

2022 IEEE 3rd International Conference on VLSI Systems, Architecture, Technology and Applications (VLSI SATA 2022)

**Bangalore, India
16-17 December 2022**



**IEEE Catalog Number: CFP2284Z-POD
ISBN: 978-1-6654-5547-3**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2284Z-POD
ISBN (Print-On-Demand):	978-1-6654-5547-3
ISBN (Online):	978-1-6654-5546-6

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

A Modular Scan Design Verification Approach for Multi-Channel Mode	1
<i>Anurag Chandan, Deepali Koppad, Vinayaka R Karanji</i>	
An Enhanced Clock Tree Synthesis Methodology for Optimizing Power in Physical Design.....	6
<i>S. Anirudh, T. K. Ramesh</i>	
Noise Optimization and Linearization of RF Mixer Using Inductive Peaking and Source Degeneration for Radio Local Area Network and Low Power Wireless Access Systems Applications.....	15
<i>Avvaru Subramanyam, R. V. S. Satyanarayana</i>	
Performance Analysis of Dielectric Engineered Negative Capacitance Tunnel FETs.....	21
<i>K R Harikumar, P Midhun Das, U S Shikha, Rekha K James, Anju Pradeep</i>	
Area Efficient VLSI Design for Image Processing Using the Modified CORDIC Algorithm	25
<i>Roshan Anil, Puppala Pavan Venkata Adi Sampath, P Sathish Kumar</i>	
CPW Fed Metamaterial Loaded Octagonal U-Shape Slotted Antenna for WBAN Applications.....	32
<i>Rithika, T R Arun, K Sajith, Jobin Jose, P Salija</i>	
Gain Enhancement of Cage Shaped Antenna Using Frequency Selective Surface for Mm-Wave Applications.....	36
<i>T R Arun, K Sajith, Jobin Jose, P Salija</i>	
A Micro-Size CB-CPW Fed Implantable Antenna for High Frequency ISM Band Applications	41
<i>T J Sweety, T R Arun, K Sajith, Jobin Jose, P Salija</i>	
Effects of Temperature Induced Phase Transition in Bulk CdS Structures.....	45
<i>Gatla Sumanth Reddy, Adiraju Lakshmi Sowmya, Akshara Pudhota, Shamik Chakraborty, Abhilash Ravikumar</i>	
Residue Adder Design for the Modulo Set $\{2^n - 1, 2^n, 2^{n+1} - 1\}$ and Its Application in DCT Architecture for HEVC.....	52
<i>P. Kopperundevi, M. Surya Prakash</i>	
Comparative Study of Junctionless and Inverted Mode FinFET for Detection of Breast Cancer Cell HS578t at Microwave Frequency	57
<i>Himani Dua Sehgal, Yogesh Pratap, Sneha Kabra</i>	
An Inaccurate Median Filter Architecture for Salt and Pepper Noise Removal.....	62
<i>Midde Venkata Siva, E P Jayakumar</i>	
A New Constant Coefficient Multiplier for Deep Neural Network Accelerators	67
<i>B R Manoj, Jayashree S Yaji, S Raghuram</i>	
Mathematical Modeling of Annealed Trilayer Oxide-Based Memristor Device	72
<i>K. Paramasivam, N. Nithya, A. Napoleon</i>	
Programmable Pulse Shaping Amplifier for High Speed and High Resolution X-Ray Spectroscopy	77
<i>Prasanta Sarkar, M Bharath Reddy, V Shashikala</i>	

Investigation on Power Supply Scaling Effects on the Performance of PET/NET TSPC-DATA-Flip Flops at Wide Range of Operating Temperatures	81
<i>Nagavelly Tarun Teja, Kondapaka Karthikeya, J. Ajayan</i>	
A Proposal for Programmable Pattern Generator and Its FPGA Implementation	86
<i>Geethu Remadevi Somanathan, Ramesh Bhakthavatchalu</i>	
Design and Implementation of MAC by Using Efficient Posit Multiplier	90
<i>T Keerthi, Yashu Swami</i>	
Influence of Coolant Inlet Temperatures on the Performance of Microchannel Heat Sink for Thermal Management of Heterogeneous Integrated Systems	94
<i>A. Ramakrishna, M. Muralidhara Rao, Av Sita Rama Raju</i>	
Effective Hubbard Parametrization for Optimizing Electronic Bandgap of Monolayer CrI ₃	100
<i>Kandarpa Dinesh Krishna, Rahul Nair, T. U. Shilpa Sree, Shamik Chakraborty, Abhilash Ravikumar</i>	

Author Index