

2018 IEEE Third Ecuador Technical Chapters Meeting (ETCM 2018)

**Cuenca, Ecuador
15-19 October 2018**



**IEEE Catalog Number: CFP18ETB-POD
ISBN: 978-1-5386-6658-6**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18ETB-POD
ISBN (Print-On-Demand):	978-1-5386-6658-6
ISBN (Online):	978-1-5386-6657-9

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

PARAMETER OPTIMIZATION OF AN INTERVAL ROBUST CONTROLLER OF A BUCK CONVERTER SUBJECT TO PARAMETRIC UNCERTAINTIES	1
<i>Kevin Eduardo Lucas Marcillo ; Douglas Antonio Plaza Guingla ; Erick Melo Rocha ; Walter Barra ; David Alejandro Vaca Benavides ; Renan Landau Paiva De Medeiros</i>	
NUMERICAL SYSTEM FOR FORECASTING VOLCANIC ASH DISPERSION IN ECUADOR.....	7
<i>René Parra</i>	
IMAGE PROCESSING AND ARTIFICIAL NEURAL NETWORK FOR COUNTING PEOPLE INSIDE PUBLIC TRANSPORT	12
<i>Patricia Chato ; Darío José Mendoza Chipantasi ; Nancy Velasco ; Sylvia Rea ; Vicente Hallo ; Patricia Constante</i>	
STUDIES ON THE STRUCTURE AND ELECTRONIC PROPERTIES OF LINEAR CHITOSAN-SILVER NANO-COMPOSITE FOR BIOSENSOR APPLICATIONS	17
<i>Anthony Ramos ; Esteban Lasso ; Saravana Prakash ; Selvarengan Paranthaman ; Edgar A. Gómez</i>	
A MULTI-STAGE ACCELERATED QUANTUM PARTICLE SWARM OPTIMIZATION FOR PLANNING AND OPERATION OF STATIC VAR COMPENSATORS	21
<i>Manuel S. Alvarez-Alvarado ; Dilan Jayaweera</i>	
A STATE-SPACE COMBINED-CYCLE POWER PLANT MODEL AND SIMULATION WITH IAPWS IF-97 PROPERTIES	27
<i>Angel Recalde ; Ivan Endara ; Jorge Torres ; Ricardo Gallo ; Manuel S. Alvarez-Alvarado ; Fernando Vaca-Urbano</i>	
DIMENSION AND CONTROL DESIGN OF A PERMANENT MAGNET SYNCHRONOUS GENERATOR WITH OUTER ROTOR FOR WIND POWER APPLICATION.....	33
<i>Fernando Vaca-Urbano ; Manuel S. Alvarez-Alvarado ; Jimmy Cordova-Villagomez ; Ángel Recalde ; Francisco Blázquez</i>	
INCREASE THE RANGE AND COVERAGE ON OFDM SYSTEM USING PAPR REDUCTION BY CLIPPING ON SDR	39
<i>Bryan Gordillo ; Francisco Sandoval ; Patricia Ludeña-González ; Katty Rohoden</i>	
KINEMATIC AND DYNAMIC MODELING OF A 5-BAR ASSISTIVE DEVICE FOR KNEE REHABILITATION.....	45
<i>Andrés Felipe Guatibonza ; Leonardo Solaque ; Alexandra Velasco</i>	
DEVELOPMENT OF A LOW COST MOBILE SYSTEM FOR MONITORING CARDIAC ACTIVITY BASED ON NONCONTACT ELECTRODES.....	51
<i>Andrés V. Guatapi G. ; Carmen A. Carabali C. ; Alvarez R. Robin</i>	
RISK ANALYSIS OF THE STOCK MARKET BY MEANS SELF-ORGANIZING MAPS MODEL.....	57
<i>Gissela E. Pilliza ; Osiris A. Román ; Winter J. Morejón ; Sergio H. Hidalgo ; Francisco Ortega-Zamorano</i>	
SUCCESSIVE ADAPTIVE LINEAR NEURAL MODELING FOR EQUIDISTANT REAL ROOTS FINDING	63
<i>Joseph R. González ; Fernando P. Zhapa ; Oscar V. Guarnizo ; Francisco Ortega-Zamorano</i>	
OPTIMAL DESIGN OF LOW VOLTAGE DISTRIBUTION NETWORKS USING A PSO-PRIM ALGORITHM	69
<i>J. P. Avilés ; O. Erives ; O. Micheloud</i>	
DESIGN AND DEVELOPMENT OF A NOVEL ROBOTIC GRIPPER FOR AUTOMATED SCAFFOLDING ASSEMBLY	75
<i>Camilla Follini ; Alexander Liu Cheng ; Galoget Latorre ; Luis Freire Amores</i>	
HOW PREDICTING THE ACADEMIC SUCCESS OF STUDENTS OF THE ESPAM MFL?: A PRELIMINARY DECISION TREES BASED STUDY	81
<i>Jéssica Morales Carrillo ; Jorge Parraga-Alava</i>	
NON INTRUSIVE LOAD MONITORING IN CHAOTIC SWITCHED NETWORKS	87
<i>Pedro García ; Xavier Dominguez ; David Chiza ; Jose Restrepo</i>	
HOW INTELLIGENT IS THE SMARTGRID IN ECUADOR?	92
<i>Galo Enrique Valverde Landívar ; Joffre Luis León Veas</i>	
A PROPOSAL FOR TEACHING ADVANCED CONTROL TECHNIQUES USING A VIRTUAL PROCESSES LABORATORY.....	98
<i>Francisco Ulloa ; Oscar Camacho ; Paulo Leica</i>	
NON-LINEAR PID AND DYNAMIC SMC FOR THE ARTIFICIAL PANCREAS CONTROL IN THE TREATMENT OF TYPE 1 DIABETES	104
<i>Dayan Calupíña ; Andrea García ; Oscar Camacho ; Andrés Rosales ; Pablo Rivadeneira</i>	

A COMPARISON OF FUZZY MOVING SLIDING MODE CONTROL AGAINST SLIDING MODE CONTROL FOR CHEMICAL PROCESS WITH VARIABLE DELAY	110
<i>Diego Jáuregui ; Oscar Camacho ; Danilo Chávez</i>	
INVERTER CONTROL FOR POWER INJECTION FROM PV SOURCES IN MICROGRIDS UNDER UNBALANCED POWER GRID AND LOAD CONDITIONS	116
<i>Jose Restrepo ; Xavier Dominguez ; Jhonny Barzola ; Isabel Quinde</i>	
A PARAMETER TUNING APPROACH OF THE SLIDING MODE CONTROL FOR A QUADCOPTER BASED ON GENETIC ALGORITHMS.....	122
<i>Vanessa Orosco ; Danilo Chávez ; Oscar Camacho ; Jose Aguilar</i>	
NONLINEAR CHEMICAL PROCESSES WITH VARIABLE DEAD TIME: COMPARATIVE ROBUSTNESS AND PERFORMANCE ANALYSIS FOR MODEL BASED PREDICTIVE SCHEMES.....	128
<i>María Gabriela Campoverde ; Raísa M. Guayasamín ; Oscar Camacho ; Paulo Leica</i>	
SOLID WASTE MANAGEMENT USING GEOREFERENCED MULTI-AGENT SYSTEMS*	134
<i>Zoila Ruiz-Chavez ; Jaime Salvador-Meneses ; Soledad Díaz-Quilachamín ; Cristina Mejía-Astudillo</i>	
PHOTONIC MICROWAVE FILTER WITH SINGLE PASSBAND COMBINING INCOHERENT AND COHERENT TECHNIQUES	140
<i>Airat Zainullin ; Diego Samaniego ; Borja Vidal</i>	
ENERGY HARVESTING TECHNOLOGIES: ANALYSIS OF THEIR POTENTIAL FOR SUPPLYING POWER TO SENSORS IN BUILDINGS	144
<i>Ruben Hidalgo-León ; Javier Urquiza ; Jose Macías ; Diego Siguenza ; Pritpal Singh ; Jinsong Wu ; Guillermo Soriano</i>	
MQTT PROTOCOL OF IOT FOR REAL TIME BILATERAL TELEOPERATION APPLIED TO CAR-LIKE MOBILE ROBOT.....	150
<i>Freddy Panchi ; Karla Hernández ; Danilo Chávez</i>	
DETERMINATION OF THE OPTIMAL SIZE OF THE ENERGY STORAGE SYSTEMS IN PHOTOVOLTAIC SYSTEMS CONNECTED TO THE ELECTRICITY NETWORK, THROUGH MIXED-INTEGER LINEAR PROGRAMMING	156
<i>Adrián Criollo Rios ; Diego Morales Jadan ; Freddy Narvaez Buestan</i>	
THE EXTENDED KALMAN FILTER AND THE PARTICLE FILTER IN THE DYNAMIC STATE ESTIMATION OF ELECTRICAL POWER SYSTEMS	162
<i>Holger Cevallos ; Gabriel Intriago ; Douglas Plaza</i>	
ACTUATION CONFIRMATION AND NEGATION VIA FACIAL-IDENTITY AND -EXPRESSION RECOGNITION.....	168
<i>Alexander Liu Cheng ; Henriette Bier ; Galoget Latorre</i>	
RENEWABLE RESOURCES CONCESSION-BASED FUNDING MECHANISM FOR ATTAINING LARGE-SCALE POWER PLANTS.....	174
<i>Santiago Pilaquinga ; Ángel Vaca ; Paúl Vásquez</i>	
COMPUTER VISION METHODS IN THE PROCESS OF FERMENTATION OF THE COCOA BEAN.....	180
<i>Pablo Parra ; Teddy Negrete ; Jorge Llaguno ; Nino Vega</i>	
TRANSIENT STABILITY EVALUATION OF HIGH PENETRATION OF DFIG CONTROLLED BY DTC AND DPC INTO POWER SYSTEMS	186
<i>Daniel Cipriano ; Johnny Rengifo ; José M. Aller</i>	
IMPLEMENTATION OF AN IOT ARCHITECTURE BASED ON MQTT FOR A MULTI-ROBOT SYSTEM.....	192
<i>González Bonifaz David Efraín ; Verdugo Cabrera Alexanra Del Carmen ; Escobar Carvajal Luis Fernando ; Loza Matovelle David Cesar</i>	
A PROPOSAL OF A VIRTUAL ROBOTIC ASSISTANT AND A RULE-BASED EXPERT SYSTEM TO CARRY OUT THERAPEUTIC EXERCISES WITH CHILDREN WITH DYSLALIA	198
<i>V. Robles-Bykbaev ; V. Velásquez-Angamarca ; K. Mosquera-Cordero ; D. Calle-López ; Y. Robles-Bykbaev ; E. Pinos-Vélez ; A. León-Pesántez</i>	
VIRTUAL ASSISTANCE ENVIRONMENT FOR DEAF PEOPLE BASED ON AN ELECTRONIC GAUNTLET.....	204
<i>Diego Guzman ; Giovanni Brito ; José E. Naranjo ; Carlos A. Garcia ; Lenin F. Saltos ; Marcelo V. Garcia</i>	
DECENTRALIZED CONTROL VERSUS A FUZZY SUPERVISORY CONTROL: A COMPARISON IN A QUADRUPLE-TANK PROCESS	210
<i>Katherine Aro ; Némesis Escobar ; Danilo Chávez ; Paulo Leica ; Oscar Camacho</i>	
A SYSTEMATIC LITERATURE REVIEW IN CYBER FORENSICS: CURRENT TRENDS FROM THE CLIENT PERSPECTIVE.....	216
<i>Bryan Coronel ; Priscila Cedillo ; Karina Campos ; Jessica Camacho ; Alexandra Bermeo</i>	

DESIGN OF A SOFTWARE ARCHITECTURE AND PRACTICAL APPLICATIONS TO EXPLOIT THE CAPABILITIES OF A HUMAN ARM GESTURE RECOGNITION SYSTEM	222
<i>Fabrizio Eloy Ramírez ; Marco Segura-Morales ; Marco Benalcázar</i>	
BIT-INTERLEAVED CODED MODULATION USING SET PARTITIONED 4-D MULTIDIMENSIONAL FOR OPTICAL COMMUNICATIONS	228
<i>Brayan Peñafiel ; Andres Ortega</i>	
RELIABILITY IN GAN-BASED DEVICES FOR POWER APPLICATIONS	233
<i>Eliana Acurio ; Lionel Trojman ; Felice Crupi ; Ferdinando Iucolano ; Nicolò Ronchi ; Brice De Jaeger ; Benoit Bakeroot ; Stefaan Decoutere</i>	
CAPACITANCE EXTRACTION OF 34-NM METALLURGICAL CHANNEL LENGTH MOSFET FOR PARASITIC ASSESSMENT USING THE RFCV TECHNIQUE.....	239
<i>Diego R. Benalcázar ; Esteban Garzón ; Lionel Trojman</i>	
DESIGN OF A SPATIAL DISORIENTATION SIMULATOR USING A MODIFIED STEWART-GOUGH PLATFORM	244
<i>Esteban Serrano Morán ; Esteban Pérez Báez ; Edwin Aguilar ; Luis Escobar ; Nicolás Pinto</i>	
TELEREHABILITATION PLATFORM FOR POST-ARTHROPLASTY RECOVERY: A DYNAMIC TIME WARPING APPROACH	250
<i>Yves Rybarczyk ; Louis Leconte ; Jorge Pérez Medina ; Karina Jimenes ; Patricia Acosta-Vargas ; Danilo Esparza</i>	
A PHENOMENOLOGICAL MODEL OF THE RESISTIVE SWITCHING FOR HF-BASED RERAM DEVICES	256
<i>Silvana Guitarra ; Lionel Trojman ; Laurent Raymond</i>	
DESIGN OF FLEXIBLE CYBER-PHYSICAL PRODUCTION SYSTEMS ARCHITECTURE FOR INDUSTRIAL ROBOT CONTROL.....	261
<i>Carlos A. Garcia ; Salazar L. Franklin ; Christian Mariño ; Williams R. Villalba ; Marcelo V. Garcia</i>	
INTERFERENCE EVALUATION IN LTE HETEROGENEOUS NETWORKS	267
<i>Lizet Chamorro ; Andrés Fernando Reyes ; Martha C. Paredes-Paredes</i>	
PRE-OPERATIVE PATIENT-SPECIFIC ALLOPLASTIC IMPLANT DESIGN AND MANUFACTURING: CRANIOPLASTY APPLICATION	273
<i>Francis R. Loayza ; Juan Sola-Mora ; Livingston Castro-Valladares ; Jaqueline Litardo ; Luis Nuñez-Idrovo ; Henin Mora</i>	
A NOVEL METHODOLOGY TO OBTAIN OPTIMAL PI CONTROLLER GAINS USING MULTI-GENE GENETIC PROGRAMMING FOR FOPTD SYSTEMS	278
<i>D. Pozo ; L. Morales ; D. Maldonado ; J. Aguilar</i>	
LOWER LIMBS MOTION INTENTION DETECTION BY USING PATTERN RECOGNITION	284
<i>Felipe Astudillo ; Jose Charry ; Ismael Minchala ; Sara Wong</i>	
ROBUST ESTIMATION OF SHIFT-INVARIANT PATTERNS EXPLOITING CORRENTROPY.....	290
<i>Carlos A. Loza ; Jose C. Principe</i>	
TOWARDS THE INSULIN RESISTANCE AND OBESITY DIAGNOSIS: A DIMENSIONAL ANALYSIS APPROACH.....	296
<i>Jesús Velásquez ; Erika Severeyn ; Héctor Herrera ; Néstor Utrera ; Lorena Encalada ; Sara Wong</i>	
ANALYSIS OF VEHICLE FLOW USING AUTO VEHICLE COUNTING	302
<i>Chávez-Alarcón Eliseo ; Roman-Gonzalez Avid</i>	
TOWARDS WEB ACCESSIBILITY IN TELEREHABILITATION PLATFORMS	307
<i>Patricia Acosta-Vargas ; Yves Rybarczyk ; Jorge Pérez ; Mario González ; Karina Jimenes ; Louis Leconte ; Danilo Esparza</i>	
SIGN LANGUAGE RECOGNITION BASED ON INTELLIGENT GLOVE USING MACHINE LEARNING TECHNIQUES	313
<i>Paul D. Rosero-Montalvo ; Pamela Godoy-Trujillo ; Edison Flores-Bosmediano ; Jorge Carrascal-García ; Santiago Otero-Potosi ; Henry Benitez-Pereira ; Diego H. Peluffo-Ordóñez</i>	
PERFORMANCE COMPARISON OF 2×2 AND 4×4 V-BLAST AND ALAMOUTI MIMO SYSTEMS	318
<i>Verónica Soria ; Germán V. Arévalo ; Patricio Ávila ; Francisco Tello ; Cristina Gómez Santamaría</i>	
MATHEMATICAL AND STATISTICAL ANALYSIS FOR THE SIMULATION OF THE VEHICULAR FLOW IN A SPECIFIC SECTOR OF THE CITY OF CUENCA-ECUADOR.....	322
<i>Walter Verdugo-Romero ; Luis González-Delgado ; Erwin J. Sacoto-Cabrera ; Alexandra Verdugo-Cabrera ; Oswaldo Verdugo-Cabrera</i>	
EXPERIMENTAL EVALUATION OF A NG-PON2 NETWORK	326
<i>Acosta O. María ; Marco Yacelga-Pinto ; Germán V. Arévalo</i>	
ON THE BER GAP BETWEEN OPTIMAL AND NEAR-OPTIMAL DETECTORS ON MASSIVE MIMO SYSTEMS	330
<i>David Allan Ibarra ; Juan Minango ; Andrea Flores ; Pablo Minango</i>	

LOW-COMPLEXITY PRECODER FOR MASSIVE MIMO SYSTEMS BASED ON GRAM-SCHMIDT CONJUGATE DIRECTION METHOD	335
<i>Juan Minango ; Andrea Flores ; Pablo Minango ; David Allan Ibarra</i>	
GFDm AND LTE DATA CONVERGENCE TEST IN OPTICAL ACCESS NETWORKS	340
<i>Milton N. Tipán ; Arguero T. Berenice ; Germán V. Arévalo</i>	
A VIRTUAL LISTENER FOR HRTF-BASED SOUND SOURCE LOCALIZATION USING SUPPORT VECTOR REGRESSION.....	344
<i>Felipe Grijalva ; Julio Larco ; Paúl Mejía</i>	
RENEWABLE ENERGY SOURCE P-V CONNECTED TO THE GRID THROUGH SHUNT ACTIVE POWER FILTER BASED IN P-Q THEORY	349
<i>Tuesman D. Castillo ; José Raúl Castro</i>	
LEVEL-SET SEGMENTATION OF FOOTPRINT IMAGES AIMED AT INSOLE DESIGN	354
<i>Ruben Medina ; Ana Zeas Puga ; Villie Morocho ; Sebastian Bautista</i>	
HAMMING CODE TO DATA PROTECTION IN A MODBUS INDUSTRIAL COMMUNICATION: EXPERIMENTAL RESULTS.....	360
<i>Torres S. Hugo ; Urrea O. Claudio ; Kern M. John ; O. Alvarado-Cando</i>	
SLIDING MODE CONTROLLER BASED ON A LINEAR QUADRATIC INTEGRAL REGULATOR SURFACE FOR POWER CONTROL ON A DUAL ACTIVE BRIDGE CONVERTER.....	365
<i>Oscar Gonzales ; Andrés Rosales</i>	
PERSONS COUNTER THROUGH WI-FI'S PASSIVE SNIFFING FOR IOT	371
<i>Gabriel Barros Gavilanes</i>	
INDIVIDUAL ANALYSIS OF EEG BRAIN DYNAMICS PRODUCED BY MINDFULNESS-BASED STRESS REDUCTION TRAINING PROGRAM	377
<i>Christian Anasi ; David Zarka ; Robin Álvarez ; Carlos Cevallos ; Guy Cheron ; Fernando Vásquez</i>	
3DOF MULTI-ROTOR EXPERIMENTAL TESTBED FOR TEACHING CONTROL SYSTEMS.....	383
<i>Carlos Toapanta ; Jimmy Villafuerte ; Patricio J. Cruz</i>	
EFFICIENCY EVALUATION OF INDUCTION MOTORS SUPPLIED BY VFDS	389
<i>Johnny Rengifo ; Junniers Romero ; José M. Aller</i>	
COMPARATIVE ANALYSIS OF OPTICAL FILTERS FOR NG OPTICAL NETWORKS.....	395
<i>María G. Ayala ; María J. Beltrán ; María S. Jiménez ; Germán V. Arévalo ; Daniel Cardenas</i>	
PD + I FUZZY CONTROLLER OPTIMIZED BY PSO APPLIED TO A VARIABLE DEAD TIME PROCESS.....	400
<i>J. Campos ; S. Jaramillo ; L. Morales ; O. Camacho ; D. Chávez</i>	
VIRTUALIZING AND DEPLOYING A SOLUTION TO MP-TCP'S SHARED BOTTLENECKS AS A NETWORK FUNCTION.....	406
<i>Fernando Becerra ; David Mejía ; Iván Bernal</i>	
ORGAN IDENTIFICATION ON SHRIMP HISTOLOGICAL IMAGES: A COMPARATIVE STUDY CONSIDERING CNN AND FEATURE ENGINEERING.....	412
<i>Milton Mendieta ; Fanny Panchana ; Betsy Andrade ; Bonny Bayot ; Carmen Vaca ; Boris Vintimilla ; Dennis Romero</i>	
LIDAR LITE V3 MODULE PERFORMANCE EVALUATION	418
<i>E. Ayala ; J. Sotamba ; B. Carpio ; O. Escandón</i>	
EMG SIGNAL PROCESSING WITH CLUSTERING ALGORITHMS FOR MOTOR GESTURE TASKS.....	423
<i>Víctor Asanza ; Enrique Peláez ; Francis Loayza ; Iker Mesa ; Javier Díaz ; Edwin Valarezo</i>	
PSOC-BASED REAL-TIME DATA ACQUISITION FOR A SCALABLE SPIKING NEURAL NETWORK HARDWARE ARCHITECTURE.....	429
<i>Mireya Zapata ; Upasana K. Balaji ; Jordi Madrenas</i>	
A SYSTEMATIC REVIEW ON TRANSPILER USAGE FOR TRANSACTION-ORIENTED APPLICATIONS	435
<i>F. Andrés Bastidas ; María Pérez</i>	
SMART TRAFFIC LIGHT CONTROL SYSTEM.....	441
<i>Nicole Díaz ; Jorge Guerra ; Juan Nicola</i>	
THE SMART DOORBELL: A PROOF-OF-CONCEPT IMPLEMENTATION OF A BLUETOOTH MESH NETWORK	445
<i>Caril Martínez ; Leonardo Eras ; Federico Domínguez</i>	
SIX-AXIS LOWER-LIMB EXOSKELETON CONTROL SYSTEM BASED ON NEURAL NETWORKS.....	450
<i>Eduardo Alcivar-Molina ; Jorge Hurel ; Efraín Terán ; Geancarlos Zamora-Olea ; Ronald Ponguillo ; Francis R. Loayza</i>	

WIRELESS SENSOR NETWORKS FOR IRRIGATION IN CROPS USING MULTIVARIATE REGRESSION MODELS	455
<i>Paul D. Rosero-Montalvo ; José Pijal-Rojas ; Carlos Vásquez-Ayala ; Edgar Maya ; Carlos Pupiales ; Luis Suárez ; Henry Benitez-Pereira ; D.H. Peluffo-Ordóñez</i>	
ARIOTIVITY: PROVISIONING SMART OBJECTS WITH AUGMENTED REALITY AND OPEN STANDARDS	461
<i>Fernando Campaña ; Federico Domínguez</i>	
ROBUST CONTROLLER BASED ON AN OPTIMAL - INTEGRAL SURFACE FOR QUADRUPLE-TANK PROCESS	467
<i>Marco Herrera ; Oscar Gonzales ; Paulo Leica ; Oscar Camacho</i>	
USE OF VIDEOGAMES FOR FUNCTIONAL REHABILITATION DYNAMIC FOR UPPER LIMBS IN OLDER ADULTS, ADVANCED AGE AND ELDERLY	473
<i>Fabiola Chacha ; Catalina Punin ; Boris Barzallo ; Monica Huerta ; J. Pablo Bermeo</i>	
OPTIMAL PLUG-IN ELECTRIC VEHICLES CHARGING COORDINATION IN ELECTRICAL DISTRIBUTION NETWORKS	478
<i>Julio López ; Daniel Cordero-Moreno</i>	
NEW PROPOSALS FOR THE MONITORING OF WATER RESOURCES (SMARTWATER).....	484
<i>Guadalupe Martínez Mena ; Elvira Martínez De Icaya Gómez ; Estibaliz Martínez Izquierdo</i>	
GRID CONNECTED INVERTER WITH ACTIVE POWER FILTER CAPABILITIES FOR TWO-PHASE SYSTEMS	489
<i>Julio Viola ; Marco Fajardo ; José Manuel Aller ; José Restrepo ; Flavio Quizhpi</i>	
Author Index	