

# WSEAS Transactions on Circuits and Systems

Print ISSN: 1109-2734

E-ISSN: 2224-266X

Contents: 2014

**Acceptance Rate (for the years 2013 and 2014): 27.03%**

Acceptance Rate =  $C/D$  where: C = the number of accepted papers, D= the number of submitted papers. Withdrawn Papers are not considered for the numbers C and D.

## Editorial Board:

### Editor-in-Chief

Prof. Valeri Mladenov, Technical University Sofia, Bulgaria

URL, Email: [valerim@tu-sofia.bg](mailto:valerim@tu-sofia.bg)

### Associate Editors:

Prof. Bimal Kumar Bose (Life Fellow IEEE), The University of Tennessee, Knoxville, USA

URL, Email: [bose@eecs.utk.edu](mailto:bose@eecs.utk.edu)

Prof. D. Subbaram Naidu (Fellow IEEE), University of Minnesota Duluth, USA

URL, Email: [dsnaidu@d.umn.edu](mailto:dsnaidu@d.umn.edu)

Prof. Tadeusz Kaczorek (Fellow IEEE), Warsaw University of Technology, Poland

URL, Email: [kaczorek@ee.pw.edu.pl](mailto:kaczorek@ee.pw.edu.pl)

Prof. Panagiotis Agathoklis, University of Victoria, British Columbia, Canada

URL, Email: [panagath@ece.uvic.ca](mailto:panagath@ece.uvic.ca)

Prof. Imre J. Rudas, Óbuda University, Budapest, Hungary

URL, Email: [rudas@uni-obuda.hu](mailto:rudas@uni-obuda.hu)

Prof. Brett Nener, The University of Western Australia, Australia

URL, Email: [brett.nener@uwa.edu.au](mailto:brett.nener@uwa.edu.au)

Prof. Klimis Ntalianis, TEI Athens, Greece

URL, Email: [kntal@image.ece.ntua.gr](mailto:kntal@image.ece.ntua.gr)

Lecturer, Dr. Lambros Ekonomou, City University of London, UK

[URL](#), Email: [Lambros.Ekonomou.1@city.ac.uk](mailto:Lambros.Ekonomou.1@city.ac.uk)

Prof. Branimir Reljin, University of Belgrade, Serbia

[URL](#), Email: [reljinb@etf.bg.ac.yu](mailto:reljinb@etf.bg.ac.yu)

Prof. Ronald Tetzlaff, Technical University Dresden, Germany

[URL](#), Email: [Ronald.Tetzlaff@tu-dresden.de](mailto:Ronald.Tetzlaff@tu-dresden.de)

Prof. Peter Szolgay, Pazmany Peter Catholic University, Hungary

[URL](#), Email: [szolgay.peter@sztaki.mta.hu](mailto:szolgay.peter@sztaki.mta.hu)

Prof. Xiang Bai, Huazhong University of Science and Technology, China

[URL](#), Email: [xbai@hust.edu.cn](mailto:xbai@hust.edu.cn)

Prof. Alexander Gegov, University of Portsmouth, UK

[URL](#), Email: [alexander.gegov@port.ac.uk](mailto:alexander.gegov@port.ac.uk)

### **Topics:**

Fundamental Theory, Network Theory and Applications, Nanostructures and nanotechnologies, Molecular Electronics, Molecular Computing, DNA Computing, Circuits and Networks inspired from Biology, Microelectronics, Microcircuits, Analog, Digital, Mixed-Mode Circuits, Electronics: Components, Devices, Systems, Silicon Devices: Technology, Modeling, Reliability, Optoelectronic Devices, Laser and Optical Systems, Thin Film Technologies, Very Large Scale Integration Systems (VLSI), Hardware/Software Codesign Very Large Scale Integration Systems (VLSI), Digital Filters, High Level Synthesis, Amplifiers, Nonlinear Circuits, Sensors, Physical Design, Time-Frequency and Wavelet Applications, Modelling and Simulation, CAD Tools, Circuits and Electronics for Data Conversion and S-D Modulation, Capacitor/Current Technoques, Prototype Devices and Measurement, Circuits and Systems for Control and Robotics, Electron Devices for Power Technology, High Voltages and Electric Machines, Device Physics, Physical Design, High-Level Synthesis and Testing, Non-Linear Circuits, Formal Verification, Semiconductors, Superconductivity Circuits, Computer-Aided Design, Instrumentation, Instrument-Computer Interface, Military Electronics, Electronics for Space exploration, Consumer Electronics, Circuits in Power Technology, Electron Devices for Video Technology, Circuits for Antennas Technology, Electron Devices and Systems for Radar and Sonar Systems, Circuit Models, Electrical and Electronic Measurement, Circuits for Industrial Applications, Circuit models for Electromagnetic Fields, Electronics for Signal Processing and other Applications, Neural Networks, Numerical Analysis and Circuits, Logic Synthesis, Automatic Control, Robotics, Dynamical Systems, Stochastic Systems, Simulation, Neural Networks, Fuzzy Systems, Evolutionary Computation, Fuzzy Logic and Circuits Design, Circuit Implementation for Fuzzy Systems, Multidimensional Circuits and Systems, Circuit Modelling and Scientific Computing with Applications in Science and Engineering.

## Articles:

<a href="#"><u>Role of the Threshold Voltage and Transconductance Parameters of NMOS Transistors in NMOS Inverter Performance for Static and Switching Conditions of Operation</u></a>	10
Authors: Milaim Zabeli, Nebi Caka, Myzafere Limani, Qamil Kabashi	
<a href="#"><u>Simulator Based Device Sizing Technique for Operational Amplifiers</u></a>	28
Authors: Rishi Todani, Ashis Kumar Mal	
<a href="#"><u>Induction Motor Drive's Parameters Identification Using Extended Kalman Filter Algorithms</u></a>	36
Authors: Moulay Rachid Douiri, Mohamed Cherkaoui	
<a href="#"><u>Comparative Design and Modeling Study of Single Sided Linear Planner Switched Reluctance Motor</u></a>	46
Authors: Zaafrane Wajdi, Khediri Jalel, Rehaoulia Habib	
<a href="#"><u>An Interleaved Boost Converter with Coupled Inductor for PV Energy Conversion</u></a>	61
Authors: Sheng-Yu Tseng, Chien-Chih Chen, Ching-Ting Huang	
<a href="#"><u>Circuit Design of PCI Express Retry Mechanisms</u></a>	67
Authors: Bing Li, Yan Ding, Yong Liu	
<a href="#"><u>Sampling Clock Imperfection Analysis for Synthetic Aperture Interferometric Radiometer</u></a>	74
Authors: Jin Zhang, Zhiping Li, Cheng Zheng, Xianxun Yao, Baohua Yang, Xiaozhoushang	
<a href="#"><u>The Design of DSP/FPGA based Maneuvering Target Tracking System</u></a>	84
Authors: Pan-Long Wu, Lian-Zheng Zhang, Xin-Yu Zhang	
<a href="#"><u>An Improved Recycling Folded Cascode OTA with Positive Feedback</u></a>	93
Authors: S. Kumaravel, B. Venkataramani	
<a href="#"><u>Design of a Passive Millimeter-Wave Imager Used for Concealed Weapon</u></a>	103

<a href="#">Detection BHU-2D-U</a>	
Authors: Bao-Hua Yang, Zhi-Ping Li, Cheng Zheng, Jin Zhang, Xian-Xun Yao, An-Yong Hu, Jun-Gang Miao	
<a href="#">Generalized Thévenin/Helmholtz and Norton/Mayer Theorems of Electric Circuits with Variable Resistances</a>	116
Authors: Penin Alexandr	
<a href="#">Dynamic Self Controllable Surfing for Differential On-Chip Wave-Pipelined Serial Interconnect</a>	128
Authors: Bhaskar M., Srinivas Gantasala, Venkataramani B.	
<a href="#">A 12-bit CMOS Dual-Ladder Resistor String D/A Converter Integrated with Self-adjusted Reference Circuit</a>	134
Authors: Feng Yang, Chaoqun An, Liang Xie, Xiangliang Jin	
<a href="#">Elliptic Curve Cryptoprocessor with Hierarchical Security</a>	144
Authors: Alaaeldin Amin, Turki F. Al-Somani	
<a href="#">Grounded Resistance/Capacitance-Controlled Sinusoidal Oscillators Using Operational Transresistance Amplifier</a>	152
Authors: Srinivasulu Avireni, Chandra Shaker Pittala	
<a href="#">Study of Structure of Control Vector for the Problem of Analog Circuit Optimization</a>	164
Authors: Alexander Zemliak, Jose Salinas, Fernando Reyes, Sergio Vergara, Tatiana Markina	
<a href="#">Circuits Design of Memory Accessing System based on AXI Interface</a>	174
Authors: Bing Li, Xiaoling Wang, Yong Liu	
<a href="#">Transient Modeling of Z-Source Chopper with and without ESR Used for Control of Capacitor Voltage</a>	187
Authors: Byamakesh Nayak, Saswati Swapna Dash	
<a href="#">Practical Swarm Intelligent Control Brushless DC Motor Drive System Using GSM Technology</a>	201
Authors: Ehab H. E. Bayoumi, Zaid A. Salmeen	
<a href="#">Design and Analysis of UWB Down-Conversion Mixer with Linearization Techniques</a>	207
Authors: D. Selvathi, M. Pown, S. Manjula	
<a href="#">Analysis of Lyapunov Function Features for Some Strategies of the Network Optimization Problem</a>	217
Authors: Alexander Zemliak, Alexandra Bychkovska	
<a href="#">Resonance and Efficiency in Wireless Power Transfer System</a>	223

Authors: Kazuya Yamaguchi, Takuya Hirata, Yuta Yamamoto, Ichijo Hodaka	
<a href="#">A Novel Structure of Embryonics Electronic Cell Array</a>	232
Authors: Sai Zhu, Jinyan Cai, Yafeng Meng, Danyang Li, Junbin Zhang, Tianzhen Meng	
<a href="#">Time-Scale Analysis of Magnetic Field Intensity Produced by High Voltage Powerlines</a>	240
Authors: Luigi Maxmilian Caligiuri, Francesco Lamonaca, Alfonso Nastro, Domenica Giordano	
<a href="#">Feedback Effect for Wireless High-Power Transmission</a>	245
Authors: Yuta Yamamoto, Kazuya Yamaguchi, Takuya Hirata, Ichijo Hodaka	
<a href="#">Fast Flashover Identification Methodology on Brushed DC Machines</a>	252
Authors: Márcio Zamboti Fortes, Carlos Henriques Reis Dos Santos, Ramsés Fellini Oliveira, Bruno Soares Moreira Cesar Borba	
<a href="#">Handling Carbon Fiber Fabric in Agile Manufacturing Cells</a>	261
Authors: Rezia Molfino, Matteo Zoppi, Francesco Cepolina, Jack Yousef, Emanuela Elisa Cepolina	
<a href="#">A Low-Voltage Three-Phase AC Generator Built from Analogue Blocks</a>	265
Authors: Francisco Llopis, Jacobo González, Mario Jakas	
<a href="#">A Software of Generating a Symbolic Circuit Model with Computers for Wireless Power Transmission System</a>	273
Authors: Takuya Hirata, Yuta Yamamoto, Kazuya Yamaguchi, Ichijo Hodaka	
<a href="#">Genetic Algorithm Particle Swarm Optimization Based Hardware Evolution Strategy</a>	283
Authors: Zhang Junbin, Cai Jinyan, Meng Yafeng, Meng Tianzhen	
<a href="#">Magnitude Approximation of IIR Digital Filter Using Greedy Search Method</a>	290
Authors: Ranjit Kaur, Damanpreet Singh	
<a href="#">The Design of Self Starting Regulator Using Step-Up Converter Topology for WSN Application</a>	295
Authors: Haslinah Binti Mohd Nasir, Mai Mariam Binti Aminuddin	
<a href="#">Diagnosis of Resistive-Open Defects Using IDDT in Digital CMOS Circuits</a>	300
Authors: Changgeng Yu, Guixiong Liu, Liping Lai	
<a href="#">A Digitally Assisted Telescopic Amplifier With Improved ICMR and Programmable Unity Gain Frequency</a>	312
Authors: Rishi Todani, Ashis Kumar Mal	
<a href="#">Ant Colony Optimization for Optimal Low-Pass Butterworth Filter Design</a>	318

Authors: Bachir Benhala

[SVPWM Control Based Bridgeless PFC Cuk Converter for PMSM under Dynamic Conditions](#) 335

Authors: R. Sankarganesh, S. Thangavel

[Simulation Analysis for Controllable Reactor of Transformer Type with Multifold Magnetic Materials Integration](#) 342

Authors: Jianning Yin, Mingxing Tian

[A 1.8V 22mW 10 bit 165 MSPS Pipelined ADC for Video Applications](#) 352

Authors: D. S. Shylu, D. Jackuline Moni

[Thermoelectric Power Source for Building Sensors – Analysis and Measurement](#) 359

Authors: Michal Oplustil, Martin Zalesak, Stanislav Sehnalek, Pavel Chrobak

[Transient Analysis of VLSI Tree Interconnects Based on Matrix Pade Type Approximation](#) 367

Authors: M. Kavicharan, N. S. Murthy, N. Bheema Rao

[Compact Computation of Tchebichef Moments for 3D Object Representation](#) 380

Authors: Mostafa El Mallahi, Abderrahim Mesbah, Hakim El Fadili, Khalid Zenkouar, Hassan Qjidaa

[Adaptive Recurrent Functional-Link-Based Petri Fuzzy-Neural-Network Controller for a DSP-Based Induction Motor Servo Drive System](#) 404

Authors: Fayez F. M. El-Sousy, Khaled A. Abuhasel

[A Double Closed-Loop Control Method for Quasi-Resonant Converter](#) 411

Authors: Chun-Sen Tang, Hao Shen, Xiao Lv

[Online Data Stream Mining in Distributed Sensor Network](#) 421

Authors: Iveta Zolotová, Tomáš Lojka

[A Development of Class E Converter Circuit for Loosely Coupled Inductive Power Transfer System](#) 428

Authors: Norezmi Jamal, Shakir Saat, Y. Yusmarnita

[Low Space Complexity, High performance Unified and Scalable Word-Based Radix 4 Architecture for Montgomery Modular Multiplication in GF\(P\) and GF\(2k\)](#) 439

Authors: Atef Ibrahim

[Characteristics of GaAs Concentrator Cells for High-Intensity Laser](#) 444

Authors: Tiqiang Shan, Xinglin Qi

[Proposal of an ASIC CMOS for Sliding Mode Control of Switched Reluctance](#) 453

[Aerogenerators](#)

Authors: Bruno C. Dias, Evandro Bolzan, Jose A. Torrico Altuna, Alfeu J. Sguarezi Filho, Carlos E. Capovilla

[Modelling and Design of a Small Scale Solar Tracking System; Application to a Green House Model](#)

463

Authors: Ph. Dondon, L. Miron

[Fractal Neural Vector - Machines, Tomography and Inheritance of Behaviour](#)

475

Authors: Thomas Kromer

[Modelling of Ice-Melting Circuit under Influence of EMF Induced by the Currents of Overhead Lines](#)

484

Authors: Nikolay V. Korovkin, Valeriy O. Goncharov, Nikolay V. Silin