Contents

1 On the Experimental Control of a Separately Excited DC Motor ................................................................. 1
   Rubén Salas-Cabrera, Jonathan C. Mayo-Maldonado, Erika Y. Rendón-Fraga, E. Nacú Salas-Cabrera, and Aaron González-Rodríguez

2 MASH Digital Delta–Sigma Modulator with Multi-Moduli ............. 13
   Tao Xu and Marissa Condon

3 Sensorless PM-Drive Aspects .......................................................... 25
   Christian Grabner, Johannes Gragger, Hansjoerg Kapeller, Anton Haumer, and Christian Kral

4 Design of Silicon Resonant Micro Accelerometer Based on Electrostatic Rigidity ........................................ 37
   Zhang Feng-Tian, He Xiao-Ping, Shi Zhi-Gui, and Zhou Wu

5 Longer MEMS Switch Lifetime Using Novel Dual-Pulse Voltage Driver ................................................................. 47
   Lai Chean Hung and Wallace S.H. Wong

6 Optimal Control of Full Envelope Helicopter ................................. 59
   Semuel Franko

7 Determination of Consistent Induction Motor Parameters .................... 71
   Christian Kral, Anton Haumer, and Christian Grabner

8 Broken Rotor Bars in Squirrel Cage Induction Machines – Modeling and Simulation ................................. 81
   Christian Kral, Anton Haumer, and Christian Grabner
9 Different Designs of Large Chipper Drives ............................. 93
Hansjörg Kapeller, Anton Haumer, Christian Kral, and Christian Grabner

10 Macro Cell Placement: Based on a Force Directed Flow .............. 105
Meththa Samaranayake and Helen Ji

11 Surface Roughness Scattering in MOS Structures .................... 117
Raheel Shah and Merlyne DeSouza

12 A Novel Transform Domain Based Hybrid Recurrent Neural Equaliser for Digital Communication Channel .................. 129
Susmita Das

13 Embedding Interconnection Networks in Crossed Cubes ............ 141
Emad Abuelrub

14 Software Fault Tolerance: An Aspect Oriented Approach .......... 153
Kashif Hameed, Rob Williams, and Jim Smith

15 An Adaptive Multibiometric System for Uncertain Audio Condition .......................................................... 165
Dzati Athiar Ramli, Salina Abdul Samad, and Aini Hussain

16 Analysis of Performance Impact due to Hardware Virtualization Using a Purely Hardware-Assisted VMM ............... 179
Saidalavi Kalady, Dileep PG, Krishanu Sikdar, Sreejith BS, Vinaya Surya, and Ezudheen P

17 Metrics-Driven Software Quality Prediction Without Prior Fault Data ................................................................. 189
Cagatay Catal, Ugur Sevim, and Banu Diri

18 Models of Computation for Heterogeneous Embedded Systems ................................................................. 201
Adnan Shaout, Ali H. El-Mousa, and Khalid Mattar

19 A Quotient-Graph for the Analysis of Reflective Petri Nets ........ 215
Lorenzo Capra

20 Using Xilinx System Generator for Real Time Hardware Co-simulation of Video Processing System ......................... 227
Taoufik Saidani, Mohamed Atri, Dhaha Dia, and Rached Tourki
21 Perception-Based Road Traffic Congestion Classification Using Neural Networks and Decision Tree ........................................... 237 Pitipoom Posawang, Satidchoke Phosaard, Weerapong Polnigongit, and Wasan Pattara-Atikom

22 RDFa Ontology-Based Architecture for String-Based Web Attacks: Testing and Evaluation ............................................. 249 Shadi Aljawarneh and Faisal Alkhateeb

23 Classification of Road Traffic Congestion Levels from Vehicle’s Moving Patterns: A Comparison Between Artificial Neural Network and Decision Tree Algorithm .................... 261 Thammasak Thianniwet, Satidchoke Phosaard, and Wasan Pattara-Atikom

24 Fuzzy Parameters and Cutting Forces Optimization via Genetic Algorithm Approach ........................................... 273 Stefania Gallova

25 Encoding Data to Use with a Sparse Distributed Memory .......... 285 Mateus Mendes, Manuel M. Crisóstomo, and A. Paulo Coimbra

26 A Proposal for Integrating Formal Logic and Artificial Neural Systems: A Practical Exploration ................................. 297 Gareth Howells and Konstantinos Sirlantzis

27 A Clustering Application in Portfolio Management ................. 309 Jin Zhang and Dietmar Maringer

28 Building an Expert System for HIV and Aids Information ........ 323 Audrey Masizana-Katongo, Tebo Leburu-Dingalo, and Dimane Mpoeleng

29 A Multi-Objective Approach to Generate an Optimal Management Plan in an IMS-QSE ............................................. 335 Ahmed Badreddine, Taieb Ben Romdhane, and Nahla Ben Amor

30 Topological Spatial Relations for Circular Spatially Extended Points: An Overview ............................................. 349 Maribel Yasmina Santos and Adriano Moreira
31  Spatial Neighbors for Topological Spatial Relations: The Case of a Circular Spatially Extended Point ........................................361
    Maribel Yasmina Santos and Adriano Moreira

32  Multi-Agent Exploration Inside Structural Collapses ....................373
    Panteha Saeedi and Soren Aksel Sorensen

33  Diagnostic Problem Solving by Means of Neuro-Fuzzy Learning, Genetic Algorithm and Chaos Theory Principles Applying..........................................................385
    Stefania Gallova

34  The New Measure of Robust Principal Component Analysis ..............................................................397
    Dyah E. Herwindiati and Sani M. Isa

35  The Affects of Demographics Differentiations on Authorship Identification ......................................................409
    Haytham Mohtasseeb and Amr Ahmed

36  Anonymous ID Assignment and Opt-Out ................................419
    Samuel S. Shepard, Renren Dong, Ray Kresman, and Larry Dunning

37  Clustering Biological Data Using Enhanced k-Means Algorithm .................................................................433
    K.A. Abdul Nazeer and M.P. Sebastian

38  The Ornstein–Uhlenbeck Processes Driven by Lévy Process and Application to Finance ......................................443
    Ömer Önalalı

39  Discrete Orthogonality of Zernike Functions and Its Application to Corneal Measurements .................................................455
    A. Soumelidis, Z. Fazekas, M. Pap, and F. Schipp

40  A New Scheme for Land Cover Classification in Aerial Images: Combining Extended Dependency Tree-HMM and Unsupervised Segmentation ........................................471
    Mohamed El Yazid Boudaren and Abdel Belaïd

41  Applying View Models in SOA: A Case Study .............................483
    Anca D. Ionita and Monica Florea
42 Optimal Sample Number for Autonomous and Central Wireless Sensor Actuator Network ...........................................495
  Amir M. Jafari and Walter Lang

43 WI-FI Point-to-Point Links: Performance Aspects of IEEE 802.11a, b, g Laboratory Links ....................................507
  J.A.R. Pacheco de Carvalho, H. Veiga, P.A.J. Gomes,
  C.F. Ribeiro Pacheco, N. Marques, and A.D. Reis

44 A Subnet Handover Scheme Based Communication System of Subway ...............................................................515
  Bing Chen and Xuefeng Yan

45 PROMESPAR: A High Performance Computing Implementation of the Regional Atmospheric Model
  PROMES ........................................................................527
  Juan E. Garrido, Enrique Arias, Diego Cazorla, Fernando Cuartero, Iván Fernández, and Clemente Gallardo

46 Transparent Integration of a Low-Latency Linux Driver for Dolphin SCI and DX .........................................................539
  Rainer Finocchiaro, Lukas Razik, Stefan Lankes,
  and Thomas Bemmerl

47 Effect of Dyslipidemia on a Simple Morphological Feature Extracted from Photoplethysmography Flow Mediated Dilation........................................................................551
  M. Zaheditochai, E. Zahedi, and M.A. Mohd Ali

48 Study of the General Solution for the Two-Dimensional Electrical Impedance Equation .................................................563
  Marco Pedro Ramirez Tachiquin, Andrei Gutierrez Solares,
  Victor Daniel Sanchez Nava, and Octavio Rodriguez Torres

49 Biological Application of Widefield Surface Plasmon Resonance Microscope to Study Cell/Surface Interactions and the Effect of TGF-β3, HCL and BSA/HCL on Cell Detachment Assay of Bone Cells Monolayer .......................................575
  Farshid Sefat, Mansour Youseffi, and Morgan Denyer

50 Application of a Novel Widefield Surface Plasmon Resonance Microscope in Cell Imaging and Wound Closure Properties of TGF-β3, BSA/HCl and HCl in Cultured Human Bone Cell Monolayer .................................................585
  Farshid Sefat, Mansour Youseffi, and Morgan Denyer
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Speech Rehabilitation Methods for Laryngectomised Patients</td>
<td>Hamid Reza Sharifzadeh, Ian Vince McLoughlin, and Farzaneh Ahmadi</td>
</tr>
<tr>
<td>52</td>
<td>Study of the Tip Surface Morphology of Glass Micropipettes and Its Effects on Giga-Seal Formation</td>
<td>Majid Malboubi, Yuchun Gu, and Kyle Jiang</td>
</tr>
<tr>
<td>53</td>
<td>Effect of Canned Cycles on Drilled Hole Quality</td>
<td>Mohammad Nazrul Islam, Noor Hakim Rafai, and Charoon Phaopahon</td>
</tr>
<tr>
<td>54</td>
<td>Micro Machine Parts Fabricated from Aqueous Based Stainless Steel Slurry</td>
<td>Mohamed Imbaby, Isaac Chang, and Kyle Jiang</td>
</tr>
<tr>
<td>55</td>
<td>Voxel-Based Component Description for Functional Graded Parts</td>
<td>Juergen Gausemeier, Jan Broekelmann, and Dominic Dettmer</td>
</tr>
<tr>
<td>56</td>
<td>A Multi-Parametric Analysis of Drift Flux Models to Pipeline Applications</td>
<td>Joseph Ifeanyichukwu Achebo</td>
</tr>
<tr>
<td>57</td>
<td>Influence of Preventive Maintenance Frequency on Manufacturing Systems Performances</td>
<td>Antonio C. Caputo and Paolo Salini</td>
</tr>
<tr>
<td>58</td>
<td>On the Numerical Prediction of Stability in Thin Wall Machining</td>
<td>Oluwamayokun B. Adetoro, Ranjan Vepa, Wei-Ming Sim, and P.H. Wen</td>
</tr>
<tr>
<td>59</td>
<td>Risk Analysis of ERP Projects in the Manufacturing SMES: Case Study</td>
<td>Päivi Iskanius</td>
</tr>
<tr>
<td>60</td>
<td>Sleeping in Sitting Posture Analysis of Economy Class Aircraft Passenger</td>
<td>CheeFai Tan, Wei Chen, Floris Kimman, and Matthias Rauterberg</td>
</tr>
<tr>
<td>61</td>
<td>A Scheduling Method for Cranes in a Container Yard with Inter-Crane Interference</td>
<td>Mak Kai Ling and Sun Di</td>
</tr>
</tbody>
</table>