

# DAY 1

## THURSDAY, MAY 22, 2014

	VENUE							
	EA	E3-06-02	E3-06-03	E3-06-04	E3-06-05	E3-06-06	E3-06-08	E3-06-09
08:00 AM - 09:00 AM	Registration							
09:00 AM - 09:45 AM	Opening Speech by: Prof Chua Kee Chaing, Head, ECE Department and Keynote Speech by: Dr. Ulf Schneider							
09:45 AM - 10:30 AM	Tea Break and Poster Session							
10:30 AM - 12:30 PM		Power and Energy Systems (Session 1)	Microelectronics Technologies and Devices (Session 1)	Communications and Networks (Session 1)	Integrated Circuits and Embedded Systems (Session 1)	Control, Intelligent Systems, and Robotics (Session 1)	Signal Processing and New Media (Session 1)	Microwave and Radio Frequency (Session 1)
12:30 PM - 01:30 PM	Lunch Break							
01:30 PM - 03:30 PM		Power and Energy Systems (Session 2)	Microelectronics Technologies and Devices (Session 2)	Communications and Networks (Session 2)		Control, Intelligent Systems, and Robotics (Session 2)	Signal Processing and New Media (Session 2)	Microwave and Radio Frequency (Session 2)
03:30 PM - 04:00 PM	Tea Break							
04:00 PM - 06:00 PM		Power and Energy Systems (Session 3)	Microelectronics Technologies and Devices (Session 3A)	Communications and Networks (Session 3)	Microelectronics Technologies and Devices (Session 3B)	Control, Intelligent Systems, and Robotics (Session 3)	Signal Processing and New Media (Session 3)	

# DAY 2

## FRIDAY, MAY 23, 2014

	VENUE							
	LT2	E3-06-02	E3-06-03	E3-06-04	E3-06-05	E3-06-06	E3-06-08	E3-06-09
08:30 AM - 09:00 AM	Registration							
09:00 AM - 11:00 AM		Power and Energy Systems (Session 4)	Microelectronics Technologies and Devices (Session 4A)	Communications and Networks (Session 4)	Microelectronics Technologies and Devices (Session 4B)	Control, Intelligent Systems, and Robotics (Session 4)		
11:00 AM - 12:00 PM	Lunch Break							
12:00 PM - 02:00 PM			Microelectronics Technologies and Devices (Session 5A)	Communications and Networks (Session 5)	Microelectronics Technologies and Devices (Session 5B)			
02:00 PM - 02:30 PM	Closing Speech							
02:30 PM onwards	Tea Break and Networking							

# POWER AND ENERGY SYSTEMS

SESSION 1

Thursday, 22 May 2014 / 10:30 AM - 12:30 PM / E3-06-02

**Farshad**

*A Straightforward Statistical Modelling and Analysis of PHEVs' Demand in Smart Grids*

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**Quan Hao**

*Incorporating Wind Power Forecast Uncertainties Into Stochastic Unit Commitment Using Neural Network-Based Prediction Intervals*

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**Dhivya Sampath Kumar**

*Optimal Power Scheduling of Distributed Resources in Smart Grid*

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**Anurag Sharma**

*Impacts of V2G Facility of Electric Vehicles on Service Restoration*

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**Anupam Trivendi**

*Multi-objective Evolutionary Algorithm for Day-Ahead Thermal Generation Scheduling*

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SESSION 2

Thursday, 22 May 2014 / 01:30 PM - 03:30 PM / E3-06-02

**Katayoun Rahbar**

*Real-Time Energy Storage Management for Renewable Integration in Microgrids: An Off-line Optimization Approach*

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**Jayantika Soni**

*Load-side Demand Management in Buildings using Controlled Electric Springs*

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**Krishnanand Kaippilly Radhakrishnan**

*Wireless Smart Metering for Power Quality Analysis and Building Energy Management*

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**Mohammad Reza Vedady Moghadam**

*Distributed Frequency Control in Smart Grids via Randomized Demand Response*

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**Gu Chaojun**

*Dynamic State Estimation Under Communication Failure Using Kriging Based Bus Load Forecasting*

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**Ce Shang**

*Stand Alone Hybrid-PV Systems: Power Dispatch Using an Improved Particle Swarm Optimization (PSO) Algorithm*

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# POWER AND ENERGY SYSTEMS

SESSION 3

Thursday, 22 May 2014 / 04:00 PM - 06:00 PM / E3-06-02

**Satarupa Bal**

*Modular Snubberless Bidirectional Soft-switching Current-fed Dual 6-Pack (CFD6P) dc/dc Converter*

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**Amit Kumar Singh**

*A Novel Full Bridge Resonant High Voltage DC-DC Converter for UAVs and Satellites*

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**Radha Sree Krishna Moorthy**

*Impulse Commutated Zero Current Switching Current-fed Push-pull Converter: Analysis, Design and Experimental Results*

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**Zhang Yuan**

*Over-Current Protection Scheme for SiC Power MOSFET DC Circuit Breaker*

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**Ramprakash Kathiresan**

*Topologies for High-Power LEDs in Parallel Operation*

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SESSION 4

Friday, 23 May 2014 / 09:00 AM - 11:00 AM / E3-06-02

**Dong Zibo**

*Satellite Image Analysis and a Hybrid ESSS/ANN Model to Forecast Solar Irradiance in the Tropics*

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**Yang Dazhi**

*Evaluation of Transposition and Decomposition Models for Converting Global Solar Irradiance from Tilted Surface to Horizontal in Tropical Regions*

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**Aloysius Wishnu Aryaputera**

*Solar Irradiance Forecast in Singapore using the WRF Model*

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**Jeevan Adhikari**

*Modular Interleaved Soft-switching DC-DC Converter for High Altitude Wind Energy Application*

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**Yang Dazhi**

*Solar Irradiance Forecasting using Spatio-temporal Empirical Kriging and Vector Autoregressive Models with Parameter Shrinkage*

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# MICROELECTRONICS TECHNOLOGIES AND DEVICES

SESSION 1

Thursday, 22 May 2014 / 10:30 AM - 12:30 PM / E3-06-03

**Prakash Pitchappa**

*Coarse Fine Tuning of MEMS Terahertz Metamaterial and*

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**Xiang Zhuolin**

*Ultra-thin Flexible Polyimide Neural Probe Embedded in Dissolvable Maltose-Coated Microneedle*

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**Sanghoon Lee**

*Tripolar Slings Electrode for Neural Signal Recording of Sciatic Nerve*

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**Ho Chong Pei**

*Characterization of Polycrystalline Silicon Based Photonic Crystal Suspended Membrane for High Temperature Applications*

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**Dacheng Wang**

*Coupling Effect of Spiral-shaped Terahertz Metamaterials for Tunable Electromagnetic Response*

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SESSION 2

Thursday, 22 May 2014 / 01:30 PM - 03:30 PM / E3-06-03

**Gao Minmin**

*Green Chemistry Synthesis of a Nanocomposite Graphene Hydrogel with Three-dimensional Nanomesopores for Photocatalytic H<sub>2</sub> Production*

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**Zhang Xiaoyi**

*Electrical Performance of Ballistic N-Channel GaSb Double-Gate Ultra-Thin Body Transistor*

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**Lwin Min Kyaw**

*Thermally Robust RuOx Schottky Diodes and HEMTs on III-Nitrides*

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**Leong Wei Sun**

*Metal Contacts to Graphene*

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**Naomi Nandakumar**

*Gallium-doped Zinc Oxide Thin Films Deposited by Industrial Spatial Atomic Layer Deposition as a Transparent Conducting Oxide for Photovoltaic Applications*

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# MICROELECTRONICS TECHNOLOGIES AND DEVICES

SESSION 3A

Thursday, 22 May 2014 / 4:00 PM - 06:00 PM / E3-06-03

**Yang Yumeng**

*Investigation of Magnetic Proximity Effect in Ta/YIG Bilayer Hall Bar Structure*

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**Loong Li Ming**

*Strain-enhanced Tunneling Magneto Resistance in MgO Magnetic Tunnel Junctions*

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**Low Boon Hao Melvin**

*Electrical Control of the Magnetic Properties of Ferromagnetic Thin Films*

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**Meng Zhaoliang**

*Domain Wall Motions in Perpendicularly Magnetized CoFe/Pd Multilayer Nanowire*

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**Wu Yang**

*Terahertz Modulators Based on Ionic Liquid Gating of Grapheme*

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SESSION 3B

Thursday, 22 May 2014 / 4:00 PM - 06:00 PM / E3-06-05

**Guo Siyu**

*Investigation on the Short Circuit Current Increase for PV Modules Using Halved Cells*

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**Weimin Li**

*Effect of Deposition Pressure on the Properties of Magnetron Sputter Deposited Mo Back Contact for CIGS Solar Cells*

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**Cangming Ke**

*Investigation of Interdigitated Metallisation Patterns for Polycrystalline Silicon Thin-film Solar Cells on Glass*

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**Liu Zhe**

*Characterisation and Modelling of Textured Surfaces in Silicon Wafer Solar Cells*

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**Vinodh Shanmugam**

*Optimisation of Screen-printed Metallisation for High Efficiency Silicon Wafer Solar Cells*

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**Guo Siyu**

*Vertically Mounted Bifacial PV Modules: A Global Analysis*

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# MICROELECTRONICS TECHNOLOGIES AND DEVICES

SESSION 4A

Friday, 23 May 2014 / 09:00 AM - 11:00 AM / E3-06-03

**Tang Muzhi**

*Investigation of Plasma Etching of Silicon Wafer Surface for Heterojunction Silicon Solar Cell Applications*

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**Lim Fang Jeng**

*Overcoming Light Soaking Issues in Inverted Organic Solar Cells by Interfacial Layer Modifications*

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**Tang Muzhi**

*Random Pyramids Texture Size Variation and Their Implication for Solar Cell Light Trapping and Passivation*

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**Pannirselvam S/O Somasuntharam**

*Si<sub>2</sub>H<sub>6</sub> Surface Passivation of AlGaIn/GaN MOS-HEMTs*

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**Dong Yuan**

*Germanium-Tin Metal-Semiconductor-Metal Photodetectors*

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SESSION 4B

Friday, 23 May 2014 / 09:00 AM - 11:00 AM / E3-06-05

**Banerjee Karan Dhrubojoti**

*Weak Anti-localization in the Topological Insulator BiSbTeSe<sub>2</sub>*

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**Low Kain Lu**

*Ballistic Transport Performance of Silicene and Germanene Transistors*

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**Wu Qing Yang Steve**

*Generation of Continuous-wave Terahertz from Photomixer with Single Walled Carbon Nanotubes*

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**Cangming Ke**

*Electrical Activity of Geometrically Necessary Dislocations in Polycrystalline Silicon Thin Films Prepared by Solid Phase Crystallisation*

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**Ye Lin Thu**

*Study of Germanium Thin Film as Anode for High-energy Lithium Ion Battery*

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**Mohammad Abdullah Sadi**

*Effect of Phase Inversion on Quantum Transport in Group – IV Two-dimensional U-Shape Devices*

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# MICROELECTRONICS TECHNOLOGIES AND DEVICES

SESSION 5A

Friday, 23 May 2014 / 12:00 PM - 02:00 PM / E3-06-03

**Chen Yiguo**

*Weak Anti-localization in the Topological Insulator BiSbTeSe<sub>2</sub> Tracking the Role of Proximity and Size for Localized Surface Phonon Polariton Resonators*

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**Wu Mengxue**

*Microsphere Assisted Nano-scope Simulations for Engineering Design*

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**Yang Jing**

*Hybrid Pulsed Laser Micro/Nanostructuring of Si Surfaces for Surface Enhanced Raman Scattering*

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**Fu Xiaotian**

*Enhanced Broadband Absorption in Silicon Nano-structure Arrays for Solar Cells*

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**Guo Li**

*Nanostructuring of Nickel Hydroxide for Efficient Electrochromic Devices*

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**Gu Jing**

*Cryogenic Imaging of Biological Specimens Using Helium Ion Microscope*

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SESSION 5B

Friday, 23 May 2014 / 12:00 PM - 02:00 PM / E3-06-05

**Soon Bo Woon**

*Fabrication and Characterization of a Vacuum Encapsulated Curved Beam Switch for Harsh Environment Application*

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**Wang Tao**

*MEMS Based Liquid Viscosity Sensor*

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**Zhou Huchuan**

*Study of the Thermoelectric Properties of Heavily Doped Polysilicon at High Ambient Temperature*

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# COMMUNICATIONS AND NETWORKS

SESSION 1

Thursday, 22 May 2014 / 10:30 AM - 12:30 PM / E3-06-04

**V Prasad Anjangi**

*Implementation of STDMA on Underwater Acoustic Modem: A Time Domain Interference Alignment Technique*

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**Zhou Jingjing**

*10-Gb/s, 20-km VCSEL Optical Access Link at 1.5 $\mu$ m with 23-dB Power Budget*

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**Yu Yi**

*OSNR Monitoring by using Single Sampling Channel Generated 2-D Phase Portrait*

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**Purnima Murali Mohan**

*Performance Study of TCP Flows with QoS-supported OpenFlow in Data Center Networks*

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**Wu Gaofeng**

*A Trade-off between Power Efficiency and Blocking Performance in IP over WDM Networks*

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SESSION 2

Thursday, 22 May 2014 / 01:30 PM - 03:30 PM / E3-06-04

**Anshoo Tandon**

*Packet delay analysis for Energy Harvesting Communication Systems*

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**Aidi Huang**

*Towards the Internet of Vehicles: A Geo-Segment Architecture for VANET*

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**Huang Cheng**

*ACS-EM: A New Method for Indoor Localization*

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**Aissan Dalvandi**

*Time-aware VM-placement and Routing with Bandwidth guarantees in Green Data Centre*

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**Kang Seungmin**

*ESPRESSO: An Encryption as a Service for Cloud Storage Systems*

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SESSION 3

Thursday, 22 May 2014 / 04:00 PM - 06:00 PM / E3-06-04

**Xu Zhuoran**

*Pilot-Assisted, Maximum-Likelihood Sequence Detection in QAM Coherent Optical Systems*

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**Wang Qian**

*Tight, Closed-Form Bounds and Invertible Average Error Probability Expressions over Composite Fading Channels*

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**Zheng Huanhuan**

*The Performance of Inter-satellite BFSK and 4FSK Optical Communication System with Pointing Error*

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**Song Tianyu**

*Receivers for the FSO Channel with IM/DD*

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**Wu Tong**

*Detection-Decoding on Staggered BPMR Channels with Written-in Errors and Inter-Track Interference*

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**Qikai Hu**

*Performance Improvement of Ultra-Narrow Spectrum-Sliced Incoherent Light Signals Using Offset Optical Filtering*

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# COMMUNICATIONS AND NETWORKS

SESSION 4

Friday, 23 May 2014 / 09:00 AM - 11:00 AM / E3-06-04

**Amna Jamal**

*A Novel Energy Efficient MAC for Cognitive Radio Sensor Networks*

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**Zhou Chongyu**

*Ambient Sensing-based Incentives for Behaviour Modification in Demand Response*

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**Vinay Chamola**

*Resource Provisioning and Dimensioning for Solar Powering*

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**Rajandekar Ajinkya Shashikant**

*Modelling Wi-Fi White Spaces for M2M Communication*

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**Pierrick Abiven**

*FM Passive Bistatic Radar Imaging of Airplanes in a Real Configuration*

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**Amna Jamal**

*Spectrum Aware and Energy Efficient MAC Protocol for Cognitive Radio Sensor Networks*

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SESSION 5

Friday, 23 May 2014 / 12:00 PM - 02:00 PM / E3-06-04

**Leithon Melo Johann**

*Online Energy Management Strategies for Base Stations Powered by the Smart Grid*

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**Zhou Xun**

*Wireless Information and Power Transfer: Architecture Design and Rate-Energy Trade Off*

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**Yinghao Guo**

*Joint Energy and Spectrum Cooperation for Cellular Communication Systems*

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**Liu Liang**

*Secrecy Wireless Information and Power Transfer with MISO Beamforming*

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**Luo Shixin**

*Joint Transmitter and Receiver Energy Minimization in Multiuser OFDM Systems*

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# INTEGRATED CIRCUITS AND EMBEDDED SYSTEMS

SESSION 1

Thursday, 22 May 2014 / 10:30 AM - 12:30 PM / E3-06-05

**Md Kafiul Islam**

*Artifact Removal for Ambulatory EEG*

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**Jerrin Pathrose**

*A Time-Domain Smart Temperature Sensor without an Explicit Bandgap Reference in SOI CMOS Operating up to 225°C*

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**Anastacia B. Alvarez**

*Optimization of a Near-threshold Microcontroller for Wireless Sensor Network Applications*

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**Jianming Zhao**

*A Wireless Power Management and Data Telemetry Circuit Module for High-Compliance-Voltage Electrical Stimulation Applications*

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**Hoo Chin Hau**

*A Directional Coarse-Grained Power Gated FPGA Switch Box and Power Gating Aware Routing Algorithm*

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**Li Yongfu**

*Placement Strategy for Binary-Weighted Capacitive Array in SAR ADC Using Multiple Weighting Methods*

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# CONTROL, INTELLIGENT SYSTEMS AND ROBOTICS

SESSION 1

Thursday, 22 May 2014 / 10:30 AM - 12:30 PM / E3-06-06

**Ramesh Bharath**

*Scene Understanding via Saliency Consensus*

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**Yang Yue**

*Identification and Control of Nonlinear Systems using Neural Networks and Multiple Models*

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**Li Xian**

*Feature Selection for Time Series Modeling*

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**Gee Sen Bong**

*Diversity Preservation with Hybrid Recombination Strategy in Multiobjective Evolutionary Algorithm*

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**Hu Jun**

*Hierarchical Organized Memory Model with Spike-driven Learning of Visual Features*

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**Li Xuefang**

*An Iterative Learning Control Approach for Linear Systems with Randomly Varying Trial Lengths*

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SESSION 2

Thursday, 22 May 2014 / 01:30 PM - 03:30 PM / E3-06-06

**Wang Chen**

*Optimal Critic Learning for Robot Control in Time-Varying Environments*

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**Wilson Amalraj Arokiasami**

*A Multi Agent Based Obstacle Detection for Micro Aerial Vehicles*

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**Ang Zong Yao**

*Development of an Unmanned Tail-sitter with Reconfigurable Wings: U-Lion*

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**Varadarajan Ganesan**

*Robust Underwater Obstacle Detection and Avoidance Algorithm*

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**Li Kun**

*Vision Based Autonomous Control of an Ultralight Quadrotor Micro Aerial Vehicle*

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# CONTROL, INTELLIGENT SYSTEMS AND ROBOTICS

SESSION 3

Thursday, 22 May 2014 / 4:00 PM - 06:00 PM / E3-06-06

**Liu Shuo**

*Improved Indoor Tracking Based on Generalized-T Noise Model*

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**Arun Shankar Narayanan**

*Development and Evaluation of a Telerehabilitation Platform using Kinect*

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**Kyaw Ko Ko Htet**

*Adaptive Streaming Framework for Control and Monitoring Applications*

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**Yu Qiang**

*A New Learning Rule for Classification of Spatiotemporal Spike Patterns*

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**Arun Shankar Narayanan**

*A Telerehabilitation Application with Pre-defined Consultation Classes*

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SESSION 4

Friday, 23 May 2014 / 09:00 AM - 11:00 AM / E3-06-06

**Kyaw Ko Ko Htet**

*Set-Point Manipulation Approach towards PID Control Adaptation in a Closed Architectural Framework*

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**Arifur Rahman**

*Discrete time Adaptive Compensator for Suppression of Resonance in Hard Disk Drive Servo System*

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**Yan Weili**

*Identification of Critical Resonant Modes Above the Nyquist Frequency Using Multirate Inputs*

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**Zhu Haiye**

*Design and Modeling of A Six Degrees-of-Freedom Unlimited Stroke Magnetically Levitated Positioner*

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**Yu Chao**

*System Identification in Presence of Outliers*

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# SIGNAL PROCESSING AND NEW MEDIA

SESSION 1

Thursday, 22 May 2014 / 10:30 AM - 12:30 PM / E3-06-08

**Xu Juan**

*Predicting Human Gaze Beyond Pixels*

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**Tan Hui Li**

*Seam Carving Using Perceptually Relevant Energy Function*

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**Huang Rui**

*Vision Based Autonomous Navigation of a MAV*

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**Guo Jiaming**

*Video Co-segmentation for Meaningful Action Extraction*

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**Zhuwen Li**

*Perspective Motion Segmentation via Collaborative Clustering*

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**Atieh Bamdadian**

*Pre-cue EEG Rhythms Can Predict Classification Performance of MI-based BCI Users*

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SESSION 2

Thursday, 22 May 2014 / 01:30 PM - 03:30 PM / E3-06-08

**Shahzor Ahmad**

*Challenges in Top-Down Scene Recognition*

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**Fang Fan**

*Compressed Sensing on Photo Acoustic Microscopy Image Reconstruction*

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**Lu Canyi**

*Block Diagonal Affinity Matrix Pursuit for Subspace Segmentation*

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**Shahab Ensafi**

*Automatic CAD System for HEP-2 Cell Image Classification*

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**Yuan Jun**

*A Decision-tree Based Classification System on Autoimmunization Cells*

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**Jiang Ming**

*Leveraging Human Fixations in Sparse Coding: Learning a Discriminative Dictionary for Saliency Prediction*

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SESSION 3

Thursday, 22 May 2014 / 04:00 PM - 06:00 PM / E3-06-08

**Tran Lam An**

*Tricks for Action Recognition with Bag-of-feature-model*

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**Lui Luoqi**

*Deeper Aging Face Recognition with Large Gaps*

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**Cui Zhaopeng**

*A Global Linear Method for Camera Pose Registration*

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**Cai Lile**

*Two Level Clustering based on SOM for Multi-dimensional Transfer Function Design*

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**Bui Nhat Linh**

*Automatic Segmentation of the Upper Airway from CBCT*

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**Agus Pratondo**

*Vocal Cord Segmentation from CT Images using Machine Learning*

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# MICROWAVE AND RADIO FREQUENCY

SESSION 1

Thursday, 22 May 2014 / 10:30 AM - 12:30 PM / E3-06-09

**Jiajun Zhao**

*Focal Needle and Multi Foci Created with Flat Meta Surface Transducers in Acoustics*

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**Muhammad Qasim Mehmood**

*Generation of Optical Vortex Beam by a Nano-Spiral Structure*

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**Goh Chean Khan**

*A UHF Near-field and Far-field RFID Antenna with Circularly-Polarized Radiation*

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**Mohammad Danesh**

*Graphene Plasmonic Nano-Antenna Arrays as Electronically Tunable Nano-Sorters*

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**Amin Kianinejad**

*Extremely Small Spoof Surface Plasmon Structure*

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SESSION 2

Thursday, 22 May 2014 / 01:30 PM - 03:30 PM / E3-06-09

**Song Jian**

*On the Investigation of Measurement Uncertainties in a Typical EMI Test System*

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**Wei Zhun**

*Three Dimensional Electrostatic Green's Function for Tip Base Junction*

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**Mahdy Rahman Chowdhury**

*Modification of Einstein-Laub Optical Force Equations to Resolve the Problems of Photon Momentum and Optical Force*

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**Huapeng Ye**

*Creation of Vectorial Bottle-Hollow Beam Using Radially or Azimuthally Polarized Light*

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**Gu YingHong**

*Direct Excitation of Dark Plasmonic Resonances in Visible Light at Normal Incidence*

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