

**ICEA 2017 International Conference in Engineering Applications
5th IEEE International Work Conference on Bioinspired Intelligence
Internet of Things for the Global Community Energy and Sustainability
in Small Developing Economies
10-13 July 2017, Funchal, Portugal**

MONDAY, 10th of JULY

10:00 - 11:00 – Plenary session

The challenge of detecting sleep

APNEA events with low complexity

Prof. Antonio Ravelo

Room: A1

11:00 - 11:30 Coffee Break

11:30 - 12:50 Parallel Sessions

BIO – Biometrics

Chair: Jesús B. Alonso-Hernández

Room: A1

COGNITIVELY INSPIRED ARTIFICIAL BIPEDAL HUMANOID GAIT GENERATION. R. Kuteken, R. Batista and J. Rosário.

BIOMETRIC PERSONAL AUTHENTICATION USING IMAGES OF FOREARM VEIN PATTERNS. R.S. Choras.

COVARIATE ANALYSIS OF DESCRIPTOR-BASED EAR RECOGNITION TECHNIQUES. Ž. Emeršič, B. Meden, P. Peer and V. Struc.

NEURAL-NETWORK-BASED FACE IDENTIFICATION. B. Meden, Ž. Emeršič, V. Štruc and P. Peer.

EES – Efficiency and Ecological solutions

Chair: Eduardo Marques

Room: P

HADAS AND WEB SERVICES: ECO-EFFICIENCY ASSISTANT AND REPOSITORY USE CASE EVALUATION. Daniel Jesus Munoz Guerra, Monica Pinto and Lidia Fuentes.

DEVELOPMENT OF GREEN TECHNOLOGIES IN COMPLEX TERRITORIAL MORPHOLOGIES: AN ECOCONSTRUCTIVE APPROACH. Consiglia Mocerino

PANAMA METRO BUS SYSTEM AND METRO LINE 1: AN EXTERNALITIES ANALYSIS OF CO2 EMISSIONS SPECTRE. Aranzazu Berbey Alvarez, Jessica Guevara-Cedeño, Humberto Alvarez and Juan De Dios Sanz Bobi

ENERGY RESOURCE EFFICIENCY POLICIES WORLDWIDE. Eduardo Marques and Lina M.P.L. Britei

12:50 - 14:20 Lunch Break

14:20 - 16:00 Parallel Sessions

BS1 – Biomedical signals I

Chair: Pilar Calvo

Room: A1

ARTICULATION ACOUSTIC KINEMATICS IN ALS SPEECH: A LONGITUDINAL STUDY CASE. P. Gómez-Vilda, A.R. Londral, D. Palacios-Alonso, A. Gómez-Rodellar and V. Rodellar

A METHOD FOR DESIGNING EMG INTEGRATOR USING AN FPGA. Sheikh S. Mostafa, Md.A. Awal, M. Ahmad and F. Morgado-Dias.

A MINIMALLY INVASIVE PORTABLE SYSTEM FOR SLEEP APNEA DETECTION. F. Mendonça, S. Mostafa, F. Morgado-Dias, J. Navarro-Mesa, G. Juliá-Serdá and A. Ravelo-García.

VOICE PATHOLOGY DETECTION USING DEEP LEARNING: A PRELIMINARY STUDY. P. Harar, J.B. Alonso-Hernandez, J. Mekyska, Z. Galaz, R. Burget and Z. Smekal.

ANALYSIS OF DISFLUENCIES FOR AUTOMATIC DETECTION OF MILD COGNITIVE IMPAIRMENT: A DEEP LEARNING APPROACH. K. López de Ipiña, U. Martínez de Lizarduy, P. Calvo, B. Beita, J. García-Melero, M. Ecaay-Torres, A. Estanga and M. Faúndez-Zanuy.

SS:RERA – Special Session: Renewable Energy in the

Rural Area

Chair: Azami Zaharim

Room: P

PERFORMANCE OF DOUBLE PASS PV/T COMBI SOLAR COLLECTOR WITH CPC: THEORETICAL APPROACH. Kamaruzzaman Sopian

REVIEW ON RECENT PERFORMANCE
TITANIUM DIOXIDE ON FLEXIBLE DYE
SENSITIZED SOLAR CELL. Azami Zaharim

THE IMPACT OF WIND TECHNOLOGY
AMONG RURAL COMMUNITY IN MERSING
MALAYSIA. Alias Jedi

PUBLIC ACCEPTANCE ON STAND-ALONE
RENEWABLE ENERGY PROJECT IN RURAL
AREA OF MALAYSIA. Nurulkamal Masseran

THE THEORETICAL FRAMEWORK OF SMART
ENERGY MANAGEMENT SYSTEM FOR
RURAL AREA IN MERSING MALAYSIA. Alias
Jedi

16:00 - 16:30 Coffee Break

16:30 - 17:50 Parallel Sessions

BS2 – Biomedical signals II

Chair: Carlos M. Travieso-González
Room: A1

AUTOMATED CLASSIFICATION OF
EXUDATES FROM DIGITAL FUNDUS
IMAGES. R.S. Rekhi, A. Issac, M.K. Dutta
and C.M. Travieso.

ANALYSIS OF HEART SOUND FOR
AUTOMATED DIAGNOSIS OF CARDIAC
DISORDERS. A. Singh, M.K. Dutta and C.M.
Travieso.

AUTOMATIC IMAGE PROCESSING BASED
DENTAL IMAGE ANALYSIS USING
AUTOMATIC GAUSSIAN FITTING ENERGY
AND LEVEL SETS. P. Pandey, A. Bhan, M.K.
Dutta and C.M. Travieso.

AUTOMATIC EVENT HANDLING DURING
ROBOT ASSISTED EYE SURGERY. M.
Kozlovsky, R. Dóczy, E. Jósваи and G. Kronreif.

IEA – Internet and Engineering Applications

Chair: Karolina Baras
Room: P

LOW COST AUTOMATED ASTRONOMICAL
OBSERVATORY FOR REMOTE OPERATION: A
REQUISITE ANALYSIS. Luis Sousa, Fernando
Morgado-Dias and Pedro Augusto

A LOW COST FPGA BASED THERMAL
IMAGING CAMERA FOR FAULT DETECTION
IN PV PANELS. Daniel Pestana, Fábio Mendonça
and Fernando Morgado-Dias

IOT APPLICATIONS: ON THE PATH OF
COSTA RICA'S COMMITMENT TO BECOMING
CARBON-NEUTRAL. Arys Carrasquilla-Batista,
Alfonso Chacón-Rodríguez, Milton Solórzano-
Quintana, Maritza Guerrero-Barrantes

RECOGNITION RATE DIFFERENCE
BETWEEN REAL-TIME AND OFFLINE
HUMAN ACTIVITY RECOGNITION. Jozsef
Suto, Stefan Oniga, Claudiu Lung and Ioan Orha

18:00 - 19:00 Welcome Cocktail
Town Hall Honors Room

TUESDAY, 11th of JULY

9:30 - 10:30 – Plenary session

*Brain Computer Interfaces and
Immersive Virtual Reality for Post-
Stroke Motor Rehabilitation*
Prof. Sergi Bermudez
Room: A1

10:30 - 10:50 Coffee Break

10:50 - 12:50 Parallel Sessions

MLA – Machine learning and applications

Chair: Jesús B. Alonso-Hernández
Room: A1

AUTOMATIC IDENTIFICATION OF
BOTANICAL SAMPLES OF LEAVES USING
COMPUTER VISION. A. Yadav, M.K.
Dutta, C.M. Travieso and J.B. Alonso.

HYBRID MATHEMATICAL MODELING
DECODES THE COMPLEXITY OF
SPHINGOLIPID PATHWAY TO PREDICT
CHEMOSENSITIVITY. J.A. Molina-Mora, M.
Kop-Montero, J.L. Crespo-Mariño, S. Quirós-
Barrantes and R. Mora-Rodriguez.

APPROACH OF KINEMATIC CONTROL FOR A
NONHOLONOMIC WHEELER ROBOT USING
ARTIFICIAL NEURAL NETWORKS AND
GENETIC ALGORITHMS. Inês Sampaio, C.A.
Cáceres-Flórez, J.M. Rosário and D. Amaya.

IMPACT OF TARGET VARIABLE
DISTRIBUTION TYPE OVER THE

REGRESSION ANALYSIS IN WIND TURBINE DATA. A. Blanco-Martinez, J. Solé-Casals, P. Marti-Puig, J.J. Cárdenas and J. Cusidó.

ENERGY PRODUCTION FORECASTING FOR A WIND FARM COMPOSED OF TURBINES WITH DIFFERENT FEATURES. D. Baptista and F. Morgado-Dias.

DEVELOPMENT OF A MODEL TO PREDICT THE ELECTRICITY PRODUCED BY SMALL SCALE ROOF-TOP PV SYSTEMS IN MADEIRA ISLAND. R. Torabi, S. Rodrigues, N. Cafofo and F. Morgado-Dias.

MP – Market and Policies

Chair: Ioannis Kounelis

Room: P

POWERWALL 2.0 IN AUSTRALIA. DOES IT CHANGE THE MARKET? Sandy Rodrigues, Roham Torabi, Helena Ramos and Fernando Morgado-Dias

THE LIFE-CYCLE ASSESSMENT OF ELECTRICITY PRODUCTION IN PORTO SANTO ISLAND. Roham Torabi, Nicolo Rizzoli, Valeria Arosio and Fernando Morgado-Dias.

PHOTOVOLTAIC SYSTEM FOR SELF-CONSUMPTION – AN ECONOMIC VIABILITY STUDY. Joana Fialho, Pedro Pinto and Ana Lúcia Gomes

FOSTERING CONSUMERS' ENERGY MARKET THROUGH SMART CONTRACTS. Ioannis Kounelis, Gary Steri, Raimondo Giuliani, Dimitrios Geneiatakis, Ricardo Neisse and Igor Nai Fovino

NOVEL SAFETY AND ENERGY MANAGEMENT FUNCTIONS TO SOLAR WATER HEATING SYSTEMS. Victor D. N. Santos, Manuel Cerveira and Fernando D. Moita

ENERGY STORAGE IN NA_{0.5}BI_{0.5}TIO₃ ANTIFERROELECTRIC LIKE PEROVSKITE. Lahmara Abdel

12:50 - 14:20 Lunch Break

14:20 - 16:20 Parallel Sessions

IP – Image Processing

Chair: Dionisio Rodríguez-Esparragón

Room: A1

IMAGE RECONSTRUCTION OF THE HUMAN FOREARM BY ELECTRICAL IMPEDANCE TOMOGRAPHY. M. V Sánchez-Monge, D. Canales and R. Rimolo-Donadio.

ASSESSMENT OF THE SPECTRAL QUALITY OF FUSED IMAGES USING THE CIEDE2000 DISTANCE. D. Rodríguez-Esparragón, J. Marcello, F. Eugenio-González, A.M. García-Pedrero and C. Gonzalo-Martin.

A SUPERPIXEL-BASED APPROACH BASED ON CONSENSUS FOR DELINEATING AGRICULTURAL PLOTS. A.M. Garcia-Pedrero, C. Gonzalo-Martin, M. Lillo-Saavedra and D. Rodríguez-Esparragón.

DELINEATION OF LINE PATTERNS IN IMAGES USING B-COSPIRE FILTERS. N. Strisciuglio and N. Petkov.

MEDIUM AND HIGH-DIMENSIONALITY ATTRIBUTE SELECTION IN BAYES-TYPE CLASSIFIERS. A.J. Tallón-Ballesteros and L. Correia.

AUTOMATED SEGMENTATION OF POWDERY MILDEW DISEASE FROM CHERRY LEAVES USING IMAGE PROCESSING. V. Gupta, N. Sengar, M.K. Dutta, C.M. Travieso and J.B. Alonso

TSRE – Technological solutions for Renewable energy

Chair: Luís Tiago Paiva

Room: P

OPTIMAL CONTROL OF UNDERWATER KITE POWER SYSTEMS. Luís Tiago Paiva and Fernando A C C Fontes

ANALYTICAL STUDY OF TURBINE WITH FLUCTUATING BLADES. Rositsa Velichkova, Iskra Simova, Detelin Markov, Emanuil Agontsev, Milka Uzunova and A.Moumen Darcherif

FINITE STATE AUTOMATON MODEL FOR DESIGNING AUTONOMOUS RECONFIGURATION IN DISTRIBUTION NETWORKS. Alena Kostalova

DESIGN AND POWER PRODUCTION OF SMALL-SCALE WIND TURBINES. Fábio Mendonça and Joaquim Azevedo

NET ZERO ENERGY HOME INCLUDING PHOTOVOLTAIC SOLAR CELLS, WIND TURBINES, BATTERY ENERGY STORAGE SYSTEMS AND HYDROGEN VEHICLES. Reza Hemmati and Vahid Rasouli.

CHARACTERIZATION OF BIOMASS PELLETS FROM CHLORELLA VULGARIS MICROALGAL PRODUCTION USING INDUSTRIAL WASTEWATER. Arys Carrasquilla-Batista, Alfonso Chacón-Rodríguez, Francine Murillo-Vega, Kattia Núñez-Montero, Olman Gómez-Espinoza, Maritza Guerrero-Barrantes

16:20 - 16:50 Coffee Break

16:50 - 18:10 Parallel Sessions

BA – Bioinspired applications

Chair: Antonio G. Ravelo-García
Room: A1

CONTROL ARCHITECTURE TO REPRODUCE THE KNEE AND ANKLE MOVEMENT USING A TRANSFEMORAL PROSTHESIS. J.F. Puerta-Barrera, J.M. Rosário and D. Amaya-Hurtado.

FUNDAMENTALS OF INDOOR VLP: PROVIDING AUTONOMOUS MOBILITY FOR VISUALLY IMPAIRED PEOPLE. R. Perez, J. Rabadán, V. Guerra, L. Aguiar and J. Rufo.

EVALUATION OF DIFFERENT HISTOGRAM DISTANCES FOR TEMPORAL SEGMENTATION IN DIGITAL VIDEOS OF FOOTBALL MATCHES FROM TV BROADCAST. R. Chacon-Quesada and F. Siles-Canales.

SHANNON ENTROPY OF A EUROPEAN SEABASS (DICENTRARCHUS LABRAX) SYSTEM IN RESPONSE TO FEED POLLUTED WITH DIFFERENT CONCENTRATIONS OF MEHG: A MACHINE VISION APPROACH. H.z. Eguiraun, O. Casquero and I. Martinez

ALTERNATIVE LOW COST ALGORITHMS FOR METABOLIC PATHWAY COMPARISON. E. Arias-Méndez and F. Torres-Rojas

ND – Networks and Data

Chair: Kyle Zhang
Room: P

INTERNET OF THINGS AND DATA PROTECTION: THE CHALLENGE FOR A PRIVACY STANDARD - A COMMON LEGAL FRAMEWORK FOR PRIVACY. Nicola Fabiano

PERFORMANCE ANALYSIS OF LORA RADIO FOR AN INDOOR IOT APPLICATIONS. Eyuel Ayele, Kyle Zhang, Nirvana Meratnia, Paul J.M.

Havinga, Chiel Hakkenberg and Jan-Pieter Meijers

OVERVIEW OF CONTEXT-SENSITIVE TECHNOLOGIES FOR WELL-BEING. André Freitas, Karolina Baras, Lina Brito and José Luis Silva

SMART MOBILITY: A SURVEY. Ricardo Faria, Lina Brito, Karolina Baras and José Silva

18:30 Funchal Tour and Conference Dinner

WEDNESDAY, 12th of JULY

10:00 - 11:00 – Plenary session
The Autonomous Standalone Renewable Photovoltaic Thermal and Wind Energy Hybrid Systems
Prof. Kamaruzzaman Sopian
Room: A1

11:00 - 11:30 Coffee Break

11:30 - 12:00 Poster Sessions

Room: A1

12:00 - 12:30 Awards and Closing Ceremony

12:30 - 14:00 Break

14:30 - 18:00 Social Event
