

# Preface

Manufacturing plays a major role in the development of the country. However, the manufacturing industry is facing several challenges such as rapid product development, flexibility, and low to medium volume, transportation, and low cost etc. Many advanced and unconventional technologies, tools, and software are being developed worldwide to enable solutions to these challenges. Manufacturing and design of integrated circuits (ICs) comprises a large portion of research advances in manufacturing because of the need for precise work. To enable exchange of ideas on current trends in this area, the 1st International Conference on Nano-electronics, Circuits & Communication Systems (NCCS-2015) was organized by the Indian Society of VLSI Education (ISVE), Ranchi and the Institution of Electronics and Telecommunication Engineers (IETE) Ranchi at Advanced Regional Telecom Training Centre (ARTTC) near Jumar River Hazaribag Road Ranchi from 9 to 10th May, 2015. Around 300 papers were received in total, the best of which are presented in this volume. For this selection, all papers were blind reviewed by three expert reviewers and the presentation sessions were reviewed by a six-member expert committee.

There are a total of 35 papers in this volume that cover the core themes of the conference, i.e., design, simulation, verification, implementation and applications of nano-electronics, circuits and communication systems. The paper by L. Rajesh et al. describe user demand wireless network selection using game theory, with this concept unwanted power radiation will be reduced. Ankur Saxena et al. demonstrate his work on review on band notching techniques for ultra-wideband antenna. Biswajit Ghosh et al. demonstrate his research work on comparing energy efficiency of DF relay assisted cooperative and non-cooperative short-range wireless systems. Abhishek Rawat et al. describe dual band octagonal shape microstrip patch antenna at 5.70 and 8.0 GHz. Nabajyoti Mazumdar et al. explain distributed faulttolerant multi-objective clustering algorithm for wireless sensor network. Abhishek Nag et al. describe an autonomous power in clock getting technology in SRAM-based

FPGA. C. Ranjith et al. explain a hardware implementation of evolvable embedded system for combinational logic circuits using Vertex 6 FPGA. J. Dhurga Devi et al. describe design of a third order self-bias adaptive band width PLL. Srinivasulu Avireni et al. describe operational transconductance amplifier based sinusoidal oscillator with grounded capacitors. Manas Ray et al. describe the evaluation of wavelet based speech codec for VOIP applications. Trupa Sarkar et al. describe leakage reduction by test pattern reordering. R.K. Mugelan et al. demonstrate the performance enhancement of LTE HetNet using EVM based constellation combiner ECC in warp. D.C. Diana et al. describe modified PSO based equalizer for channel equalization. Abahan Sarkar et al. describe online counting of cigarette in packages as an image processing approach. Jha Vijay Kumar et al. demonstrate fuzzy min-max neural-based intrusion detection system. Amiya Sagar Das et al. describe implementation of breadth first search for storage optimization in random storage assignment of automated storage and retrieval system. Neeti Singh et al. describe efficient algorithms for removal of high-density random value impulse noises in images. Bhabani Shankar Das et al. explain prediction depth average velocity and boundary shear distribution in a single-stage channel by lateral distribution method. Kamalini Devi et al. describe the flow computation in symmetric compound channels using conveyance estimation system. Sarika Tyagi et al. describe a 21 nW CMOS operational amplifier for biomedical application. Pallavi Dutta et al. describe performance analysis of three-phase induction motor using Simulink and TMS320C6713. Abhishek Gandhar et al. describe effect of static synchronous series compensator on power balancing in wind farms. Mohini Yadav et al. describe reliability and energy benefit analysis of distribution system incorporating wind turbine generator. A.K.P. Kovendan et al. describe present context of smart grids in India: a survey. S. Sridevi et al. describe real-time simulation design for continuous process industries. M. Rajendra Prasad et al. describe system level performance analysis of embedded system for GSM application. S.M. Annapurna et al. describe robotics research visibility in BRICS country as a scientometrics study. A. Ravishankar Holla et al. describe characterization of TFT sensors for chemical sensing applications. Anurag Kumar Paliwal et al. describe design of a high-performance CMOS charge pump for phase-locked loop synthesizers. Adesh Kumar et al. describe IC packaging with 3D IC tech. method. Akshat Chitransh et al. describe analysis of a self-compensating, low-noise, low-power PLL circuit @45 nm technology node. Krishan Kumar Singh et al. describe design of comparator in sigma delta using 45 nm CMOS technology. Sudhanshu Kumar et al. describe investigation of electrostatic actuation scheme for low-voltage MEMS switch. Kumar Amit et al. describe evaluating the performance of dye-sensitized solar cell with the various key components like electrodes, dyes and electrolytes. Jitendra Yadav et al. describe modeling and simulation of the dynamic response of a generic mechanical linkage for control application under the consideration of the nonlinearities imposed by friction.

Authors and editors have taken utmost care in preparing this volume for publication, but there some errors that might have crept in despite our best efforts. Readers are requested to provide their valuable feedbacks on the quality of presentation and alert us of any inadvertent errors or omissions. We expect that the book will be welcomed by students as well as practicing engineers, researchers, and professors.

Ranchi, India

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