

2010 IEEE Electronics, Robotics and Automotive Mechanics Conference

(CERMA 2010)

**Cuernavaca, Mexico
28 September – 1 October 2010**



IEEE Catalog Number: CFP1046A-PRT
ISBN: 978-1-4244-8149-1

2010 Electronics, Robotics and Automotive Mechanics Conference

CERMA 2010

Table of Contents

General Chair's Message.....	xvi
Organizing Committee.....	xvii
Reviewers.....	xix

Artificial Intelligence and Computer Science

A Communication Scheme for an Experimental Grid in the Resolution of VRPTW Using an Evolutionary Algorithm	3
<i>Abelardo Rodríguez-León, Marco Antonio Cruz-Chávez, Rafael Rivera-López, Erika-Yesenia Ávila-Melgar, Fredy Juárez-Pérez, and Martín-Heriberto Cruz-Rosales</i>	
Trajectory Tracking of Complex Dynamical Network for Delayed Recurrent Neural Network via Control V-Stability	9
<i>José P. Pérez, Jorge A. González, Rogelio Soto, and Joel Pérez</i>	
OntoDeviceTrust: A Representation Model of Trust between the Users of Mobile Devices and the Producers of Applications Based on Ontologies	14
<i>Liliana Ibeth Barbosa Santillan, Juan Jaime Sanchez Escobar, and Claudia Rosa Maria Muñoz Cano</i>	
Computer System for the Evaluation of Laparoscopic Skills	19
<i>E. D. Lorias, M. A. Minor, S. J. L. Ortiz, P. V. H. Olivares, and J. A. Gnechi</i>	
Outlier Detection with Innovative Explanation Facility over a Very Large Financial Database	23
<i>Manuel Mejía-Lavalle</i>	
An Experimental Comparison of Multiobjective Algorithms: NSGA-II and OMOPSO	28
<i>Adriana Cortés Godínez, Luis Ernesto Mancilla Espinosa, and Efrén Mezura Montes</i>	
Understanding Bank Failure: A Close Examination of Rules Created by Genetic Programming	34
<i>Alma Lilia García-Almanza, Biliiana Alexandrova-Kabadjova, and Serafin Martínez-Jaramillo</i>	

Integration of Heterogeneous Data Models: A Mashup for Electronic Commerce	40
<i>F. Mata, A. Pimentel, and Sergio Zepeda</i>	
An ADV-UWE Based Phases Process for Rich Internet Applications Development	45
<i>Luis Alfredo Martínez-Nieves, Víctor Manuel Hernández-Carrillo, and Giner Alor-Hernández</i>	
Analysis of Prediction of Pressure Data in Oil Wells Using Artificial Neural Networks	51
<i>M. Romero-Salcedo, J. Ramírez-Sabag, H. López, D.A. Hernández, and R. Ramírez</i>	
HMM and NN for Gesture Recognition	56
<i>Carlos Delgado-Mata and Blanca Miriam Lee Cosío</i>	
An Exact Euclidean Distance Transform for Universal Path Planning	62
<i>Juan C. Elizondo-Leal and Gabriel Ramírez-Torres</i>	
Comparing Simulation Alternatives for High-Level Abstraction Modeling of NIC's Buffer Requirements in a Network Node	68
<i>G. R. Garay, M. León, R. Aguilar, and V. Alarcón</i>	
3D Object Reconstruction Using Structured Light and Neural Networks	74
<i>Juan Espinal, Manuel Ornelas, Hector J. Puga, Juan M. Carpio, and J. Apolinar Muñoz</i>	
One Criterion for the Selection of the Cardinality of Learning Set Used by the Associative Pattern Classifier	80
<i>Jorge A. Soria-Alcaraz, Raúl Santiago-Montero, and Carpio Martín</i>	
Improved Method to Design Rational Decimation System for Software Defined Radio: Part I - Algorithm	85
<i>Naina Rao Nagrale</i>	
Advise Weaving in Énfasis	90
<i>Ulises Juárez-Martínez and Giner Alor-Hernández</i>	
A New Approach of Design for the Academic Timetabling Problem through Genetic Algorithms	96
<i>Jorge A. Soria-Alcaraz, Martin Carpio, and Hector Puga</i>	
Several Strategies to Improve the Performance of Hyperheuristics for Academic Timetabling Design Problem	102
<i>Jorge A. Soria-Alcaraz, Martin Carpio, Hugo Terashima-Marin, and León Guanajuato</i>	
Neighborhood Hybrid Structure for Discrete Optimization Problems	108
<i>Marco Antonio Cruz-Chávez, Alina Martínez-Oropeza, and Sergio A. Serna Barquera</i>	
A Good Technology Proposal for the Education	114
<i>Ma. del Carmen Espino-Gudiño and Vicente Rodríguez-Hernández</i>	

Defining a Software Process Improvement-Based Methodology for Embedded Systems Development	120
<i>I. Garcia, C. Pacheco, and A. Herrera</i>	
Performance Optimization of GA Based Planar Mechanism Synthesis	126
<i>E. Lugo-González, L. H. Hernández-Gómez, R. Ponce-Reynoso, A. T. Velázquez-Sánchez, G. Urriolagoitia-Sosa, E. A. Merchán-Cruz, and J. Ramírez-Gordillo</i>	
Relaxation of Job Shop Scheduling Problem Using a Bipartite Graph	132
<i>Marco Antonio Cruz-Chávez, Alina Martínez-Oropeza, and Rafael Rivera López</i>	
Clustering Drivers' Travel Patterns for the Flock Navigation Traffic Coordination Model	137
<i>Gustavo López and Ramón Brena</i>	
Positional Synthesis of RRRR Linkage Using Evolutionary Computation	144
<i>César Guerra, Luis Torres-Treviño, and Angel Rodríguez</i>	
General Methodology for Converting a Sequential Evolutionary Algorithm into Parallel Algorithm with MPI to Water Design Networks	149
<i>Marco Antonio Cruz-Chávez, E.Y. Avila-Melgar, Sergio A. Serna Barquera, and Fredy Juárez-Pérez</i>	
Use of Supercomputing towards the Generation of a Process Execution Plan in Distributed Real-Time Systems	155
<i>Gutiérrez Díaz de León Luis Alberto, Franco Reboreda Carlos Alberto, and Gutiérrez Díaz de León Carlos Adrián</i>	
Virtual Reality Robotics System for Education and Training	162
<i>Carlos Vázquez Hurtado, Alejandro Rojo Valerio, and Luis Ruvalcaba Sánchez</i>	
A Hyperheuristic Approach for Constraint Solving	168
<i>Broderick Crawford, Carlos Castro, and Eric Monfroy</i>	
The p-Stable Semantics Applied to ICT Systems	174
<i>Claudia Zepeda, Angel Marín, Sergio Arzola, Mario Rossainz, and Mauricio Osorio Galindo</i>	
Genetic Programming for Task Selection in Dialogue Systems	180
<i>Omar Alfredo González Padilla, Félix Francisco Ramos Corchado, and Jean-Paul Bartès</i>	
Artificial Neural Networks for Electrochemical Impedance Spectroscopy Sour Corrosion Predictions of Nano-modified Microalloyed Steels	185
<i>D. Colorado-Garrido, S. Serna, M. Cruz-Chávez, J.A. Hernández, and B. Campillo</i>	
A Comparison of Neural Networks to Detect Failures in Micro-electro-mechanical Systems	191
<i>Julian M. Angel F., Juan C. Gamboa Higuera, Alba G. Ávila Bernal, and Carlos E. Villarraga Pinzon</i>	
METAOSE: Meta-analysis for Agent Oriented Software Engineering	197
<i>Luis Razo, Félix Ramos, and Michel Occello</i>	

A Neural-Network Based Model of the Magnetic Nonlinearity of a DC Electromagnet	205
<i>J. M. Díaz-Chacón, R. B. B. Ovando-Martínez, C. Hernández, and M. A. Arjona</i>	
Communications and Computer Networks	
A Bluetooth Development Platform for Wireless Sensors	213
<i>Raymundo Barrales-Guadarrama, Melitón Ezequiel Rodríguez-Rodríguez, Víctor Rogelio Barrales-Guadarrama, and Antonio Mocholí-Salcedo</i>	
Performance Characterization Parameters on Voice and Data Transmission in Mobile Terminals to Cellular Networks	220
<i>Montserrat Jiménez-Licea, Sergio Vidal-Beltrán, and José Luis López-Bonilla</i>	
A P2P Architecture to Perform Actions of Virtual Humans in Distributed Virtual Environments	225
<i>Alma Martínez, Héctor Orozco, Félix Ramos, and Mario Siller</i>	
An Asymmetric Mechanism to Synchronize Continuous Media in Mobile Distributed Systems	231
<i>Saul E. Pomares Hernandez, Eduardo Lopez Dominguez, and Luis A. Morales Rosales</i>	
IToHealth: A Multimodal Location-Based System for Discovering Medical Entities	237
<i>José Luis Sánchez-Cervantes, Giner Alor-Hernández, and Ulises Juárez-Martínez</i>	
MPISTE: A Mobile, Personalised, Interactive Story Telling Environment	243
<i>Carlos Delgado-Mata, Ramiro Velazquez, Robert J. Pooley, Ruth Aylett, and Judy Robertson</i>	
A Routing Scheme for Content Localization in Peer-to-Peer Networks	249
<i>Francisco de Asís López-Fuentes</i>	
Dual Band Pentagonal Microstrip Antenna for Wi-Fi Applications	255
<i>M. Tecpoyotl-Torres and J. G. Vera-Dimas</i>	
LiSANDRA: A Low-Cost Experimental Wireless Sensor Network	259
<i>Leocundo Aguilar, Guillermo Licea, and J. Antonio García-Macías</i>	
A Java Compatible Virtual Machine as an Embedded Middleware for Wireless Sensor Networks	265
<i>Carlos Cota, Leocundo Aguilar, and Guillermo Licea</i>	
Model of QoS on NGN: An Analysis of Performance	271
<i>Josheff David C., Paul Sanmartin M., and José Márquez D.</i>	
Analysis of MIMO Technics and Adaptive Antennas and Its Performance in 3G-LTE Systems	277
<i>Eduardo Rodriguez Araque and Hector David Sanchez Paz</i>	
Cross-Layer Design for Videoconferencing Applications in WiMAX 802.16e Networks	283
<i>Eduardo Patrón, Raul Rivera, Arturo Serrano, and Oscar Olivares</i>	
IPTV Technology and Its Distribution in Home Networks	287
<i>Alejandro A. Ramírez-Acosta and Mireya S. García-Vázquez</i>	

Computer Vision and Robotics

New Approach to Modeling and Simulation Methodology for the Mechatronic Design of IEDD-Unmanned Wheeled Mobile Manipulator	295
<i>Luis Adrian Zuñiga Aviles, Jesús C. Pedraza, E. Gorrostieta, and J. M. Ramos</i>	
Environment for Teaching and Development of Mobile Robot Systems	302
<i>Silas Alves, João Maurício Rosário, Humberto Ferasoli Filho, and René Pegoraro</i>	
HABE: Huffman Algorithm and Bit Extraction Applied to Image Equalization	308
<i>Leticia Flores-Pulido, Ma. C. Landy Olivares-González, Mauricio Osorio, and Oleg Starostenko</i>	
Robust Image Watermarking Using Feature Points and Image Normalization	313
<i>Wei Na, Kazuhiko Yamaguchi, Manuel Cedillo-Hernández, Mariko Nakano Miyatake, and Héctor Pérez-Meana</i>	
Image Encryption Based on Logistic Chaotic Map for Secure Communications	319
<i>M. T. Rodríguez-Sahagún, J. B. Mercado-Sánchez, D. López-Mancilla, R. Jaimes-Reátegui, and J. H. García-López</i>	
Design and Optimization of Real-Time Texture Analysis Using Sum and Difference Histograms Implemented on an FPGA	325
<i>M.-A. Ibarra-Manzano, D.-L. Almanza-Ojeda, and J.-M. López-Hernández</i>	
Dynamic Analysis of an Industrial Robot Manipulator Using Dual Numbers	331
<i>R. Tapia Herrera, C. Palacion Montúfar, S. Alcántara Montes, and J. A. Flores Campos</i>	
Automatic Camera Calibration with Structure and Motion Recovery from Two Views of a Polyhedral Structure	337
<i>Flavio Viguera, Mario Santes, and Jean-Bernard Hayet</i>	
Metamyelocyte Nucleus Classification Using a Set of Morphologic Templates	343
<i>Jorge Martínez-Carballido, Carolina Rosas-Huerta, and Juan M. Ramírez-Cortés</i>	
Design of a Hexapod Robot Based on Insects	347
<i>Omar Eduardo López Botello, Mónica Lizeth Balboa García, Patricia del Carmen Zambrano Robledo, and Angel Rolando Rivas Velázquez</i>	
Level Estimation in a Water Model of Continuous Casting	355
<i>Francisco Sánchez, Raúl Miranda-Tello, Cesar Real-Ramírez, Luis Hoyos, Miguel Ramírez, and Jesús González-Trejo</i>	
On Signal P-300 Detection for BCI Applications Based on Wavelet Analysis and ICA Preprocessing	360
<i>Gerardo Rosas-Cholula, Juan Manuel Ramírez-Cortes, Vicente Alarcón-Aquino, Jorge Martinez-Carballido, and Pilar Gomez-Gil</i>	
Modeling Motion Prediction Techniques: Linear and Quadratic Splines vs Circular-Queue Vector Approach	366
<i>Jose Tomas Tello-Martínez, Oleg Starostenko, Vicente Alarcon-Aquino, and Wilmar Hernandez</i>	

A Complete Closed-Form Solution to the Inverse Kinematics Problem for the P2Arm Manipulator Robot	372
<i>José Gabriel Ramírez-Torres, Gregorio Toscano-Pulido, Apolinar Ramírez-Saldívar, and Arturo Hernández-Ramírez</i>	
Dynamic Visual Servoing of Robot Manipulators Based on Passivity	378
<i>A. Luis Rodríguez and Yu Tang</i>	
Radial Basis Function for Visual Image Retrieval	383
<i>Leticia Flores-Pulido, Gustavo Rodríguez-Gómez, Oleg Starostenko, and Carlos Santacruz-Olmos</i>	
Synchronizing a Modular Robot Colony for Cooperative Tasks Based on Intra-Inter Robot Communications	388
<i>José Baca, Manuel Ferre, Matias Collar, Jose Fernandez, and Rafael Aracil</i>	
Multipurpose Image Watermarking Scheme Based on Self-Embedding and Data Hiding into Halftone Image	394
<i>Carlos Santiago Avila and Mariko Nakano Miyatake</i>	
Single and Multi Diffusion-Tensor Based Kernels for Anisotropic Filtering of Brain DW-MR Images	399
<i>Alonso Ramírez-Manzanares, Jonathan Rafael-Patiño, and Manzar Ashtari</i>	
Wavelet-Based Foveated Compression Algorithm for Real-Time Video Processing	405
<i>J.C. Galan-Hernandez, V. Alarcon-Aquino, O. Starostenko, and J.M. Ramirez-Cortes</i>	
Joint Control Strategy for Haptic Guidance	411
<i>Alejandro Jarillo-Silva and Omar A. Domínguez-Ramírez</i>	
Digital Image Processing for Classification of Coffee Cherries	417
<i>Zulma Sandoval, Flavio Prieto, and Julián Betancur</i>	
Morphological Connected Openings to Image Segmentation	422
<i>Jorge D. Mendiola-Santibañez, Lidia G. Ortega-Bucio, Iván Terol-Villalobos, and Israel Santillan</i>	
Mechanical Design of an Anthropomorphic Hand for Shapeless Object Grasping	428
<i>Víctor Javier González Villela, Víctor Gustavo Arnez Paniagua, and Ernesto Hernández Avilés</i>	
A New Methodology of Image Steganalysis Including for JPEG Steganography	434
<i>Alondra Gabriela Hernandez Chamorro and Mariko Nakano Miyatake</i>	
Real Time Object Recognition Methodology	439
<i>M. Peña Cabrera, I. López Juárez, R. Ríos Cabrera, R. Osorio, and H. Gómez</i>	
Self-Alignment Approach Based on Cooperative Behaviors for the Docking Process of Modular Mobile Robots	445
<i>Yadira Quiñonez, José Baca, Javier de Lope, Manuel Ferre, and Rafael Aracil</i>	

Development of a Navigation System for Mobile Robots Using Different Patterns of Behavior Based on Fuzzy Logic	451
<i>U.G. Villaseñor-Carrillo, A. Sotomayor-Olmedo, E. Gorrostieta-Hurtado, J.C. Pedraza-Ortega, M.A. Aceves-Fernández, and M. Delgado-Rosas</i>	
An Efficient Morphological Associative Memories Hardware Implementation for Pattern Recognition Applications	457
<i>Enrique Guzmán Ramírez, Selene Alvarado, Miguel A. Ramírez, and Luis A. Rosario</i>	
A Profile-Based Method for Hardware/Software Co-design Applied in Evolutionary Robotics Using Reconfigurable Computing	463
<i>Mauricio A. Dias, Daniel O. Sales, and Fernando S. Osorio</i>	
Fingerprint Recognition Using Open Algorithms in Frequency and Spatial Domain	469
<i>Fernando Cornelio Jiménez González, Osslan Osiris Vergara Villegas, Vianey Guadalupe Cruz Sánchez, and Humberto de Jesús Ochoa Domínguez</i>	
On the Analysis of a Multi-task Modular Robot System for Field Robotics	475
<i>José Baca, Manuel Ferre, Alexandre Campos, Jose Fernandez, and Rafael Aracil</i>	
Depth Control of a 1 DOF Underwater System Using a Model-Free High Order Sliding Mode Control	481
<i>T. Salgado-Jiménez, L. G. García-Valdovinos, and G. Delgado-Ramírez</i>	
Definition and Evaluation of Robotic Soccer Motions	488
<i>Diego Fernando Castro R., Juan Sebastián Galarza M., and Fernando De la Rosa</i>	
Kinematic and Dynamic Modeling of the PHANToM Premium 1.0 Haptic Device: Experimental Validation	494
<i>Carlos Cruz-Valverde, Omar A. Domínguez-Ramírez, Edgar R. Ponce-de-León-Sánchez, Itzel Trejo-Mota, and Gabriel Sepúlveda-Cervantes</i>	
Conceptualization of Human Soccer Concepts to Robotic Soccer Architecture	502
<i>Julián M. Angel, Germán E. Bravo C., and Fernando De la Rosa R.</i>	
Discrete-Time Modeling and Control of an Under-actuated Robotic System	508
<i>Jorge Rivera, Luis García, Susana Ortega, and Juan Raygoza</i>	
Image Watermarking Algorithms with Synchronization Mechanism Using Self-Synchronization Decoding and Feature Points	515
<i>Keita Takahara, Kazuhiko Yamaguchi, Mariko Nakano-Miyatake, and Héctor Pérez-Meana</i>	
 Power Electronics and Control Systems	
Wavelet-Based Improvement for Channel Estimation in a Power-Line Communication Environment Impaired by Impulsive Noise	523
<i>Gerardo A. Laguna-Sánchez, Ricardo Barrón-Fernández, and Alfonso Prieto-Guerrero</i>	

A Novel Method to Detect Objectively the Risk of Falling in Elderly Based on Control Theory Criteria	529
<i>E. Cardiel, M.C. Cruz, and P.R. Hernández</i>	
Demand Management in Semiconductor Manufacturing: A Dynamic Pricing Approach Based on Fast Model Predictive Control	534
<i>Yasser A. Davizón, Jorge de J. Lozoya, and Rogelio Soto</i>	
Control of the Magnetizing Characteristics of a Toroidal Core Using Virtual Gap	540
<i>S. Magdaleno and C. Pérez Rojas</i>	
Chaos Control on a Boundary Layer Model	546
<i>Luis Carlos González Sua and Rogelio Soto Rodríguez</i>	
Autonomous Surface Vehicle for Measuring Water Body Parameters	552
<i>Joaquín Gutiérrez, Francisco Villa-Medina, and Miguel Ángel Porta-Gándara</i>	
Evaluation of Power Extraction to Linear Gain Scheduling Controllers in a Small Wind Energy Conversion System	557
<i>Santiago Sánchez Acevedo, Eduardo Giraldo, and Edilson Delgado Trejos</i>	
Linear Dynamic Model of an On/Off Actuated Pneumatic Cylinder: An Optimization Approach	563
<i>J.A. Rosas-Flores, J.A. Cruz-Maya, and J. A. Flores-Campos</i>	
Definition of a Home Automation System for Energy Management and Efficiency	568
<i>Sergio Romero Hernández and Paulina Clares García</i>	
Fault Detection in Electrical Grid on Power Electronic Controllers Environment Based on Wavelet Transform	574
<i>Enrique Reyes-Archundia and Edgar L. Moreno-Goytia</i>	
Study of a Family of Buck-Boost Converter with Tapped Inductor for Grid-Connected Photovoltaic Systems	581
<i>Juan C. Yris, Jorge H. Calleja, Abraham C. Sánchez, and Leobardo H. González</i>	
An Electrical Cathode Model of a High Pressure Sodium Lamp	586
<i>José Luis Tapia, Joel O. Pacheco Sotelo, Eduardo Díaz Rodríguez, Yulia Nikolaevna Ledeneva, and René Arnulfo García Hernández</i>	
E-nose Screening of Pesticide Residue on Chilli and Double-Checked Analysis through Different Data-Recognition Algorithms	592
<i>Su Lim Tan, Heng Shi Teo, and Jesús García-Guzmán</i>	
Pre-competitive Development of a Portable EEG Auditory Evoked Potential Measurement System, Auxiliary in the Diagnostic of Hypoacusia	597
<i>José Antonio Gutiérrez Gnecchi, Ruth Doñán Ramírez, Víctor Hugo Olivares Peregrino, and Daniel Lorias Espinoza</i>	
Design and Construction of a Continuous Ambulatory Electrocardiogram Recorder, Auxiliary in the Detection of Cardiac Arrhythmias	602
<i>José Antonio Gutiérrez Gnecchi, Fabián Ortega Vargas, Víctor Hugo Olivares Peregrino, and Daniel Lorias Espinoza</i>	

Passivity Based Control of Doubly-Fed Induction Generators in Wind Turbines	607
<i>I. López-García, V. M. Jiménez-Mondragón, E. Campero-Littlewood, and G. R. Espinosa-Pérez</i>	
DSP-Based Digital Torque/Motion Control of DC Motors for Direct-Drive Industrial Robotic Applications	613
<i>Roberto Morales-Caporal, Edmundo Bonilla-Huerta, Marco A, and Morales-Caporal</i>	
Predictive Current Control of a SVM-PWM Power Converter Used in Wind Turbine Applications	619
<i>Roberto Morales-Caporal, Marco A. Morales-Caporal, and Rafael Ordoñez-Flores</i>	
Kinesthetic Guidance Based on PID Control for Haptic Interaction	624
<i>David Vega-Hernández, Luis G. García-Valdovinos, Omar A. Domínguez-Ramírez, and Arturo Curiel-Anaya</i>	
Robust Passive Computed Torque Control Applied to Haptic Human-Machine Interaction Systems	631
<i>Edgar R. Ponce-de-León-Sánchez, Itzel Trejo-Mota, and Omar A. Domínguez-Ramírez</i>	
Thermoelectric Coolers as Alternative Transducers for Solar Energy Harvesting	637
<i>Carlos Ugalde, Juan Anzures, and Isidro I. Lázaro</i>	
A New Nonlinear PI/PID Controller for Quadrotor Posture Regulation	642
<i>Salvador González-Vázquez and Javier Moreno-Valenzuela</i>	
Dynamic Link Library and Signal Conditioning System for Electrical Impedance Tomography Virtual Instrumentation	648
<i>José Antonio Gutiérrez Gnechi</i>	
Instrumentation of a Water-Leaks Detection System Controlled via the Short Message Service through the GSM Network	654
<i>Gama-Moreno L., Reyes J., Sánchez M., Ochoa-Franco C., and Noguerón C.</i>	
Modal Control of a Flexible Cantilevered Beam	660
<i>Ramón Rodríguez, Jaime Gallardo, and Horacio Orozco</i>	
An Agent-Based Decentralisation Approach for the Electricity Power Market	666
<i>Jaime Cerda Jacobo and David De Roue</i>	
Speech Recognition Systems and Its Automatic Synthesis in Hardware	672
<i>J. Buitrago, J. Aedo, and F. Rivera</i>	
Voltage Controlled Current Source (VCCS) for Electrical Impedance Tomography (EIT) Measurements in the alpha and beta Dispersion Frequency Ranges	677
<i>José Antonio Gutiérrez Gnechi</i>	
Local Kinesthetic Guidance Based on Variable-Structure Control Techniques	682
<i>Carlos Cruz-Valverde, Omar A. Domínguez-Ramírez, Edgar R. Ponce-de-León-Sánchez, Itzel Trejo-Mota, and Gabriel Sepúlveda-Cervantes</i>	

Analysis of Two Current Injection Strategies of a Grid Connected Single-Phase PV-SVPWM Inverter	690
<i>M. A. Arjona, F. A. Ramírez, and C. Hernández</i>	
A 2D Finite Element Thermal Model of a Three-Phase-Inverter Heat Sink	696
<i>R. B. B. Ovando, F. A. Ramírez, C. Hernandez, and M. A. Arjona</i>	
Electronic Design and Semiconductors	
Impact of Base Points Distributions on the Polynomial Surrogate Modeling of a Substrate Integrated Waveguide with Microstrip Transitions	705
<i>José E. Rayas-Sánchez and Diego E. Cordero-Baltazar</i>	
Phosphorous and Boron Incorporation and Its Effect on Electronic and Optical Properties of Ge:H Films Deposited by LF Plasma	711
<i>N. Delgadillo, A. Kosarev, A. J. Torres, and Y. Kudriavtsev</i>	
Modeling and Simulation of Infrared Sensors Using Cantilever and Bridge Structures	717
<i>A. Martínez-Torteya, G. Dieck-Assad, and S.O. Martínez-Chapa</i>	
FPGA Implementation of a 16-Channel Lock-In Laser Light Scattering System	721
<i>Arturo Moreno-Báez, Gerardo Miramontes-de León, Claudia Sifuentes-Gallardo, Ernesto García-Domínguez, Daniel Alaniz-Lumbreras, and Jorge A. Huerta-Ruelas</i>	
Communication Scheme Design for Parallel Architecture Implemented in a FPGA for Solution of Linear Equation Systems	726
<i>R. Martínez-Alonso, K. Mino, and D. Torres-Lucio</i>	
Array Processors Designed with VHDL for Solution of Linear Equation Systems Implemented in a FPGA	731
<i>R. Martínez-Alonso, K. Mino, and D. Torres-Lucio</i>	
Design of a CMOS-MEMS Diffraction Grating for Near-Infrared Spectroscopy of Biomolecules	737
<i>A. Losoya-Leal, S. Camacho-León, and S.O. Martínez-Chapa</i>	
Spin-On Glass as Low-Temperature Gate Insulator for Thin-Film Transistors	741
<i>M. Domínguez Jiménez, P. Rosales-Quintero, A. Torres-Jácome, J. Molina-Reyes, M. Moreno-Moreno, F. J. De la Hidalga-Wade, C. Zúñiga-Islas, and W. Calleja-Arriaga</i>	
Design Space Exploration of Z-Axis CMOS-MEMS Accelerometers	745
<i>A. Méndez, S. Camacho-León, and S.O. Martínez-Chapa</i>	
Performance Estimation of a First-Order Sigma-Delta Modulator in a CMOS Image Sensor Using Behavioral Modeling	749
<i>Sergio Garduza-González</i>	
Analysis of Equivalent Antennas in RT Duroid 5880 and 5870 for GPS Operation Frequency	754
<i>J. G. Vera-Dimas, M. Tecpoyotl-Torres, V. Grimalsky, S. V. Koshevaya, and M. Torres-Cisneros</i>	

CMOS Vision Chip for Laser Spot Position Detection	759
<i>Jair Garcia-Lamont and Miguel Aleman-Arce</i>	
Defect Detection in Aluminium with an Eddy Currents Sensor	765
<i>E. Ramírez-Pacheco, J.H. Espina-Hernández, F. Caleyó, and J.M. Hallen</i>	
A Novel 900 MHz I x V CMOS Multiplier	771
<i>Juan Mateus and Alejandro Días-Sánchez</i>	
Pulse Width Amplitude Modulation Based CMOS Multiplier	775
<i>Ricardo Astro, Héctor Gómez, Jhoan Salinas, and Alejandro Diaz-Sanchez</i>	
Reconfiguration of Power Distribution Systems Using Genetic Algorithms and Spanning Trees	779
<i>J. Torres-Jiménez, J. L. Guardado, F. Rivas, S. Maximov, and E. Melgoza</i>	
Real Scenario Parameter Extraction by Using PSO Rendering in the Loop	785
<i>Olguin Carbajal M., Barrón Fernández R., and Oropeza Rodríguez J. L.</i>	
Author Index	791