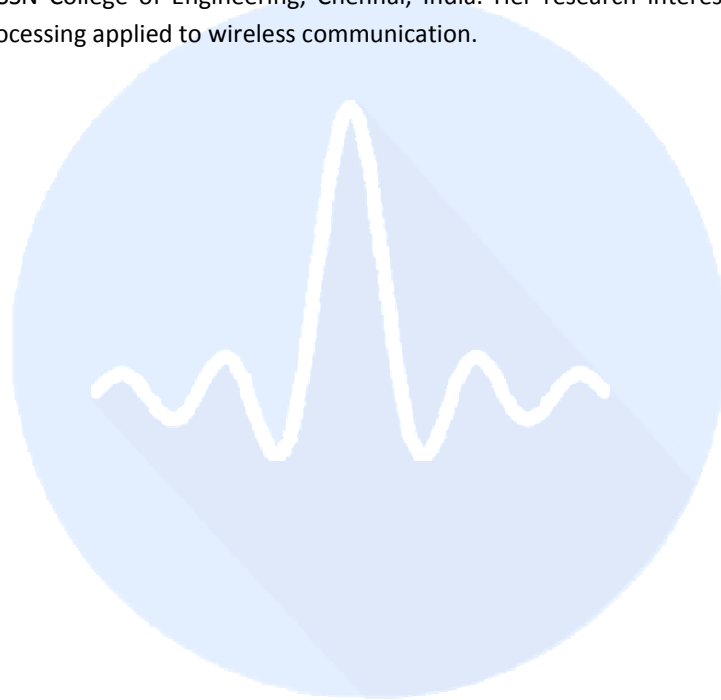


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faculty at the Department of Electrical Engineering, Indian Institute of Technology Madras, where he is now a Professor. His research interests are statistical signal processing, detection and estimation theory, digital communication.

Nandita Lavanis received her B.E. in Electronics Engineering from Visvesvaraya National Institute of Technology, Nagpur, India and M.E. in Electrical Communication Engineering from Indian Institute of Science, Bangalore, India. She was employed with Tata Elxsi India Ltd. and subsequently with Philips Semiconductors, part of Philips Innovation Campus, Bangalore where she worked on ADSL modem and image compression algorithms. She has earned her doctorate from the Department of Electrical Engineering at Indian Institute of Technology, Madras and currently holds a faculty position at the Department of Electronics and Communication Engineering, SSN College of Engineering, Chennai, India. Her research interests are wireless communication, detection theory and signal processing applied to wireless communication.




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