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IEEE Industrial Electronics Society

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IECON 2012 Special Session

Special Session on: Integrated Circuit Designs for Wireless Communications

Special Session Organizers (names and contact emails):

Prof. Fa Foster Dai , USA
Prof. J. David Irwin , USA
Dr. Desheng Ma , USA

Technical Outline of the Session (50 words) and Topics:

Integrated circuit (IC) design for wireless communications is a booming area of growth that is driven not only by the development of the underlying semiconductor technologies like CMOS and BiCMOS, but also by the dramatic increase in demand for the wireless products that depend on them. The goal of this special session is to provide an opportunity to evaluate state of the art technologies in IC designs for wireless communications and generate network opportunities for researchers in both academia and industry who have interests in the IC designs for wireless communications. Topics include but are not limit to:

1. RF Front-End Circuits: Low Noise Amplifiers, Mixers, VGAs, AGC
2. Analog Baseband Circuits: Baseband Filter, ADC, DAC, Sampling Circuits, Modulators
3. Reconfigurable Receivers: Software Defined Radio, Wideband/Multi-band Front-end, Self-healing Circuits, Digital RF Circuits, RF BIST Circuits
4. Frequency Generation Circuits: VCO, PLL, DDS, ADPLL, TDC, DCO, Synthesizer, Frequency Divider, Multiplier
5. Large-Signal Circuits: Power Amplifier
6. Wireless Mobile ICs: 3G/4G/LTE, WCDMA, TD-SCDMA, Mobile TV
7. Wireless Technologies: WLAN, Bluetooth, FM, GPS, UWB, Wireless HD
8. Lower Power Transceivers: RFID, Zigbee, Biomedical Sensors
9. Millimeter Wave ICs: Digital Radar, Vehicular IC, Medical IC