

AGENDA

DTRA Radiation Effects Review, NRO Nanoscale Rad-Hard Review, General RHBD Technical Interchange Meeting

Room 134 (Jacobs Believed in Me Auditorium)
Featheringill Hall (FGH)
Vanderbilt University

Tuesday, 12 May 2015

Time	Title	Speaker/Place
8:30am	Preliminaries	FGH Room 134
15	Welcome / Announcements	Massengill
5	DTRA Remarks	Paki
5	NRO Remarks	Cohn
9:00	Nanoscale Circuits Research at Vanderbilt DTRA: Radiation Effects in Low-Power & RF Circuitry NRO: Radiation Hardened Nano-Scale IC Microelectronics	Massengill
9:20	Mechanisms and Theory of Radiation Effects in Nanoscale Technologies INVITED: Technology Assessment and Fabrication Outlook Overview of Nanoscale TCAD Modeling Activities 14nm SOI versus Bulk – TCAD Analyses Low Energy Electron Radiation Effects Predicting Muon Upsets with Protons	Alles Alles [ISDE] Ball Ball Sierawski Trippe
10:40	-- BREAK --	Atrium, FGH
11:00	Advanced Technology Fabrication INVITED: Micro/Nano Fabrication for Custom MEMs VU/ISDE Radiation Test Coupon IBM 14nm Fabrication Status Update and Next Gen Plans ST 28nm FDSOI	Kauppila Walsh [U of L] Haeffner Kauppila Alles
12:10	-- LUNCH --	Atrium, FGH
1:15	Advanced Technology Radiation Effects INVITED: Radiation-Induced Nanoelectronic Transport Degradation Characterization of Heavy-Ion Induced SETs in 32nm PDSOI 16nm Bulk FinFET Memory SEU Study First look: 10nm TCAD	Massengill Sanchez [ISI] Maharrey Bhuva Nsengiyumva
2:30	-- BREAK --	Atrium, FGH
3:00	Single Event Design/Analysis Infrastructure INVITED: Rad Tolerant NV Memory Beyond Flash: Ionic Resistive RAM TCAD Support of 32nm SOI Modeling Radiation-Enabled Compact Modeling Next Generation SET Measurement Macro RHBD Program Error Rate Analysis	Kauppila Barnaby [ASU] Ball Kauppila Maharrey Warren
5:00	RECEPTION, STUDENT MEET AND GREET	Adams Atrium
6:30	-- ADJOURN for the day --	

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8:30am	Radiation Effects in Circuits and ICs <i>INVITED: RHBD Body-Driven Circuits for Low-Voltage AMS Systems</i> 32nm SEU Testing Update Observed Frequency Dependencies in Hardened Flip-flop Chains Temperature Effects on Radiation Vulnerabilities at 20nm Radiation Effects on GaN Power Amplifier RF Performance	Holman Loveless [UTC] Quinn Quinn Kay Ives
9:50	Radiation Hardened Design <i>INVITED (tentative): RHBD Program</i> Device Stacking for Hardened SOI Flip-Flop Designs - Update Single Event Characterization of All-Digital PLLs	Massengill Amort [Boeing] Kauppila P. Chen
10:45	-- BREAK --	Atrium, FGH
11:00	SET Sensitivity of Clock Distribution Nets Across 90nm to 14nm Tech. Nodes ESD failure mitigation in 32nm SOI I/O Voltage Reference Hardening and Experimental Results Differential Flip-flop Analyses A/MS Hardening for Advanced Technologies Soft-Error-Aware Physical Synthesis	P. Chen Kauppila Shetler R. Chen Holman Assis
12:30	-- LUNCH --	Atrium, FGH
1:30	Other Programs <i>INVITED: GaN & Alternate Channel Programs at Vanderbilt</i> Charge Collection in Ge-channel Bulk pMOSFETs Charge Collection in Emerging Technology GaAs MOSFETs Proton Irradiation of Ga-Rich and NH ₃ -Rich AlGa _x N/GaN HEMTs Vanderbilt Cubesat Missions and Course Integration DTRA Robotics Program M&NEMS Programs	Witulski [ISDE] Samsel Ni J. Chen Sierawski Witulski Alles
3:15	DISCUSSION	
3:30	ADJOURN	