

# **IEEE EUROCON 2015 – International Conference on Computer as a Tool (EUROCON 2015)**

**Salamanca, Spain  
8-11 September 2015**



**IEEE Catalog Number: CFP15EUR-POD  
ISBN: 978-1-4799-8570-8**

## Session 01

### **Computational intelligence: general**

Worst Performance of Hedge in Short Games <i>Miltiades Anagnostou and Maria Lambrou.</i>	1
A Mulit-agent Method for Periodicity Detection in Distributed Events <i>Artur Opalinski.</i>	7
A Novel UML Profile for Representation of a Relational Database Schema <i>Igor Tomic, Drazen Brdjanin and Slavko Maric.</i>	13
Improving Single Classifiers Prediction Accuracy for Underground Water Pump Station In a Gold Mine Using Ensemble Techniques <i>Ali Hasan and Bhekisepho Twala.</i>	19
A Tool for Automatic Formal Modeling of Railway Interlocking Systems <i>Muhammed Ali Nur Oz, Ibrahim Sener, Ozgur Turay Kaymakci, Ilker Ustoglu and Galip Cansever.</i>	26
An Example of Monitoring System with Reasoning Module for Ambient Assisted Living Applications <i>Nikola Zaric, Milutin Radonjic, Milica Pejanovic Djurisic and Igor Radusinovic.</i>	30
Towards a Flexible Production System. Environment Server implementation <i>Mildred J. Puerto, Damien Sallé, José Luis Outón, Hector Herrero and Zigor Lizuain.</i>	36

## Session 02

### Radio

Analysis of Priority Queueing with Multichannel in Cognitive Radio Network <i>Narvada Khedun and Vandana Bassoo.</i>	42
Energy Detection of Random Arrival and Departure of Primary User Signals In Cognitive Radio Systems <i>Ashraf Eltholth, Magdi Elsoudani, Ibrahim Atef and Ahmed S. Ibrahim.</i>	48
Radio Communication Systems Simulation: from the pioneers to the present <i>Jose A. Delgado-Penín.</i>	54
Analysis of Additive Noise Characteristics in Indoor Wireless Sensor Networks <i>Tibor Csóka and Jaroslav Polec.</i>	60
GraphicOS: Graphical GO Simulations for Radioelectric Coverage Calculation in 3D Scenarios <i>David Martinez, Fernando Las-Heras and Jesus Carro.</i>	66
Interference Problems Expected When Solid-State Marine Radars Will Come Into Widespread Use <i>Gaspare Galati, Gabriele Pavan and Francesco De Palo.</i>	70
Technical Configuration of TV White Space Devices <i>Igor Gepko.</i>	76

## Session 03

### **Image and video processing**

Elastic Hand Contour Matching in NIR Images with a Novel Shape Descriptor Parametrization 82

*Alejandro Inoges, Gonzalo Lopez-Nicolas, Carlos Sagues and Sergio Llorente.*

Texture Aware Image Error Concealment 88

*Ivana Uhlíková, Wanda Benešová, Jaroslav Polec and Tibor Csóka.*

Influence of Contour Smoothness and Electric Size on the Profile Reconstruction of Metallic Objects using Hybrid Optimization 94

*Maria Garcia-Fernandez, Cebrian Garcia, Yuri Alvarez and Fernando Las-Heras.*

A No-Reference Video Quality Metric Using a Natural Video Statistical Model 100

*Christian Galea and Reuben A. Farrugia.*

Enhanced Video Streaming Using Dynamic Quality Control With Bandwidth Prediction 106

*Pawan Fowdur and Logessen Narrainen.*

Creating a GPGPU-accelerated framework for pattern matching using a case study 112

*Tamás Fekete and Gergely Mezei.*

Correlation Model For Randomly Deployed Heterogeneous Cameras In Wireless Multimedia Sensor Networks 118

*Fahed Awad, Moad Mowafi and Walid Aljoby.*

Efficient Algorithm for Blinking LED Detection Dedicated to Embedded Systems Equipped with High Performance Cameras 123

*Michał Tarkowski, Przemysław Woznica and Łukasz Kulaś.*

## Session 04

### Coding

Enhanced Audio Transmission Over ADSL Using Prioritised DMT Modulation and Retransmissions <i>Pawan Fowdur, Prateema Ragpot and K.M. Sunjiv Soyjaudah.</i>	127
Performance of IEEE 802.11n LDPC Codes with Modified Reliability Based Hybrid ARQ and Unequal Error Protection <i>Pawan Fowdur and Bibi Nooreen Furzun.</i>	133
ICI Reduction in OFDM Decode-and-Forward Mobile Relay Systems <i>Elvis Salkovic, Enis Kocan and Milica Pejanovic-Djurisic.</i>	139
New schemes for increasing code rate of the OFDM based virtual OSTBC <i>Ugljesa Urosevic and Zoran Veljovic.</i>	144
Max-Log-MAP Decoding with Reduced Memory Complexity <i>Dejan Spasov, Marjan Gusev and Sasko Ristov.</i>	150
Modulation Design Analysis for Two-Way Relay Channels <i>Hadi Sawaya and Elias Rachid.</i>	155
Recommendation System for HBB TV: Model Design and Implementation <i>Alexandra Posoldova and Alan Wee-Chung Liew.</i>	159
Femtocell Power Scheme Based on the Maximum Frame Utilization Technique <i>Ally Asgaar Buglow and Vandana Bassoo.</i>	166

## Session 05

### Networks

Performance Comparison of QoS Routing Algorithms Applicable to Large-Scale SDN Networks 172

*Slavica Tomovic, Neeli Prasad and Igor Radusinovic.*

Analysis of Diffraction Loss in NLOS Small Cell Backhaul Links Deployed in Urban Canyons 178

*Bessie Malila, Olabisi Falowo and Neco Ventura.*

A Location-based Routing Algorithm for Wireless Sensor Networks 184

*Etienne Sammut and Carl James Debono.*

Energy efficient RoF based Centralized Enterprise WLAN (CE-WLAN) 189

*Diptanil Debbarma.*

Statistical Based Optimization of Number of Pilot Signals in LTE/LTE-A for Higher Capacity 195

*Ádám Knapp and László Pap.*

Performance Analysis of a 2 tier caching proxy system for mobile RESTful services 200

*Iyad Ollite and Nawaz Mohamudally.*

m-QoE Driven Context, Content and Network Aware Medical Video Streaming based on Fuzzy Logic System over 4G and Beyond Smallcells 207

*Ikram Ur Rehman and Nada Philip.*

Analysis of the Energy Efficiency of a Virtual MIMO System with a Large Antenna Array 213

*Miryam Gonzalez-Perez and John Thompson.*

## Session 06

### **Security and reliability**

TCP/IP Header Classification for Detecting Spoofed DDoS Attack in Cloud Environment 219

*Opeyemi Osanaiye and Mqhele Dlodlo.*

Study of Attack Using Honeypots and Honeynets: Lessons from Time-oriented Visualization 225

*Pavol Sokol, Lenka Kleinová and Martin Husák.*

General Requirements and Security Architecture for Mobile Phone Anti-Cloning Measures 231

*Igor Gepko.*

Reliability Analysis of Multi-State Systems based on Tools of Multiple-Valued Logic 237

*Miroslav Kvassay, Elena Zaitseva, Jozef Kostolny and Vitaly Levashenko.*

## Session 07

### **Database systems and webservices**

Relational and Graph Queries Over a Transition System <i>Siham Rim Boudaoud, Khaoula Es-Salhi, Vincent Ribaud and Ciprian Teodorov.</i>	243
Scalable System for e-Orders as a Service in Cloud <i>Sasko Ristov, Filip Dimitrievski, Marjan Gusev and Goce Armenski.</i>	249
QUINTA: A Question Tagging Assistant to Improve the Answering Ratio in Electronic Forums <i>Francisco Charte Ojeda, Antonio Jesús Rivera Rivas, María Jose Del Jesus Díaz and Francisco Herrera Triguero.</i>	255
SPORANGIUM – Validating the Concept of Sporadic Social Networks in Pervasive Applications <i>Esteban Fernando Ordoñez Morales, José Víctor Saiáns Vázquez, Yolanda Blanco-Fernández, Martín López-Nores, Jack Fernando Bravo-Torres and Jose Pazos-Arias.</i>	261
A Methodology to Evaluate the Trustworthiness of Cloud Service Providers' Availability <i>Sasko Ristov and Marjan Gusev.</i>	267

## Session 01

### Circuits and systems

Sub-Circuit Model of Fully-Depleted Double-Gate Finfet Including the Effects of Oxide and Interface Trapped Charge <i>Tatjana Pesic-Brdjanin and Nebojsa Jankovic.</i>	273
Design of a Power Amplifier for IEEE802.11p Applications <i>João Nuno O. R. Silva and João Nuno Matos.</i>	277
Effect of Structure Scaling on the Offset Levels for CMOS Hall Effect Sensors <i>Maria-Alexandra Paun.</i>	281
Variance Assesment at Transmission Lines with Randomly Varying Parameters via SDE Theory <i>Lubomir Brancik and Edita Kolarova.</i>	287
Highly Accurate CMOS Second Generation Current Conveyor and Transconductor <i>Antonio Lopez-Martin, Jaime Ramirez-Angulo and Ramon Gonzalez Carvajal.</i>	292
A Sensitivity Study on an Inductive Contactless Power Transfer System <i>Ioana-Gabriela Sirbu.</i>	296
Application of MIMO DF Equalization to High-Speed Off-Chip Communication <i>Lennert Jacobs, Mamoun Guenach and Marc Moeneclaey.</i>	302
Low-Power Front-End and Local Oscillator for Millimeter-Wave Receivers <i>Ahmed Ahmed, Mohamed Aboudina, Ahmed Mohieldin and Islam Eshrah.</i>	306
Circuit Models of Multi-Ports Based on S-Parameters with Arbitrary Reference Impedances <i>Marek Nałęcz.</i>	312
A Functional Coverage Approach for Direct Testing: An Industrial IP as a Case Study <i>Sameh El-Ashry and Khaled Salah.</i>	318

## Session 02

### Systems and applications

Reconfigurable 1st Order Filters Based on Differential Voltage Input and Single Current Output Transconductance Multiplier 324

*Roman Sotner, Jan Jerabek, Roman Prokop, Vilem Kledrowetz, Lukas Fujcik and Tomas Dostal.*

FPGA-based Time and Cost Effective Hamming Weight Comparators for Binary Vectors 328

*Valery Sklyarov, Ioulia Skliarova, Alexander Sudnitson and Margus Kruus.*

Moving Object Detection by a Mounted Moving Camera 334

*Ozge Mercanoglu Sincan, Vahid Babaei Ajabshir, Hacer Yalim Keles and Suleyman Tosun.*

Intrinsic Evolution of Digital Circuits Based on a Reconfigurable Hyper-Structure 340

*Spyros Kazarlis, John Kalomiros, Vassilis Kalaitzis, Anastasios Balouktsis and Dimitris Bogas.*

Hardware Implementation of the Totally Self-Checking SHA-256 Hash Core 346

*Harris Michail, Athanasios Kakarountas, Apostolis Kotsiolis, George Athanasiou and Costas Goutis.*

Importance of Amplitude Stability and Spectral Purity of Produced Signals in a Quadrature

Oscillator 351

*Jan Jerabek, Roman Sotner, Norbert Herencsar and Aslihan Kartci.*

MLP-based approximation to the Neyman Pearson Detector in a Terrestrial Passive Bistatic Radar Scenario 356

*Nerea Del-Rey-Maestre, David Mata-Moya, Pilar Jarabo-Amores, Jaime Martin-De-Nicolas and Pedro-Jose Gomez-Del-Hoyo.*

Session 03  
**Signal processing**

A New Self-Organizing Map Topology for Real-Time Spectrum Sensing and Fast Convergence 362

*Liudas Stašionis and Artūras Serackis.*

Non-negative Matrix Factorization Using Posrank-based Approximation Decompositions 366

*Ana Maria de Almeida.*

Robustness of a Generalized Gamma CFAR Ship Detector Applied to TerraSAR-X and Sentinel-1 Images 370

*Jaime Martín De Nicolás, María-Pilar Jarabo-Amores, Nerea Del Rey Maestre, Pedro Gómez-Del-Hoyo and José Luis Bárcena-Humanes.*

System for Vehicle Classification: Hardware Prototype and Off-line Signal Processing 376

*José J. Lamas-Seco, Adriana Dapena, José P. González-Coma, Paula M. Castro and Francisco J. Vazquez-Araujo.*

Design Considerations and Experimental Results on Composite Right-/Left-Handed Based Distributed Oscillator 381

*Stefan Simion and Giancarlo Bartolucci.*

Passive Radars as Low Environmental Impact Solutions for Smart Cities Traffic Monitoring 387

*Pedro-Jose Gomez-Del-Hoyo, Jose-Luis Barcena-Humanes, David Mata-Moya, Diego Juara-Casero and Veronica Jimenez-De-Lucas.*

Low Phase-Noise Oscillator Design Using Large Signal Transfer Function and Complex Quality Factor 393

*Gokhun Selcuk and Sinan Kurt.*

## Session 01

### **Electric vehicle, active demand control and distributed storage**

Experimental Characterization and Development of a SoC/SoH Estimator for a LiFePO<sub>4</sub> Battery Cell 397

*Danijel Pavkovic, Ante Komljenovic, Mario Hrgetic and Matija Krznar.*

Design of EKF-based SoC Estimator for an Ultracapacitor Module 403

*Danijel Pavkovic, Ante Komljenovic, Mario Hrgetic, Joško Petric and Viktor Smetko.*

Optimization of the Consumption of Industrial Customers Using Battery Energy Storage Systems 409

*Josu Arrinda, Jon Andoni Barrena, Alexander López, Jonatan Leralta and Miguel Angel Rodríguez.*

Minimum Driving Distance Warranty for EV Charging Over Public Lighting Systems 415

*Mario Alvarado-Ruiz, Fadi Abi-Abdallah and Maurice Gagnaire.*

Charge Scheduling Strategies for Managing an Electric Vehicle Fleet Parking 421

*Jesus Fraile-Ardanuy and Roberto Alvaro-Hermana.*

ANN Backpropagation Power Consumption Forecasting 426

*Constantin Barbulescu, Antheia Deacu, Stefan Kilyeni, Raluca Schiopu and Alin Vernica.*

Assessing Lead-Acid Battery Design Parameters for Energy Storage Applications on Insular Grids: A Case Study of Crete and São Miguel Islands 432

*E.M.G. Rodrigues, R. Godina, G.J. Osório, J.M. Lujano-Rojas, J.C.O. Matias, J.P.S. Catalão*

Enhancing Home Appliances Energy Optimization with Solar Power Integration 438

*David Oliveira, Eduardo M. G. Rodrigues, Radu Godina, Tiago D. P. Mendes, João P. S. Catalão, Edris Pouresmaeil*

## Session 02

### Electrical machines

Innovative Design on Technology of Urban Darrieus VAWT: Field Tests <i>Nelson Batista, Helder Sintra, Rui Melício, Victor Mendes and Hugo Pousinho.</i>	444
Software Tool for Three Phase Voltage Dips Waveform Generation Used in Research Applications <i>Florin Molnar-Matei, Monica Iovan, Adrian Pana and Alexandru Baloi.</i>	450
Data Management in Research Applications used in Voltage Dips Field <i>Florin Molnar-Matei, Monica Iovan, Adrian Pana and Felicia Baloi.</i>	456
Calculation of Complex Models for Accurate Representation of Power Station Equipment: Novel Tool for TRV Application <i>Mirko Palazzo, Alejandro Marmolejo and Pierluigi Fraioli.</i>	462
Ensuring the Security of The Energy System by Predetermining the Size of Inrush Current at Power Transformers Coupling <i>Nitu Maria Cristina, Voicu Viorica, Duta Marian and Petre-Marian Nicolae.</i>	468
Stator Inductance Matrix Diagonalization Algorithms for Different Multi-Phase Winding Schemes of Round-Rotor Electric Machines Part I. Theory <i>Alberto Tessarolo, Lorenzo Branz and Mauro Bortolozzi.</i>	472
Stator Inductance Matrix Diagonalization Algorithms for Different Multi-Phase Winding Schemes of Round-Rotor Electric Machines Part II. Examples and Validations <i>Alberto Tessarolo, Lorenzo Branz and Mauro Bortolozzi.</i>	478

## Session 03

### Power electronics applications

Primary Control Operation Modes in Islanded Hybrid ac/dc Microgrids <i>Eneko Unamuno and Jon Andoni Barrena.</i>	484
Small Signal Assessment of an AC System Integrated with a VSC-HVDC Network <i>Duc Nguyen Huu.</i>	490
Adaptive Coordinated Droop Control for Multi-Battery Storage <i>Duc Nguyen Huu and Hung Truong Nam.</i>	496
An Ultra-Low-Power Boost Converter for Micro-Scale Energy Scavenging <i>Mahmoud R. Elhebeary, Mohamed M. Aboudina and Ahmed Nader Mohieldin</i>	502
Harmonic and Imbalance Voltage Mitigation in Smart Grids: A DSTATCOM Based Solution <i>Pedro Roncero-Sánchez and Enrique Acha.</i>	507
Control and Stability Analysis of Interfaced Converter in Distributed Generation Technology <i>E. Pouresmaeil, M. Mehrasa, M.A. Shokridehaki, E.M.G. Rodrigues, J.P.S. Catalão.</i>	513
Direct Phase Digital Control Method in Power Inverters Based on Dumping Frequency Analysis <i>Ljupco Karadzinov and Goce Stefanov.</i>	519

## Session 04

### **Electric market applications**

Offer Strategy for a Wind Power Producer in Day-ahead Market Equilibrium 525  
*Rui Laia, Hugo Pousinho, Rui Melício and Victor Mendes.*

Analyzing the Effect of Various PEV Owner's Charging Tariffs on PEV PL's Market Equilibrium 530  
*Nilufar Neyestani, Maziar Yazdani Damavandi, and João. P. S. Catalão.*

## Session 05

### Smart grids and power systems modelling

Challenges and Necessity of Systematic Uncertainty Quantification in Smart Grid Co-Simulation 536

*Cornelius Steinbrink and Sebastian Lehnhoff.*

Polyphase Representation of QMF Filter Bank for Power Systems Harmonics Analysis 542  
*Marija Markovska and Dimitar Taskovski.*

Detailed Modeling of Overhead Line for the Electromagnetic Transients Studies 548  
*Selma Grebovic.*

Calculation of the Corona Onset Voltage Gradient under Variable Atmospheric Correction Factors 554

*Adnan Carsimamovic, Adnan Mujezinovic, Salih Carsimamovic, Zijad Bajramovic, Milodrag Kosarac and Koviljka Stankovic.*

Parallel Computing of Sequential Montecarlo Techniques for Reliable Operation of Smart Grids 559

*Davide Poli, Paolo Pelacchi and Marco Giuntoli.*

Modeling of Phenomena in the Grounding System Including Fields Correlation 565  
*Mario Kokorus, Hamid Zildzo, Rasim Gacanovic and Aldijana Ahmovic.*

Numerical Evaluation of the Effects of the Impedances and Admittances Asymmetry at a Double Circuit HVAC Overhead Line 571

*Adrian Pana and Alexandru Baloi.*

Poly-Si PV System Grid Connected and Fuzzy Controlled 578  
*Luis Fialho, Rui Melício and Victor Mendes.*

## Session 06

### Renewable energy applications

Estimation of Weibull Parameters from Wind Measurement Data by Comparison of Statistical Methods 584

*Maja Celeska, Krste Najdenkoski, Vlatko Stoilkov, Aneta Buchkovska, Zhivko Kokolanski and Vladimir Dimchev.*

Grid Power Control Based on a Wind Energy Conversion System and a Flywheel Energy Storage System 590

*Abderraouf Boumassata, Djallel Kerdoun and Mansour Madaci.*

Adam and Barry W. Williams. Analysis, Comparison and Selection of DC-DC Converters for a Novel Modular Energy Conversion Scheme for DC Offshore Wind Farms 596

*Manex Barrenetxea, Igor Baraia, Igor Larrazabal, Ignacio Zubimendi, Grain P.*

Design of a Novel Modular Energy Conversion Scheme for DC Offshore Wind Farms 602

*Manex Barrenetxea, Igor Baraia, Igor Larrazabal and Ignacio Zubimendi.*

A Fuzzy Logic Pitch Angle Control System Implementation for OWC Power Plant Generators 608

*Madaci Mansour, Kerdoun Djallel and Boumessata Abd Raouf.*

A New Grid-Tied Multilevel VSC for PV with Leakage Current Suppression 613

*Sergey Brovanov, Evgeniy Grishanov and Maxim Dybko.*

DG Investment Planning Analysis with Renewable Integration and Considering Emission Costs 618

*Desta Zahlay Fitiwi, Sérgio F. Santos, Abebe W. Bazuayehu, Miadreza Shafie-khah, João P. S. Catalão, Miguel Asensio, Javier Contreras.*

Developing a Method of Moments Based Indoor Propagation Model <i>Ian Kavanagh.</i>	624
The World Migration Network: Rankings, Groups and Gravity Models <i>Quentin Cappart and Adrien Thonet.</i>	630
Corrective Term Usage in the Improvement of Gradient-Based Bayer CFA Demosaicking Algorithms <i>Kinyua Wachira.</i>	636
Real-Time Ray Casting of Volumetric Data <i>Ziga Lesar.</i>	642
Design of 1Mbit RRAM Memory to Replace eFlash <i>Wouter Diels and Alexander Standaert.</i>	648

Energy Systems Models for Efficiency Towards Smart Cities <i>João R. Galvão, Licínio M. Moreira, Rita M. T. Ascenso and Sérgio A. Leitão.</i>	653
Modelling Transitions on Heating Usage in Buildings with Multivariate Statistical Monitoring <i>Llorenç Burgas Nadal, Joan Colomer and Joaquim Meléndez.</i>	659
Integrative Gene Expression Analysis of Lung Cancer Based on a Technology-Merging Approach <i>Juan Manuel Soto Rueda, Francisco Manuel Ortúñoz Guzmán and Ignacio Rojas Ruiz.</i>	664
Efficient Data Preparation Techniques for Diabetes Detection <i>Mohammad H. Nadimi-Shahraki and Mahnaz Ghahramani.</i>	669
Neural Networks for the Visual Analysis of Regional Pollution <i>Angel Arroyo, Emilio Corchado, Verónica Tricio and Alvaro Herrero.</i>	675
SCOPE: A Multi-Agent System Tool for Supply Chain Network Analysis <i>Roberto Dominguez, Salvatore Cannella and Jose M Framinan.</i>	681

Automated Segmentation of Brain Tumors in MRI Using Potential Field Clustering <i>Iker Gondra and Ivan Cabria.</i>	686
Recognition Between Smiling and Neutral Facial Display with Power LBP Operator <i>Karolina Nurzynska and Bogdan Smolka.</i>	692
Automatic Optic Cup Segmentation Algorithm for Retinal Fundus Images based on Random Forest Classifier <i>Irene Fondon, Jose Francisco Valverde, Auxiliadora Sarmiento, Qaisar Abbas, Soledad Jimenez and Pedro Alemany.</i>	698
Skills for Vision-based Applications in Robotics. Application to Aeronautics Assembly Pilot Station <i>Héctor Herrero, Rakel Pacheco, Nerea Alberdi, Mikel Rumayor, Damien Salle and Karmele Lopez De Ipiña Peña.</i>	704
A Real-time Eyebrow Segmentation and Tracking Technique to Support an Electric Wheelchair Interface <i>Pietro de Oliveira, Franklin Flores and Nardênia Martins.</i>	710
Toolbox for Ear Biometric Recognition Evaluation <i>Žiga Emeršič and Peter Peer.</i>	716
A GA-based ICA for Acoustic Signals <i>Rustem Popa and Laurentiu Frangu.</i>	722
Ultrasound B-MODE Image Processing as a MATLAB Software Tool and as an Experimental Solution on ARM Platform <i>Jiří Blahuta, Tomáš Soukup and Petr Čermák.</i>	727

Performance, Power and Scalability Analysis of HEVC Interpolation Filter Using FPGAs 733  
*Juan A. Gomez-Pulido, Paulo J. Cordeiro and Pedro A. Assunção.*

Parallel GPU Architecture for Hyperspectral Unmixing Based on Augmented Lagrangian Method 739  
*Jorge Sevilla Cedillo and Jose M. P. Nascimento.*

Segmentation as Postprocessing for Hyperspectral Image Classification 745  
*Luis Ignacio Jimenez Gil, Victor Andrés Ayma, Pedro Achancaray, Gilson A. O. P. Costa, Raul Q. Feitosa and Antonio Plaza.*

A Fast Parallel Hyperspectral Coded Aperture Algorithm for Compressive Sensing Using OpenCL 749  
*Sergio Bernabé, Gabriel Martín, José M. P. Nascimento, José M. Bioucas-Dias, Antonio Plaza, Guillermo Botella and Manuel Prieto-Matías.*

The NANOPYME Project: Up-Scalability of Ferrite-Based Exchange-Spring Magnets <i>Adrian Quesada and the NANOPYME Consortium.</i>	755
Core-Shell Microstructure of RE-Fe-B Grains To Achieve Maximum Coercivity: Industrial Application <i>Marko Soderžnik, Kristina Žagar and Spomenka Kobe.</i>	757
Nanocrystalline Soft Magnetic Ribbons and Microwires: Towards Future Developments in Energy Related Applications <i>Pilar Marin, Ana M. Aragón, Víctor López And Antonio Hernando.</i>	758
Optimising Materials for Energy-Efficient All-Optical Magnetic Switching <i>Oksana Chubykalo-Fesenko, Pablo Nieves, Unai Atxitia, Tom Ostler and Roy Chantrell.</i>	760
Exploring the Magnetic Properties of Ferrite Nanoparticles for the Development of Rare-Earth-Free Permanent Magnet <i>Alberto López-Ortega, Elisabetta Lottini, Cesar De Julián Fernández and Claudio Sangregorio.</i>	762
Cofe <sub>2</sub> O <sub>4</sub> Isotropic Powders for Permanent Magnet Applications <i>F.J. Pedrosa, J. Rial, K. Golasinski, J. Camarero and A. Bollero.</i>	763
Phase Formation in Mechanically Alloyed Powders for Potential Magnetocaloric Applications <i>Stefano Deledda.</i>	764
Towards Spintronics Materials for Energy Saving: Advances in Nanomagnetism Via X-Ray Techniques <i>Julio Camarero, Rodolfo Miranda, José Luis F. Cuñado and Paolo Perna.</i>	765
Spark Plasma Sintering of Permanent <i>Elinor Castle, Salvatore Grasso, Mike Reece, Richard Sheridan and Allan Walton.</i>	766

Introduction to the IEEE-CASS Workshop on Micro/Nanoelectronic Circuits and Systems 767  
*Teresa Serrano-Gotarredona and José M. de la Rosa.*

Industrial Integrated Circuit Design Techniques 768  
*Antonio J. López-Martín.*

How to Make Your Integrated Sensor Smarter 769  
*Francisco Serra-Graells.*

Printed MicroElectronics: From Technology to Design, Rebuilding the Path 770  
*Eloi Ramon, Jordi Carrabina, Lluís Terés.*

Interfacing Brain and Machines: Challenges and Perspectives 771  
*Ángel Rodríguez-Vázquez.*