

**Conference Program
MCSI 2016**



**Chania, Greece
August 27-29, 2016**

Conference Location:

**Technological Educational Institute of Crete
School of Applied Science
Romanou 3, Helepa 73135, Chania, Crete**

Saturday 27th August 2016

Opening

Conference Room: A

Time: 08:00-08:30

Dean of the School of Applied Science: Professor Manolis Antonidakis

Head of the Department of Electronic Engineering: Associate Professor, Ioannis Vardiambasis

Conference Room: A

Time: 08:30-09:00

Plenary Lecture:



New Numerical Techniques for Ordinary and Partial Differential Equations

by Prof. Nikos E. Mastorakis, Technical University of Sofia, BULGARIA.

Conference Room: A

Time: 09:00-11:00

MSCI 2016: Computers in Electrical Circuits and Motors

Chair: Yannis L. Karnavas, Vincenzo Niola

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|---|---|-----|
| Advanced Laser Processes for Photovoltaic Energy Production | Konstantinos Petridis, Emannuel Kymakis, Emannuel Stratakis | 086 |
| Synthesis the Complex of RNase a Solution and Hhal with UO ₂ ²⁺ and Th Ions | Aibassov Erkin, Yemelyanova Valentina, Shakieva Tatyana, Nakisbekov Narymzhan, Tussupbaev Nessipbay, Bulenbayev Maxat, Dossuomova Binara, Blagikh Evgeniy | 045 |
| Optimization of Standard PMDC Motors Used in Automotive Applications for Higher Power Density | Yannis L. Karnavas, Ioannis D. Chasiotis, Emmanouil D. Peponakis | 034 |
| Post-Implementation Evaluation of a University Management Information System (UMIS) | E. Symeonaki, M. Papoutsidakis, D. Tseles, M. Sigala | 024 |
| Shaft-Generators in Ships: Techno-Economic Sensitivity Analysis Study | Konstantina Gkotzia, George J. Tsekouras, Fotios D. Kanellos, Panayiotis Michalopoulos, John M. Prousalidis, Nikolaos E. Mastorakis | 080 |
| Nonlinear Models for the Vibrational Analysis of a Complex Dynamical System | Vincenzo Niola, Giuseppe Quaremba, Gennaro Pellino, Angelo Montanino | 067 |
| Heading Control of Unmanned Submersible Vehicle | Nenad Popovich, Rajul Singh | 022 |

11:00-11:30: Coffee Break

Saturday 27th August 2016

Conference Room: A

Time: 11:30-13:30

2016: Mathematics in Mechanical Engineering and Industry

Chair: Constantin Rotaru, Hossein Hosseini

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|--|---|-----|
| Mathematical Modeling for Heat-Shrinkable Polymeric Article Production | Hossein Hosseini, Boris V. Berdyshev, Igor V. Iskopintsev | 039 |
| Kinetic Modeling of Hydrocracking Process | Mohammad Mosaddegh, Hossein Hosseini | 033 |
| The Role of Computational Fluid Dynamics to Solve Wind Engineering Problems | Neihad Hussen Al-Khalidy | 055 |
| New Solutions for Aircraft Wing and Helicopter Blade Airfoils | Constantin Rotaru, Mihai Mihaila-Andres | 074 |
| Aspects Regarding Aerodynamic Shape of Turbojet Combustion Chamber | Constantin Rotaru | 060 |
| Thermally Induced Vibrations in Orthotropic Rectangular Plates: The ANOVA Approach | Tripti Johri, Indu Johri | 047 |
| Exact Solution of Boundary Value Problem of Elasticity for Domain Bounded by Parabola with Normal Load | Natela zirakashvili | 051 |
| Linear Complexity Cubic Sequences over Finite Fields | Vladimir Edemskiy, Nikita Sokolovskiy | 071 |

Saturday 27th August 2016

Conference Room: A

Time: 13:30-15:30

MSCI 2016: Mathematics in the Wireless Networks

Chair: Theodoros N. Kapetanakis, Ludek Lukas

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|--|---|-----|
| Solving Bi-Objective Two-Dimensional Rectangle Packing Problem Using Binary Cuckoo Search | Amandeep Kaur Virk, Kawaljeet Singh | 044 |
| ERP Systems Created to Support Academic Management in Contexts of Geographic Dispersion: A Case Study in Regional Higher Education | Moreno Luis Gabriel, Salimas Martha Janneth, Anzola Diego, López V. Juan D. | 078 |
| The Key Theoretical Models for the Safety and Security Ensuring | Ludek Lukas, Martin Hromada, Lukas Pavlik | 064 |
| Molecular Dynamics Simulation of Lysine Dendrimer and Oppositely Charged Semax Peptides | Igor Neelov, Elena Popova | 054 |
| Under-actuated Finger Driven by Un-extendible Tendons Grasping Tests by WM 2D™ | Vincenzo Niola, Cesare Rossi, Sergio Savino, Francesco Timpone | 069 |
| Classification-Based VQ Model for Simulation of Binary Error Process on the Wireless Channel | Tibor Csóka, Jaroslav Polec, Filip Csóka, Kvetoslava Kotuliaková | 031 |
| Radiation Performance of Satellite Reflector Antennas Using Neural Networks | Theodoros N. Kapetanakis, Ioannis O. Vardiambasis | 091 |

15:30-16:00: Coffee Break

Saturday 27th August 2016

Conference Room: A

Time: 16:00-18:00

MSCI 2016: Analysis of Communications' Networks

Chair: Bendato Ilaria, Mingyue Ding

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| Calibration of Nonlinear Radix in Pipelined Analog-to-Digital Converters Using a Correlation | Hamed Aminzadeh, Morteza Rajabzadehy | 041 |
| Maximum Power Point Tracking of Photovoltaic Modules: Comparison of Fuzzy Logic and Artificial Network Controllers' Performances | Jemaa Aymen, Zarrad Ons, Mansouri Mohamed Nejib, Aurelian Crăciunescu | 053 |
| Modeling the Probabilities of Failures of 22 nm CMOS Logic Cells | Azam Beg | 029 |
| Optimization of Stochastic Discrete Event Simulation Models using "AFO" heuristic | Bendato Ilaria, Cassettari Lucia, Fioribello Simone, Giribone Pier Giuseppe | 027 |
| Real-time Load Identification by Active Power Feature Extraction and Switching Detection | Mingyue Ding, Jinxiao Huang, Jiazhen Li, Nikos E. Mastorakis, Xiaodong Zhuang | 038 |
| DTN Networks : Stochastic Analysis of Bundles Distribution | El Arbi Abdellaoui Alaoui, Said Agoujil, Moha Hajar | 002 |
| Improving the Delivery Rate of Data with : DTN Routing Hierarchical Topology (DRHT) | E. A. Abdellaoui, S. Agoujil, M. Hajar, Y. Qaraai | 001 |
| Interference Calculations for Aeronautical Communications Using Cells in Greek Airspace | Evangelos Kokkinos, Ilias Peteinatos, Rajagopal Nilavalan | 095 |

Poster:

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| High Throughput Software Multithreshold Decoder on GPU | Zolotarev V., Ovechkin G., Ovechkin P., Satybaldina D., Tashatov N., Sankibayev D. | 063 |
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Sunday 28th August 2016

Conference Room: A

Time: 09:00-11:00

MSCI 2016: Applications of Fuzzy Logic and Optimazation Problems

Chair: G. A. Leonov, Naohisa Otsuka

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|---|--|-----|
| Lyapunov Dimension of Attractors of the Lorenz-like Differential Equations | G. A. Leonov, S. M. Seledzhi | 020 |
| Quadratic Stabilization and Transit Problems for Switched Linear Systems via State Feedback | Naohisa Otsuka, Shota Sekiguchi | 017 |
| Fuzzy Multimeasures in Birkhoff Weak Set-Valued Integrability | Anca Croitoru, Alina Iosif, Nikos Mastorakis, Alina Gavrilut | 036 |
| The Notion of Duality in Fully Intuitionistic Fuzzy Linear Programming (FIFLP) Problems | Izaz Ullah Khan, Mohsin Khan | 052 |
| Efficient Combination of Two Lower Bound Functions in Univariate Global Optimization | Ouanes Mohand, Chebbah Mohammed, Zidna Ahmed, Le Thi Hoai | 058 |
| Numerical Solution of Fuzzy Control Problems Using Linear Programming | F.Nobakht, Gh. Atazandi, A. V. Kamyad, A. Zare | 008 |
| Detection and Localisation Method System Industrial by Bond Graph Model Using Luenberger Observer | Abderrahmene Sellami, Nadia Zanzouri | 065 |
| General Methods Generate Fuzzy Equivalence Relations of the Form $n \times n$ Matrices | M. A. Shakhathreh, T. A. Qawasmeh | 010 |

11:00-11:30: Coffee Break

Sunday 28th August 2016

Conference Room: A

Time: 11:30-13:30

MSCI 2016: Applications of Computers in Sensors Networks

Chair: Emmanuel Antonidakis, Tomasz Praczyk

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| The Influence of Parameters of Biomimetic Underwater Vehicle Control System on the Ability of the Vehicle to Avoid Obstacles | Tomasz Praczyk | 016 |
| Analysis of Various Protocols in Wireless Body Area Networks (WBAN) | Narayana Swamy R. | 077 |
| Wagner-Whiten Algorithm Applied for Joint Replenishment Problem | Bassem H. Roushdy | 037 |
| Sensors Networks - Localization and Topology | Marios Sfendourakis, Rajagopal Nilavalan, Emmanuel Antonidakis | 072 |
| A Bibliometric Study on RFID and Supply Chain Management | Anil Kumar, Divya Prakash Shrivastava | 050 |
| Functional Virtual Prototyping Environment for a Family of Map-Reduce Embedded Accelerators | Călin Bîră, Gheorghe M. Ștefan, Mihaela Malița | 057 |
| Performance Enhancement of Underlay Cognitive Radio Networks by Intelligent Multiple Relay Selection | Kiran Sultan, Bassam A. Zafar, Muhammad Zubair, Zeeshan Shafi Khan | 049 |
| Performance Optimization of Underlay Cognitive Radio Networks through Relay Selection and Evolutionary Computing | Kiran Sultan, Bassam A. Zafar, Babar Sultan, Muhammad Zubair, Zeeshan Shafi Khan | 083 |

Sunday 28th August 2016

Conference Room: A

Time: 13:30-15:30

MSCI 2016: Applications of Signal Processing

Chair: Mohamed A. Fadeel, Nikolaos V. Karadimas

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| An Efficient Segmentation Algorithm for Arabic Handwritten Characters Recognition System | Mohamed A. Fadeel | 040 |
| Applications of Chaotic Maps and Coding for Secure Transmission of Images over Wireless Channels | Mona F. M. Mursi, Ayman H. Abd El-Aziem | 068 |
| Real Emotion Recognition by Detecting Symmetry Patterns with Dihedral Group | Mehdi Ghayoumi, Arvind K. Bansal | 056 |
| Speech Intent Recognition for Robots | Borui Shen, Diana Inkpen | 059 |
| Grayscale Image Compression Based on Probabilistic Run Length Encoding Algorithm | Hassan K. Albahadily, Alaa A. Jabbar Altaay, Viktor U. Tsviatkou, Valery K. Kanapelka | 011 |
| A Distributed Approach for Traffic Signal Synchronization Problem | Ludovica Adacher, Marco Tiriolo | 043 |
| An Optimizing Algorithm to Minimize the Delay Signal Setting Problem | Ludovica Adacher, Andrea Gemma | 042 |
| Graphics Visualization of Specific Dashboards in Transport Technologies | Pavel Pokorný, Kamil Stokláška | 046 |
| Panspermia of GeoData in Support Systems for Design and Execution of Operational Procedures | George Tsavdaridis, Elias Koukoutsis, Nikolaos V. Karadimas | 092 |
| Military Student Assignment Using NexClass Decision Support System | George Rigopoulos, Nikolaos V. Karadimas | 094 |

15:30-16:00: Coffee Break

Sunday 28th August 2016

Conference Room: A

Time: 16:00-18:00

MSCI 2016: Mathematical Models in Environmental Sciences

Chair: Monika Maciejewska, Irina Astashova

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| Energy Efficient Designs: Cleaner and Greener Energy Technologies, Sustainable Development and Environment | Abdeen Mustafa Omer | 012 |
| On One Model of Temperature Control In Hothouses | Irina Astashova, Alexey Filinovskiy, Dmitriy Lashin | 076 |
| Numerical Analysis and Reconstruction of the Temperature Regime of the Lena River Segment | Igor Zhilyaev, Vera Fofonova | 025 |
| Sedimentology and Geochemistry of the Makran Coastal Sediments Located in Southeastern Iran | Ahrari-Roudi Moyeddin, M. A. Zainudini | 014 |
| Models of Protection the Rare and Disappearing Kinds: Estimations of Number of Predators of Ecosystem Reserves | Mahmadyusuf Yunusi | 015 |
| Detection of Occupancy Events from Indoor Air Monitoring Data | Anadrzej Szczurek, Monika Maciejewska | 073 |
| System Identification Method by Structural Similarity for Seismic Migration | Hernando Castañeda M., Manuel Jose Maldonado Ortega, Pamplona N. S., Jairo Torres Peña | 004 |

21:00: Conference Dinner

Monday 29th August 2016

Conference Room: A

Time: 09:00-11:00

MSCI 2016: Applications of Mathematics in Sciences

Chair: Stylianos Scarlatos, Samer Mansour

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|---|---|-----|
| Average Domain Size Scales like Population Size in the Absorbing Configurations of the One-Dimensional Axelrod Model with Three Features and Three States | Stylianos Scarlatos | 021 |
| Minimizing Averaged Error for Dynamic Matrix Control | Samer Mansour, Jalal Karam | 048 |
| Parallel Version of the Mirror Descent Algorithm for the Two-Armed Bandit Problem | Alexander Kolnogorov, Dmitry Shiyan | 084 |
| The Accounting Equation and Claims on Assets Value Change | Fernando Juárez | 082 |
| Application of the Hybrid Methods to Solving Integro-Differential Equations of the Second Order | Mehdiyeva Galina, Ibrahimov Vagif, Imanova Mehriban | 028 |
| Distributed Backstepping Control with Actuator Delay for Active Suspension System | Aziz Sezgin, Yuksel Hacioglu, Nurkan Yagiz | 009 |
| A More Efficient Card-Based Protocol for Generating a Random Permutation Without Fixed Points | Takuya Ibaraki, Yoshifumi Manabe | 032 |
| A Non-Blocking Online Cake-Cutting Protocol | Koki Kubo, Yoshifumi Manabe | 030 |
| Fast Extremum Seeking of Model Predictive Control Based on Hammerstein Model | Chagra Wassila, Degachi Hajer, Ksouri Moufida | 035 |

11:00-11:30: Coffee Break

Monday 29th August 2016

Conference Room: A

Time: 11:30-13:30

MSCI 2016: Mathematical Models for Internet of Things and Web

Chair: Nikolaos Bardis, Henrique Vicente

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|--|---|-----|
| Mathematical Model of Underwater Vehicle with Undulating Propulsion | Piotr Szymak | 023 |
| Developing the Product Strategy via Product Life Cycle Simulation According to System Dynamics Method | Sepideh Tavassoli, Naghmeh Khajeh Nassir Toussi | 005 |
| Age Prediction through Pelvis X-Ray Images - A Case Based Approach to Problem Solving | Diana Martins, Victor Alves, Henrique Vicente, José Neves | 079 |
| Fast Empirical Mode Decomposition Based on Gaussian Noises | Risheng Wang, Jianjun Zhou, Jie Chen, Yanjie Wang | 066 |
| Using Collaborative Based Algorithm for Efficient Management of Limited Resources on Social Networks | Valon Xhafa, Korab Rrmoku, Blerim Rexha | 007 |
| Erasure Code for Efficient Error Correction in Block Data Transmission | Nikolaos Bardis, Nikolaos Doukas, Oleksandr P. Markovskyi | 087 |
| Availability and Security Assessment of Smart Building Automation Systems: Combining of Attack Tree Analysis and Markov Models | Al-Sudani Mustafa Qahtan Abdulmunem, Vyacheslav S. Kharchenko | 088 |
| Assurance Case Driven Design for Computer Systems: Graphical Notations versus Mathematical Methods | Vladimir Sklyar, Vyacheslav Kharchenko | 089 |
| Reliability and Security Issues for IoT-Based Smart Business Center: Architecture and Markov Model | Vyacheslav Kharchenko, Maryna Kolisnyk, Iryna Piskachova, Nikolaos Bardis | 093 |