

DRAFT: 2017 BCTM ADVANCED PROGRAM

8:30 to 10:00 am	Prof. Zhenqiang (Jack) Ma, University of Wisconsin At the Horizon of Wide Bandgap Bipolar Junction Transistors: The Viability of Lattice Mismatched Heterojunctions	
10:20 AM	Ultra Low Power Analog Design and Technology for Artificial Neurons	Operation of SiGe HBTs at Cryogenic Temperatures
10:45 AM	{cont'd}	Thin-Film Layers with Interfaces that reduce RF Losses on High-Resistivity Silicon Substrates
11:10 AM	Training of Digital Predistortion Based on Signal-to-Distortion-Ratio Measurements	CMOS beyond Si: Nanometer-Scale III-V MOSFETs
11:35 AM	A Linearization Technique for Bipolar Amplifiers based on Derivative Superposition	{cont'd}
12:00 to 1:15 pm	Lunch on your own	
1:15 PM	High resolution terahertz gas spectroscopy with a SiGe BiCMOS transmitter and receiver	
1:55 PM	Silicon-Germanium heterostructures for quantum computation	
2:35 PM		
2:55 PM	Towards Energy-Efficient 5G Mm-Wave Links: Exploiting Broadband Mm-Wave Doherty Power Amplifier and Multi-Feed Antenna with Direct On-Antenna Power Combining	Performance Improvement of a Monolithically Integrated C-Band Receiver Enabled by an Advanced Photonic BiCMOS Process
3:20 PM	{cont'd}	240 GHz RF-MEMS Switch in a 0.13 μm SiGe BiCMOS Technology
3:45 PM	A Multimode 5–6 GHz SiGe BiCMOS PA Design Powers Emerging Wireless LAN Radio Standards	SiGe HBT / CMOS Process Thermal Budget Co-optimization in a 55-nm CMOS Node
4:10 PM	60GHz Concurrent Dual-Polarization RX Front-End in SiGe with Antenna-IC Co-Integration	0.13- μm SiGe BiCMOS Technology with More-than-Moore Modules

4:35 PM	A novel compact balanced reflect-type vector modulator topology	{cont'd}
5:00 PM		
6:00:00 PM to 10 pm	Conference Banquet	
8:30 AM - 9:30 AM	Professor Albert Wang, University Of California, Riverside, Advances in ESD Protection Designs: A Dino to Dash	
9:50 AM	Toward Efficient, Reconfigurable, and Compact Beamforming for 5G Millimeter-Wave Systems	Evaluation of the impact of the external collector resistance on results from parameter scaling for heterojunction bipolar transistors
10:15 AM	{cont'd}	A Tunable Bipolar: Investigation of effects and a MEXTRAM based VerilogA model adaptation of Field Effect Electrode influenced High Voltage SiGe HBTs
10:40 AM	A 28 GHz Transceiver Chip for 5G Beamforming Data Links in SiGe BiCMOS	Extracting the Temperature Dependence of Thermal Resistance from Temperature-Controlled DC Measurements of SiGe HBTs
11:05 AM	A 32.8 dB gain, 3.54 dB NF, 7 mW, 20.35 GHz LNA with embedded 30 GHz band-stop filter	Silicon Modelers Are From Mars, GaAs Modelers are from Venus
11:30 AM	A Low-Power 120-GHz Integrated Sixport Receiver Front-End with Digital Adjustable Gain in a 130-nm BiCMOS Technology	{cont'd}
12:05 to 1:00 pm	Lunch on your own	
1:00 PM	A 100 Gbit/s 2 Vpp Power Multiplexer in SiGe BiCMOS Technology for Directly Driving a Monolithically Integrated Plasmonic MZM in a Silicon Photonics Transmitter	Predicting Hard Failures and Maximum Usable Range of SiGe HBTs

1:25 PM	Fully-differential, DC-coupled, Self-biased, Monolithically-integrated Optical Receiver in 0.25 μ m Photonic BiCMOS Technology for Multi-channel Fiber Links	Enhanced Bipolar Transistor Design for the Linearization of the Base-Collector Capacitance
1:50 PM	A 60 GHz Bandwidth Differential Linear TIA in 130 nm SiGe:C BiCMOS with < 5.5 pA/VHz	Improving the Horizontal Current Bipolar Transistor Breakdown Voltage by Floating Field Plates
2:15 PM	A wideband square-law power detector with high dynamic range and combined logarithmic amplifier for 100 GHz F-Band in 130 nm SiGe BiCMOS	Physics-based modeling of SiGe HBTs with fT of 450 GHz with HICUM Level 2
3:00 PM	A 40 GS/s 4 bit SiGe BiCMOS Flash ADC	A K-Band Low-Noise Bipolar Class-C VCO For 5G Backhaul Systems in 55nm BiCMOS Technology
3:25 PM	A Linear Active Combiner Enabling an Interleaved 200 GS/s DAC with 44 GHz Analog Bandwidth	A Multi-Phase Clock Coupled VCO Using Dual-Tank Magnetic Coupling Technique
3:50 PM	A SiGe-HBT 2:1 Analog Multiplexer with more than 67 GHz Bandwidth	A Wideband 129-171 GHz Frequency Quadrupler Using a Stacked Bootstrapped Gilbert Cell in 0.13 μ m SiGe BiCMOS
4:15 PM		A Very Low Phase-Noise Ku-band Coupled VCO in 0.25 μ m SiGe:C BiCMOS Technology With Low Frequency Pushing
4:40 PM		A 61 GHz SiGe Transmitter Chip for Energy and Data Transmission of Passive RFID-Single-Chip-Tags with Integrated Antennas
5:05 PM	END	