Technical Programme
ISED 2014
15th December 2014 (Monday) – ISED 2014
(Venue: EC Department)

08:30 AM-09:30 AM Registration

09.30 AM-11.00 AM Tutorial 1: Ultra Low Voltage Design: Challenges and Opportunities
Speaker: Prof. Bharadwaj Amrutur, ECE Dept., IISc.
Chair: Sumam David, NITK Surathkal

11.00 AM-11.30 AM Tea Break

11.30 AM-12.30PM Tutorial 1: Ultra Low Voltage Design: Challenges and Opportunities
Speaker: Prof. Bharadwaj Amrutur, ECE Dept., IISc.

12:30PM - 01:45 PM Lunch Break

01.45 PM - 03.15 PM Tutorial 3: Interdisciplinary Approach to Electronic Design and Applications
Speaker: Dr. Ashok Rao, Freelance Consultant.
Chair: Arulalan M. R., NITK Surathkal

03.15 PM – 03.30 PM Tea Break

03.30 PM-04.30 PM Tutorial 3: Interdisciplinary Approach to Electronic Design and Applications
Speaker: Dr. Ashok Rao, Freelance Consultant.

Tutorial 2: General Purpose Computing using GPUs
Speaker: Dr. Prakash Raghavendra, AMD, Bangalore
Chair: Muralidhar Kulkarni, NITK Surathkal

Symposium – Day 1
16th December 2014 (Tuesday) – ISED 2014
(Venue: ATB Seminar Hall, NITK Surathkal)

08:00AM-09:00AM Registration

09:00AM - 09:30AM ISED Inaugural Event

09:30 AM - 09:45 AM Tea Break

09:45AM-10.30 AM Keynote – 1
Title: Safe IP Integration Using Container Modules
Speaker: Prof. Rolf Drechsler, University of Bremen, Bremen, Germany
Chair: Debesh K Das, CSE, Jadavpur University, Kolkata

10:30 AM - 11:15 AM Keynote – 2
Title: Nonvolatile Memory and LSI Application of Crystalline Oxide Semiconductor
Prof. Masahiro FUJITA, Tokyo University
Chair: Virendra Singh, IIT Mumbai

11:15 AM - 11:30 AM Tea Break
## Keynote – 3
**Title:** CMOS Compatible Nanostructured Gas Sensors  
**Speaker:** Prof. Navakanta Bhat, Indian Institute of Science, Bangalore, India  
**Chair:** M. S. Bhat, NITK Surathkal

### Parallel sessions

#### Session – A1  
(EC Seminar Hall)  
Chair: Prof. Rolf Drechsler

**Paper-185:** Diagnosis of SMGF in ESOP based Reversible Logic Circuit”, B. Mondal, C. Bandyopadhyay, D.K Kole, J. Mathew and H. Rahaman

**Paper -155:** “Synthesis of Symmetric Boolean Functions Using a Three-Stage Network” Arighna Deb, Debesh Das and Bhargab Bhattacharya

**Paper-122:** “Design of Fault Tolerant Universal Logic in QCA”, Bibhash Sen, Ritjoy Mukherjee, Rajdeep Kumar Nath and Biplab K Sikdar

#### Session – B1  
(CSE Seminar Hall)  
Chair: Dr. Jimson Mathew


**Paper-16:** “Design and Implementation of LMAPP Decoder Based on Novel Un-Grouped Sliding Window Technique”, Rahul Shrestha and Roy Paily

**Paper-147:** A Low complexity Architecture for Online on-chip Detection and Identification of f-QRS feature for Remote Personalized Health Care Applications-Naresh Vemishetty, Arpit Jain, Aashish Amber and Amit Acharyya

#### Session – C1  
(EE Seminar Hall)  
Chair: Prof. Navakanta Bhat

**Paper -49:** The Design of Ultra Low Power CMOS CGLNA in Nanometer Technology-Kavyashree P and Dr.Siva S Yellampalli

**Paper -69:** Impact of Channel Doping and Gate Length on Small Signal Behaviour of Gate Electrode Work function Engineered Silicon Nanowire MOSFET at THz Frequency-Neha Gupta and Rishu Chaujhar

**Paper -113:** Tunable Active Biquad Filter in ±0.9V 32nm CNFET-Shailendra Kumar Tripathi and Mohd. Samar Ansari

#### Lunch Break

#### Session – A2  
(EC Seminar Hall)  
Chair: Prof. Susmita Sur-Kolay, ISI

**Paper-109:** Low Energy and Area Efficient Non-binary Capacitor Array based SAR ADC-D. N. Jagadish and M. S. Bhat

**Paper-15:** A Novel Temperature Stable Current Mode Bandgap for Wide Range of Supply Voltage Variation-Sovan Ghosh

**Paper-142:** Inductive Tuned High Isolation RF MEMS Capacitive Shunt Switches E.S. Shajahan, M.S. Bhat and Chenna Reddy

**Paper-6:** Low Voltage CMOS Active Inductor with Bandwidth and Linearity Improvement -Priya Meharde, Vandana Niranjani and Ashwni Kumar

#### Session – B2  
(CSE Seminar Hall)  
Chair: Prof. Debesh K Das, JU

**Paper -91:** Power Aware Fault Tolerance in Wireless Networks with Heterogeneous Nodes-Shrutika Joshi and Srinivas A


**Paper-56:** Multilevel homogeneous detection analyzer for medical diagnostic application in Digital Microfluidic Biochips:-P. Roy, T. Chakrabarty, H. Rahaman and P. S. Dasgupta

#### Session – C2  
(EE Seminar Hall)  
Chair: Dr. Zoran Stamenkovic, IHP, Frankfurt

**Paper -129:** A Novel GNR Interconnect Model to Reduce Crosstalk Delay-S. Bhattacharya, D. Das and H. Rahaman


**Paper-145:** Plasmonic lens based on elliptically tapered metallic nano slits- Aparna U, H.S. Mruthyunjaya and M Satish Kumar

**Paper-176:** A Low-complexity On-chip Real-time automated ECG
**Paper-76: An Improved Multi-Band Speech Enhancement Utilizing Masking Properties of Human Hearing System**

- **Authors:** Navneet Upadhyay

Frame Identification Methodology targeting Remote healthcare-Krishna Bharadwaj Chivukula, Naresh Vemishetty, Agathyia Jagirdar and Amit Acharyya

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**Poster Session**

*Venue: EC Department*

**Chair:** Prof. Ramesh Kini, NITK and Aparna P, NITK Surathkal

- **P-144:** “Possibilistic Fuzzy c-Means Clustering Algorithm for Partial Discharge Pattern Recognition using NLPCA method”, Sumathi Subburaj, Madhu S and Vidya H A

- **P-123:** “Design of Mechanical sensing system based on Nano BaTiO3 embedded in Bio Polymer electrets”, Shanmugavel Murugan, Eliyas Praveen and Kalayanasundaram Jayakumar

- **P-94:** Automated Physical Verification of I/O Pads in Full-Custom Environment”, Rajesh Mangalore Anand, Soujanya Ravula, Kalpashree Mandya Anand and Soumya Satavisa

- **P-46:** “Electronically Tunable Resistor-less Universal Filter in ±0.5V 32nm NFET”, Jyoti Sharma, Mohd. Saman Ansari and Jankiballabh Sharma

- **P-116:** “FPGA Implementation of Pipelined Blowfish Algorithm”, Swagata Roy Chatterjee, Soham Majumder, Bodhisatta Pramanik and Mohuya Chakraborty

- **P-140:** Method to Determine Contrariety between Architectures containing Stratified Memory Mapped Register sets-Vasant Easwaran, Nagendra Gulur, Sushaanth Srinangapathi, Mihir Mody, Rahul Gulati, Prashant Karandikar and Prithvi Shankar

- **P-159:** A Survey - Super Resolution Techniques for Multiple, Single, and Stereo Images-Chandra Shaker Balure and Ramesh Kini M

- **P-180:** Emotion recognition through speech signal for Human-Computer Interaction- Lalitha Sreeram, Shikha Tripathi, Vivek Madhusudan and Arvind T.H

- **P-31:** A low power 8-bit Asynchronous SAR ADC Design using Charge Scaling DAC Anush Bekal, Manish Goswami, B.R Singh and D Pal

- **P-38:** A New Design of an n-bit Reversible Arithmetic Logic Unit-Subhankar Pal, Chetan Vudadha, Sai Phaneendra P, Sreehari Veeramachaneni and Srinivas Mandalika

- **P-70:** Implementation of Area Efficient Hybrid MBIST for Memory clusters in Asynchronous SoC-Yasha Jyothi M Shirur, Dr. Veena S Chakravarthi and Lakshmi H R

- **P-138:** Fixed Range Block Segmentation and Classification for Fractal Image Compression of Satellite Imagery-Veenadevi S V.

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**Networking/Break**

**Cultural Programme followed by Banquet Dinner**

*Venue: NITK Beach*
Symposium – Day 2
17th December 2014 (Wednesday) – ISED 2014
(Venue: ATB Seminar Hall, NITK Surathkal)

08:30AM -- 09:30AM
Registration

09:30AM - 10:15AM
Keynote – 4
Title: Synthesis Methods for Quantum Computers
Speaker: Prof. Susmita Sur-Kolay, ACM Unit, Indian Statistical Institute, Kolkata, India.
Chair: Jimson Mathew, Bristol University

Keynote – 5
Title: Micro Electro Mechanical Systems for Health Monitoring Systems
Speaker: Prof. S. Mohan, CeNSE, IISc Bangalore
Chair: Prof. Virendra Singh, IITB

10.15AM
11.00 AM
Tea Break

11:00 AM -- 11:30 AM
Parallel sessions

Session –A3
(EC Seminar Hall)
Chair: Prof. Muralidhar Kulkarni, NITK


Paper-126: Novel Topology for a Multiple Input Multiple Gain Switched Capacitor DC-DC Converter with Reduced Switch Count -Chikku Abraham, Rakhee R and Babita Roslind Jose

Paper-52: A Resolution Independent 2 Bits-Per-Cycle SAR ADC-Anish Morakhia, Gunnam Sridhar, Preejit Prakash, Sneha Kudli and Laxminidhi T

Session –B3
(CSE Seminar Hall)
Chair: Prof. U. Sripati, NITK

Paper-121: CA Based Scalable Protocol Processor for Chip Multiprocessors- Mamata Dalui and Biplab K Sikdar

Paper-114: Power-aware automated pipelining of combinational circuits- Priyankar Talukdar

Paper-156: System Architecture For Smart Ubiquitous Health Monitoring System With Area Optimization in Multiple On-chip Radios Scenario-Malyala Pavana Ravi Sai Kiran, Yeginati Siva Krishna, P Rajalakshmi and Amit Acharyya

Session –C3
(EE Seminar Hall)
Chair: Prof. Ramesh Kini M., NITK

Paper-11: Design & Development of FPGA & FPAA based Remote Terminal Units for Nuclear Power Plants- Aditya Gour, Ramesh Sanga, R P Behera, P Sahoo, N Murali and Satya Murty


12:40 PM-- 02.00 PM
Lunch Break
**Venue: EC Seminar Hall**

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<th>Time</th>
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| **02:00PM - 02:45PM** | Keynote - 6          | How to Fight Single-Event Effects: Fault-Tolerant ASIC  
Speaker: Dr. Zoran Stamenkovic, IHP, Frankfurt (Oder), Germany  
Chair: Prof. Hafizur Rahaman, IIEST Shibpur |
|               | Keynote - 7          | Automatic Speech Recognition: A Journey Through Time  
Speaker: Dr. Rita Singh, Research Faculty, School of Computer Science, Carnegie Mellon University  
Chair: Dr. Sumam David, NITK, Surathkal |
| **02:45PM – 03:30PM** | Tea Break            |                                                                                               |
| **03:30PM - 03:45PM** | **Parallel sessions** |                                                                                               |

| Session –A4               | Session –B4           | Session –C4                  |
| (EC Seminar Hall)         | (CSE Seminar Hall)    | (EE Seminar Hall)            |
| Chair: Prof. N S V Shet, NITK | Chair: Prof. Sumam David, NITK | Chair: Prof. T. Laxminidhi, NITK |
| **Paper-141**: Integration of LwIP stack over Intel DPDK for high throughput packet delivery to applications - Rajesh R, Kannan Babu R Ramia and Muralidhar Kulkarni | **Paper-20**: GSM and GUI Based Remote Data Logging System - Reza Khan, Rajsekar Kumar Nath and M.S. Bhat |                                                                 |