SOUTH AFRICAN CONFERENCE ON SEMI- AND SUPERCONDUCTOR TECHNOLOGY 2009

Spier Wine Estate, Stellenbosch
8 – 9 April 2009

Programme

Tuesday, 7 April 2009		
Neethlingshof Wine Estate		
19:00	**IEEE's 125th anniversary celebration**	
	Hosted by Prof Monuko du Plessis and Dr Saurabh Sinha	
Wednesday, 8 April 2009		
Spier Wine Estate		
08:00	**Registration, tea and coffee**	
09:00	**Opening, welcome and house rules**	**Plenaries**
	Prof Willem Perold (Univ Stellenbosch) - Conference Chair	
	Dr Thandi Mgwebi (NRF) - Programme Director: Human Capacity Programme	
	Prof Robert van Zyl (CPUT) - Programnme Chair	
09:20	**A South African Perspective**	
	Prof Monuko du Plessis (semiconductor technology)	
	Prof Willem Perold (superconductor technology)	Chair: Robert van Zyl
09:40	[35] *The growth mechanism and photonic properties of 1D and 2D ZnO nanostructures by low temperature method* - Sithole MJ	**Session 1: Posters in the foyer**
	[38] *The capability at Stellenbosch University for the fabrication of micron and submicron structures* - Buttner U	
	[22] *A SONET OC-48 CMOS based integrated optical transceiver* - Kalombo TY	
	[03] *Effects of grain size on mechanical properties of nanostructured copper alloy by Severe Plastic Deformation (SPD) Process* - Sanusi K	
	[11] *3D CMOS Photodiode modelling and simulator design using the Finite Element Method* - Ellinghaus P	
	[16] *Electrochromic and photochromic behaviour of electrospun WO3 nanofibres deposited on TCO substrates* - Sone BT	Chair: Prof Robert van Zyl
10:40	**Tea**	
11:00	[19] *A CMOS based multiple-access DSSS transceiver* - Sinha S	**Session 2: HF Microelectronics**
11:20	[12] *Impact of future CMOS scaling on power consumption: Electrical versus optical clock distribution networks* - Venter PJ	
11:40	[2] *Design methodology for SiGe-based Class E power amplifier* - Božanić M	
12:00	[20] *Adaptive FIR filter pre-emphasis for high speed serial links* - Goosen ME	
12:20	[24] *Phase noise reduction of a 0.35 µm BiCMOS SiGe 5 GHz voltage controlled oscillator* - Lambrechts JW	
12:40	[23] *On-chip impedance tuning for mm-wave applications* - Mabuza BC	Chair: Dr Trudi Joubert
13:00	**Lunch**	
14:00	[25] *A novel electroluminescence technique to analyse mixed field emission and impact ionisation reverse breakdown* - du Plessis M	**Session 3: Electron Devices / Nanostructures**
14:20	[invited] *Optoelectronic Multifunctionality in VO2 based nano-systems* - Maaza M	
14:40	[10] *Microbolometer model and characterisation* - Swart MJ	
15:00	[37] *A CMOS based multiplexer design of a 16 x 16 read-out array for infrared microbolometer sensors* - Visser PJ	
15:20	[8] *Nanostructured photovoltaic cells: Using AFM and QCM to produce accurate film thicknesses* - Botha AF	
15:40	[41] *Optimisation strategies for GaAs mm-Wave Gunn diodes* - van Zyl RR	Chair: Prof Willie Perold
16:00	**Tea / Close of Day**	
16:20	[04] *Overview of superconducting digital electronics* - Taylor J	**Session 4: Superconductor Technology**
16:40	[06] *FEM solution using vector elements for a superconducting microstrip line* - Young A	
17:00	[07] *AFM plough YBCO microbridges: substrate effects* - Elkaseh AAO	
17:20	[13] *Superconducting sensors and imagers* - Northeast D	
17:40	[17] *In situ superconducting MgB2 thin films grown by combined pulsed laser deposition and thermal evaporation* - Hardie GL	
18:00	[29] *PBCO/YBCO bilayer growth and optimization for the fabrication of buffered step-edge Josephson Junctions* - Buttner U	Chair: Prof Willie Perold
19:00	**Conference Dinner at Moyo**	

Thursday, 9 April 2009		
Spier Wine Estate		
08:00	**Tea, coffee**	
08:30	**Plenary Session: Prof Cor Claeys**	**Plenary**
	Trends and Challenges in More Moore and More than Moore Research	Chair: Prof Monuko du Plessis
09:30	**Short break**	
09:40	[1] *A 384x288 pixel CMOS image readout chip* - Joubert T	**Session 5: IC Simulation, Layout**
10:00	[30] *A CMOS implementation of Jakes Fading Channel* - Buckle JP	
10:20	[36] *High speed, low power CMOS optical receiver front-end* - Janse van Rensburg C	
10:40	[26] *Expanded adaptive LMS algorithm for the removal of interference in capacitive sensing devices* - van der Merwe SJ	
11:00	[21] *Mathematical analysis of input matching techniques for application in wide-band LNA design* - Weststrate M	
11:20	[28] *Development of a next-generation commercial computer aided design (CAD) tool* - Pool J	Chair: Prof Lukas Snyman
11:40	**Tea**	
12:00	[09] *Design and manufacture of nanometre-scale SOI light sources* - Bogalecki AW	**Session 6: Photonics / Optics / Physics**
12:20	[39] *Photonic transitions (1.4eV-2.8eV) in Silicon p+np+ injection-avalanche CMOS LEDs as function of depletion layer profiling and defect engineering* - Snyman LW	
12:40	[40] *Simulation of Si LED (450nm - 750nm) light propagation phenomena in CMOS integrated circuitry for MOEMS applications* - Snyman LW	
13:00	[15] *MOVPE growth and characterisation of III-V Sb-based quantum well structures* - Wagener V	
13:20	[27] *Hall and thermoelectric evaluation of narrow gap semiconductors* - Wagener MC	Chair: Dr Saurabh Sinha
13:40	**Lunch / prizegiving / Closing** - Prof Monuko du Plessis	

F'SATI French South African Technology Institute

Cape Peninsula University of Technology

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