



Special Session of RF and Microwave Power Amplifiers

Session Organizers: Dr. Karun Rawat, I.I.T Roorkee, India

Theme of the Proposal:

The upcoming trends in wireless communication are targeting spectrum as well as energy efficient communication. Keeping with the trend, the power amplifier (PA) designs are motivated by the upcoming opportunities in the strategic area of wireless communications and multi-band/multi-standard software defined radio applications. The transmitter PA design strives for linearity as well as energy efficiency to provide linear and power efficient amplification of signals generated with spectral efficient modulation schemes and multiple accesses techniques. This requires special techniques and innovation in the area of power amplifier design and linearization scheme.

The theme of this special session will cover a wide range of research areas related to the linearized and efficient power amplification schemes. This may include new materials for high power applications, multi-band and high efficiency techniques in power amplifiers, linearization schemes, predistortion, outphasing amplifiers, carrier aggregation, all-digital transmitters, non-linear measurements, device modeling and packaging etc.

Biography:

Karun Rawat has received his PhD. degree in electrical engineering from University of Calgary, Canada in 2012, where he worked as a student research assistant and later Post-doctoral research fellow under the research grant of iCORE and CRC chair, Alberta, Canada. After his PhD, he has been offered research engineer position at Research in Motion, Blackberry, Canada. He is currently Assistant Professor in I.I.T Roorkee. Prior to this, he was Assistant Professor in I.I.T Delhi from 2013-2014 and scientist in the Space Applications Center, Indian Space Research Organization Ahmedabad, from 2003–2007. He is also Technical advisor of RF design company Avantel Ltd. His research has resulted in more than 35 publications in journals and conferences and one accepted book.

He has given several IEEE talks in India as well as abroad. He has also organized workshop in power amplifiers at IMaRC 2014 and has been session chair of Power Amplifiers at iMaRC 2014. Dr. Rawat has been reviewer of several IEEE transactions. He is also member of the editorial board of Wiley journal in RF and Microwave Computer Aided Engineering (RFMiCAE). He has been recipient of research production award for the three consecutive years from 2009-2012 by University of Calgary.

Under his leadership, University of Calgary team won first prize as well as the best design award in the 3rd Annual Smart Radio Challenge 2010 conducted by Wireless Innovation forum while competing against five universities from U.S. and Japan. His current research interests are in the areas of RF power amplifier and transceiver design, nonlinear device modeling, RF active and passive circuits design, RFCMOS and GaN MMIC designs.