

**Joint Program of the WSEAS
International Conferences:
IMCCAS'02, ISA'02, SOSM'02, MCP'02, MEM'02
Cancun, Mexico
May 12-16, 2002**

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PROGRAM



Cancun, Mexico
May 12-16, 2002



Dear Participants,

We are greatly honored to have you with us once again in the WSEAS Multiconference on IMCCAS, ISA, SOSM, MCP, MEM. Taking this opportunity, we would like to express our appreciation to you and wish you to enjoy the scientific and cultural part of the meeting.

In your conference bag, you can find the following material:

- Conference Proceedings (CD-ROM)
- Two volumes of WSEAS-Press International Editions
- A free sample copy from WSEAS Transactions
- Certification of attendance
- Notebook and pen
- Name Card
- A coupon for our Banquet

Thank you very much.

The Organizing Committee

**Joint Program of the WSEAS
International Conferences:
IMCCAS'02, ISA'02, SOSM'02, MCP'02, MEM'02
Cancun, Mexico
May 12-15, 2002**

Hyatt Regency Cancun, Zona Hotelera, Cancun Q.R. 77500, Mexico.
Tel: +52 998 883 1234, Fax: +52 998 883 1349

Sunday, May 12

09:00-13:00:Distribution of the Conference Material

16:00-20:00:Distribution of the Conference Material

Monday, May 13

Room A

PLENARY LECTURE 1: 08:00-09:00

**Electronic (Photo)-Excitation and Escape from Quantum Traps, in
Multilayered Semiconducting and Superconducting Nanostructures**

Prof. ARGYRIOS C. VARONIDES
Physics and Electrical Engineering Department,
University of Scranton,
Scranton PA 18510, USA

Abstract: Multilayered semi-conducting and superconducting nanostructures and devices are the results of technological extremes that force them to behave (a) faster (b) more efficiently (c) and quantum mechanically. The talk will stress the necessity of quantum size effects for better (semiconducting) device performance and will outline tunneling techniques (both experimental and theoretical) for an understanding of superconducting Josephson-like (normal-insulator-superconducting) junctions of thin Yttrium-Barium-Copper-Oxide (YBCO) films. Nanostructures are regimes where electrons operate as solutions of the Schrodinger's equation (hence as waves) rather, than as simple charged carriers. In this level, two fundamental electronic excitations occur via (i) tunneling and (ii) thermal escape. In the first case, electrons are trapped in quantum wells and then forced to tunnel through the growth direction of the device. In the latter case, electrons gain sufficient energy from incident radiation, so that they are capable of thermally escaping from quantum traps and become conduction electrons, thus increasing conductivity.

Room A

Time: 09:00-11:00

SESSION: Measurement and Control

Chair: Leonardo Acho Zuppa

All the papers of this session are published in the pages 1 – 35 of the “Advances in Information Science and Soft Computing”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

A new method to distinguish Non-voice and voice in Speech Recognition

Changchun Li

Home agent based location update and destination search schemes in ad hoc wireless networks

Ivan Stojmenovic

A Brief Discussion On Demand-Side Network Externalities

Panian Zeljko

Design and Impelementation of the IPsec-based Security System

Jihoon Jeong, Geonwoo Kim, Sohee Park, and Seungwon Shon

A method to implement information systems by reusable components

Vincenza Carchiolo, Michele Malgeri, Giuseppe Mangioni

Methodical aspects for the development of product lines

Ilka Philippow, Kai Boellert, Detlev Streitferd, Matthias Riebisch

Room B

Time: 09:00-11:00

SESSION: Information Systems I

Chair: Ilka Philippow

All the papers of this session are published in the pages 1 – 35 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

A class of adaptive H-infinity control design for linear systems via state feedback

Leonardo Acho Zuppa

H-infinity Control Design of PWM Voltage-Controlled DC-DC Cuk Converter

Leonardo Acho Zuppa and Luis T. Aguilar Bustos

On start point selection for time-optimal system design algorithm

Alexander Zemliak, Pedro Miranda

The use of CAD System for Improving Flow Conditioner Design to Reduce Installation Effects On Orifice Metering

A.K. Ouazzane, F. Marir, K. Zerzour, R. Benhadj-Djilali

A non linear filter; the design of an analog ota current mode median filter

Arturo Prieto-Fuenlabrada, Boris Escalante-Ramirez, Joel Garcia-Delgado.

Digital ICD control with applications to submarine depth control

Jesús Liceaga, Moisés Manzano, Eduardo Liceaga

Coffee Break 11:00 – 11:30

Room A

Time: 11:30-13:30

SESSION: Mathematical Methods in Physics and Mechanical Engineering I

Chair: Gabriel Bognar

All the papers of this session are published in the CD-ROM Proceedings and in the WSEAS TRANSACTIONS on SYSTEMS.

Non-uniformly moving source in electromagnetic waveguides

Vladimir Rabinovich, Ivan Miranda

On the relation between the Maxwell system and the Dirac equation

Vladislav Kravchenko

The application of isoperimetric inequalities for nonlinear eigenvalue problems

Gabriella Bognar

Regularization of Applied Inverse Problems by the Full Spline Approximation Method

Alexandre Grebennikov

The Inverse Problem of Electrical Capacitance Tomography and its Application to Gas-Oil 2-Phase Flow Imaging

Andres Fraguera, Carlos Gamio, Doris Hinestroza

Solving Nonlinear Poisson-Boltzmann Equation for Biophysical Electrostatic Potential Simulation with Parallel Monotone Iterative Method

Yiming Li, Hsiao-Mei Lu

Room B

Time: 11:30-13:30

SESSION: Modern Computer Systems, Modeling, Simulation

Chair: Cherif Aissi

All the papers of this session are published in the pages 36 – 63 of the “Advances in Information Science and Soft Computing”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

An application framework for E-learning

Jan herman Verpoorten

The Knowledge plane interface

Christian Sifaqui

On the centrifugal pumps performance curves estimation using empirical equations

N.W. Vlachakis, A.K. Baldoukas

Task-sensitive Adaptability for Software Agents

Santtu Toivonen, Heikki Helin

The Use of Ontologies for Medical Guideline Servers

Vesselin Detschew, Anne-Kathrin Kaeding, Gert Funkat

System for Communication Networks Modeling, Simulation and Analysis

Andre Luiz de C. Klingelfus, Godoy W.

Room A**Time: 15:00-17:00****SESSION: Circuits Analysis and Control***Chair: Demetrios Kazakos*

All the papers of this session are published in the pages 36 – 61 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

**An Experiment in Neuro-Computed Torque Control of a Geared,
DC Motor Driven Industrial Robot**

Daniel Schmidt, Andrew Paplinski

Design of a hysteresis chaotic circuit

Cherif Aissi, Demetrios Kazakos

A model for a turbulence system generator

Cherif Aissi, Demetrios Kazakos

**Methods and algorithms for the error correction odometers in the
recognition pipeline system PIG**

Juan Manuel Lopez, Sergiy Sadovnychiy, Volodymyr Ponomaryov, Adrian Sanchez

Astaxanthin production by Phaffia rhodozyma using a pH-stat control

Enrique Herrera, Jesus Ramirez, Anne Gschaedler, Melchor Arellano, Luz Nunez, Raul Leal

**A Discrete Fractional Gabor Expansion for Time-Frequency Signal
Analysis**

Aydin Akan, Yalcin Cekic

Room B**Time: 15:00-17:00****SESSION: Mathematical Methods in Physics and Mechanical Engineering II***Chair: V.V.Zozulya*

All the papers of this session are published in the CD-ROM Proceedings and in the WSEAS TRANSACTIONS on SYSTEMS.

**Exact Solutions for Coherent Modes of Propagation-Invariant Optical
Field**

Andrey S. Ostrovsky, Gabriel Martinez-Niconoff, Julio C. Ramirez -San-Juan

**Fast Algorithm for Computer Simulation of Optical Systems
with Partially Coherent Illumination**

Andrey S. Ostrovsky, Obdulio Ramos-Romero, Gabriel Martinez-Niconoff,
Julio C. Ramirez -San-Juan

The Analyses and Applications of the Traffic Dispersion Model

Hsun-Jung Cho, Shih-Ching Lo

**Relative velocity between particle and fluid in a two-phase turbulent
flow**

Vai Kuong Sin

**The RNG Turbulence Closure: Application and Revisited. Performance
Assessment**

A.D. Ferreira & A.C.M. Sousa.

Fracture dynamics with crack edges contact interaction

V. V. Zozulya, O.V. Menshykov, P.I. Gonzalez-Chi

Coffee Break 17:00 – 17:30

Room A

Time: 17:30-19:30

SESSION: Digital Systems and Modern Computer Applications

Chair: Alexandru Onea, Andrew Perry

All the papers of this session are published in the pages 64 – 95 of the “Advances in Information Science and Soft Computing”,
WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

Feasibility evaluation of image retrieval parallel implementation

A. Amato¹, T. Delvecchio, V. Di Lecce, D. Gagliardi, A. Giancaspro, A.
Guerriero, G. Milillo

Compilation of a Mexican Spanish text corpora

Sofya N. Galicia-Haro, Alexander Gelbukh, Igor A. Bolshakov

A taxonomy of visual feedback for interactive systems

Jaime Mupo Arteaga

Sampling a large health care database, based on fractal nature of data

Evguenia Jilinskaia, Cathy Johnson, Stanley Norton, Chris Amendola,
Robert St.John, Bo Chong

Digital Motion Control Development Shell

Alexandru Onea, Vasile Horga

Applications of a Quasireflexive R Sequence of Banach Spaces

Andrew Perry

Room B

Time: 17:30-19:50

SESSION: Instrumentation, Control and Systems Applications

Chair: John Waldron

The first 6 papers of this session are published in the pages 62 – 97 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings. The seventh paper is published in the CD-ROM Proceedings as well as in a future volume of WSEAS Press.

Dynamic Analysis of the Java Virtual Machine Method Invocation Architecture

Siobhan Byrne, Charles Daly, David Gregg, John Waldron

A Microcontroller-Based 3-Axis Manipulator Applied to a Printed-Circuit-Board Driller System

Salvador Ramirez Zavala, Edmundo Barrera Cardiel

Computing symbolic transfer functions from SPICE files using nullors

Esteban Tlelo-Cuautle and Jaime Cid-Monjaraz

Application of control techniques to the management of the maintenance of repairable devices

Giovanni Luca Amicucci, Giuseppe Platania

Neural Network Technique to improve Carbon content of Fly Ash Measurement using a Laser Instrument

A. K. Ouazzane, F. Marir, K. Zerzour,

CNC Micro Machine Tool: Design & Metrology Problems

Ernst Kussul, Tatyana Baidyk, Leopoldo Ruiz-Huerta, Alberto Caballero-Ruiz, Graciela Velasco

Non-linear filtering using a DSP for estimating the optical carrier phase

in a BPSK homodyne coherent communications systems

Arvizu A., Muraoka R., Mendieta F.J., Mitrani D

Tuesday, May 14

Room A

PLENARY LECTURE 2 08:00-09:00

**Some Aspects of General System Design Methodology: Current State
and Perspectives**

Prof. ALEXANDER ZEMLIAK

Av. San Claudio s/n, Ciudad,

Universitaria, Puebla,

Pue., 72570, Mexico

Abstract: The size and the complexity of the systems grow constantly. One of the main problems of a large system design is the excessive computer time that is necessary to achieve the final point of the design process. There are some powerful methods that reduce the necessary time for the circuit analysis. The progress in optimization technique favors the development of fast algorithms for the electronic circuit design too. Nevertheless, the time of the large-scale circuit analysis and the time of the optimization procedure increase when the network scale increases. Meanwhile, it is possible to reformulate the total design problem and generalize it to obtain a set of different design strategies. It is clear that a finite but a large number of different strategies include more possibilities for the selection of one or several design strategies that are the time-optimal. This is especially right if the infinite number of the different design strategies is drawn into the design process. The general design methodology was formulated on the basis of the optimal control theory approach. The problem of the time-optimal design strategy search is formulated as the typical problem for the functional minimization of the control theory. This approach permits to use the specific methods of the control theory and opens the perspective to construct the time-optimal system design algorithm.

Room A

Time: 09:00-11:00

SESSION: Advances in Mathematical Theory

Chair: A. Varonides

All the papers of this session are published in the CD-ROM Proceedings and in the WSEAS TRANSACTIONS on SYSTEMS.

Novel approach to the time-optimal system design methodology

Alexander Zemliak

A Solution to the Optimal Tracking Problem for Linear Systems

Corneliu Botan, Florin Ostafi, Alexandru Onea

Generating gaussian functions using low-voltage MOS-translinear circuits

Carlos Sanchez-Lopez, Alejandro Diaz-Sanchez, Esteban Tlelo-Cuautle

Synchronization of two hyperchaotic Rossler systems: Model-matching approach

Ana Y. Aguilar-Bustos, Cesar Cruz-Hernandez

Bayesian Approach to Parameter Estimation in Individual Protein Molecule Dynamics Model

M.Malyutov, R.S. Protassov, D. Golan, R. Mirchev

State Observation for Nonlinear Hybrid Automata

A. Germani, C. Manes, P. Pepe

Room B

Time: 09:00-11:00

SESSION: Data Systems, Filtering, Communications

Chair: Beniamino Castagnolo, Maria Rizzi

All the papers of this session are published in the pages 96 – 124 of the “Advances in Information Science and Soft Computing”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

Meta-He Digital Signatures Based on Factoring and Discrete Logarithms

Shun-Fu Pon, Erl-Huei Lu, Ya-Cheng Lu

Efficient Agent Communication in Slow Wireless Networks

Heikki Helin, Mikko Laukkanen

Substrate noise reduction in CMOS transistors: a methodology definition

Beniamino Castagnolo, Maria Rizzi

On the design of a class of chebyshev filters

David Baez-Lopez, Juan Manuel Ramirez, Luis Gerardo Guerrero, Víctor Jimenez

MONIL, the Metadata and Object Integration Language

M. Larre, J. Torres, E. Morales, S. Torres

Design and development of a data warehouse for atmospheric conditions

Raul Gutierrez, Jose Torres, Michel Rosengaus, Reni Lobato

Coffee Break 11:00 – 11:30

Room A

Time: 11:30-13:30

SESSION: Circuits, Dynamical Systems, Control

Chair: Jesus Liceaga

All the papers of this session are published in the pages 98– 128 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

An adaptive control algorithm for multiple-input multiple-output systems using neural networks

Jose Noriega

A Family of Low Depth, Threshold Logic, Carry Lookahead Adders

Peter Celinski, Said Al-Sarawi, Derek Abbott, Jose F. Lopez

Video hardware system and image compression using the DCT

Edmundo Sanchez-Salguero, Hugo Sanchez-Salguero

State-space based Modern Control: Application for Predictive Control Design

Sinchai Chinvorarat, Marco P. Schoen

A new microwave one-port transistor amplifier with high performance for L-band operation

A. P. Venguer, J. L. Medina, R. Chavez, A. Velazquez

A dynamical system approach to the simulation of coach passenger variation

Hsun-jung Cho, Chih-ku Fan

Room B

Time: 11:30-13:30

SESSION: Systems Theory and Soft Computing

Chair: Yiming Li

All the papers of this session are published in the CD-ROM Proceedings and in the WSEAS TRANSACTIONS on SYSTEMS.

**Numerical Solution of Hydrodynamic Semiconductor Device Equations
Employing a Stabilized Adaptive Computational Technique**

Yiming Li, Chuan-Sheng Wang

Models for pulsed-mode IMPATT diode simulation

Alexander Zemliak

A Simplex-Genetic method for solving the Klee-Minty cube

Juan Frausto-Solis, Rafael Rivera-Lopez, Fernando Ramos-Quintana

Software for Calculating Radiation Patterns for Linear Antenna Arrays

Jose Luis Ramos Q., Martin J. Martinez S, Gustavo A. Vega G., M. Susana Ruiz P.

A sat instances construction based in hypergraphs

Isaac Vazquez-Moran, Jose Torres-Jimenez

Room A

Time: 15:00-17:00

SESSION: Networking systems, Internet and Signal Processing Systems

Chair: D. Kazakos

All the papers of this session are published in the pages 125 – 156 of the “Advances in Information Science and Soft Computing”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

Dependable Mobile Agents

Adel Cherif, Takuya Katayama

**Another Approach for Portfolio Selection using Evolutionary
Programming for the Mexican Stock Exchange**

Cesar A. Coutino, Jose Torres-Jimenez

**Simple Method for Hierarchical Conceptual Indexing of Documents
Using Relational Data Model**

A. Gelbukh, G. Sidorov, A. Guzman-Arenas

**The Impact of Information Technology and Internet in the Construction
Industry**

Amaury A. Caballero, Kang K. Yen

**Comparison of Image Approximation Methods: Fourier Transform,
Cosine Transform, Wavelets Packet and Karhunen-Loeve Transform**

Chao-Hsing Hsu, Zhen Guo, Kang Yen

Internetworking the Storage Area Networks

Stanislav Milanovic, Nikos Mastorakis

Room B

Time: 15:00-17:00

SESSION: Systems Theory

Chair: Cesar A. Coutipo

All the papers of this session are published in the pages 129 – 157 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

**Three Dimensional Centerline Reconstruction using Multiplane
Discrete Dynamic Curves**

Joeri Christiaens, Rik Van De Walle, Ignace Lemahieu

On a rational mapping of a polynomial system into a quadratic system

Konstantin Starkov

Internal Model Controller for Chaotic Systems

H. G. Gonzalez-Hernandez, F. Partida-Molina

**Algorithms for the solution of a special type of minimax problem in
integers**

Irma Lopez Saura, Piotr Marian Wisniewski, Gabriel Velasco Sotomayor

**Artificial Intelligence Methods in Processing and Diagnostics of the
Deformed Speech Signals**

Andrzej Izvorski, Ryszard Tadeusiewicz

Finite time synchronization of Lorenz-based chaotic systems

Leonardo Acho Zuppa, Cesar Cruz Hernandez, Ana Y. Aguilar Bustos

Coffee Break 17:00 – 17:30

Room A

Time: 17:30-19:30

SESSION: Artificial Intelligence

Chair: Gennadiy Burlak, N.Dimopoulos

All the papers of this session are published in the CD-ROM Proceedings and in the WSEAS TRANSACTIONS on SYSTEMS.

Heuristic Approaches for Solving the Multidimensional Knapsack Problem (MKP)

R. Parra-Hernandez, N. Dimopoulos

Numerical simulation of drift-diffusion traffic flow model

Hsun-Jung Cho, Shih-Ching Lo

Influence of the choice of histogram parameters at Fuzzy Pattern Matching performance

Moamar Sayed Mouchaweh, Patrice Billaudel

Genetic Algorithm to Compute Fuzzy FS-Testors

Francisco Martinez, Guillermo Sanchez, Bonifacio Rugerio

Room B

Time: 17:30-19:30

SESSION: Computer System and Soft Computing

Chair: Ivan Stojmenovic, Carlos Gamio

All the papers of this session are published in the pages 157 – 198 of the “Advances in Information Science and Soft Computing”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

Development of Virtual Environments for Mechanical Engineering

Antonio Valerio Netto, Maria Cristina Ferreira de Oliveira

Simulation of joint position response of 60 kg payload 4-axes SCARA configuration manipulator taking dynamical effects into consideration

S.N.Shome, G.Purkayastha, S.Datta, S.N. Nandy

The Best Evolutionary Solution to the Iterated Prisoner's Dilemma
Angel Fernando Kuri-Morales

**Power Transformer Fault Diagnosis Based on Dissolved Gas Analysis
Using a Fuzzy Neural Network Approach in a Real Data Base**
Michel B. Hell , Marcos F. S. V. D`Angelo and Pyramo P. Costa Jr

**State-of-the-art in coding systems by a geometrical and technological
approach**
Francisco Sandoval, Dante Dorantes

**Mg, Si and die geometry effects on the formability and the machinability
of recycled aluminium alloys**
George Demosthenous and Antonios Baldukas

20:30 - Banquet

Wednesday, May 15

Room A

Time: 09:00-11:00

SESSION: Systems Theory and Applications

Chair: Arturo Prieto Fuenlabrada

All the papers of this session are published in the pages 158 – 187 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

**SOM Neural Networks in Detection of Characteristic Features of
Brainstem Auditory Evoked Potentials (BAEP)**

Andrzej Izworki, Ireneusz Wochlik, Jaroslaw Bulka, Andrzej Paslawski

**Determination of primary features of ABR signals in intelligent system
aiding the auditory system diagnosis**

Jaroslaw Bulka, Ireneusz Wochlik, Janusz Kowal, Bania P. Andrzej Izworki

A Compact (m,n) Parallel Counter Circuit Based on Self Timed Threshold Logic

Peter Celinski, Jose Lopez, Said Al-Sarawi, Derek Abbott

A Compact Parallel Multiplication Scheme Based on (7,3) and (15,4) Self-Timed Threshold Logic Counters

Peter Celinski, Troy Townsend, Said Al-Sarawi, Derek Abbott, Jose F. Lopez

A Simplified Nonlinear State Estimator for Power Systems

Lee Lin

Software for Definition and Simulation of Fuzzy Controllers

M.C. Alba Maribel Sanchez Alvez, Lic. Arturo Rojas Lopez, Ricardo Alvarez Gonzalez

Room B

Time: 09:00-11:00

SESSION: Modern Information Systems I

Chair: Walter Dosch

All the papers of this session are published in the CD-ROM Proceedings and in the WSEAS TRANSACTIONS on SYSTEMS.

On minimal trellises of linear binary block codes

Roman Hoc, Peter Farkas, Sergio Herrera-Garcia

A dynamic bandwidth allocation mechanism for slotted ring networks

Luis Orozco Barbosa

Intellectual support of investment decisions based on a clustering of the correlation graph of securities

Izabella V. Lokshina

A String Representation Methodology to Generate Syntactically Valid Genetic Programs

Socrates Torres, Monica Larre, Jose Torres

Designing an Interactive Stack

Walter Dosch

Proposal for a New Sub-Optimal Decoding Algorithm for Block Codes in 8-PSK and 16-PSK Constellations

E. Wagner, W. Godoy Jr., E. C. G. Wille

Coffee Break 11:00 – 11:30

Room A

Time: 11:30-13:30

SESSION: Computational Intelligence I

Chair: Natalia Kalashnikova, Leonardo Acho

All the papers of this session are published in the pages 199 – 226 of the “Advances in Information Science and Soft Computing”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

A Comparative Study Between Vector and Matrix Representations of Chromosomes in TSP

Maria A. Osorio, Rosaliano Perez, Flaviano Perez

Autonomous Robot Navigation using Genetic Algorithms

F. Arambula Cosio, M. A. Padilla Castaneda

Divide and conquer in genetic algorithms: generating paths on heightfields

Ryan Myers, Bart Rylander

Optimal population size and the genetic algorithm

Stanley Gotshall, Bart Rylander

A Bound on GA Convergence Using Lyapunov-like Functions

Kurt Burnette, Bart Rylander

Neural Network Learning using Particle Swarm Optimizers

Matt Settles, Bart Rylander

Room B

Time: 11:30-13:30

SESSION: Hardware and System Analysis

Chair: Alexander Zemliak

All the papers of this session are published in the pages 188 – 218 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

March Test Algorithm for 3-Coupling Faults in Random Access

Memories

Cascaval Petru, Onea Alexandru

Internal structure optimization of high power pulsed IMPATT diodes

Alexander Zemliak, Carlos Celaya, Roque De La Cruz

Solution of classical non-linear systems using electronic macromodels

Arturo Prieto-Fuenlabrada, Boris Escalante-Ramirez, Joel Garcia-Delgado

On dynamic fragmentation of distributed databases using partial replication

David Pinto, Guadalupe Torres

Statistical parameters study of a surface doping simulation process

M. Echenique-Lima, S. Guel-Sandoval and Graciela R. Guel

New trajectory tracing method for express study of the evolution of non-linear systems

P.P. Horley, P.Yu. Vorobiev, P.M. Gorley, Yu.V. Vorobiev, J. Gonzalez-Hernandez

Room A

Time: 15:00-17:00

SESSION: Modeling and Simulation

Chair: Beniamino Castagnolo

All the papers of this session are published in the pages 219 – 250 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

Computer simulation of the optical radiation from coated microsphere with active core

Gennadiy Burlak, Oleg Starostenko

Attraction basins of non-linear differential equation set: determination of initial values of phase variables for correct integration of the system

Paul Horley, Pavel Vorobiev, Valentina Gorley, Yuri Vorobiev, Jesus Gonzalez-Hernandez

Computer Simulation of Biomolecular Systems. Hydration of DNA Fragments

Eduardo Gonzalez, Alexandra Deriabina, Valery Poltev

Computer Simulation of Biomolecular Interactions Involved in Genetic Processes.

Valery Poltev, Alexandra Deriabina, Eduardo Gonzalez

A Solid Model Comparison approach based on a model tree analysis

Jean-francois Chatelain, Roland Maranzana, Serge St-martin

Controllable shock and vibration dampers based on magnetorheological fluids

Ulrich Lange, Svetla Vassileva, Lothar Zipser

Room B

Time: 15:00-17:00

SESSION: Computational Intelligence II

Chair: Angel Kuri-Morales

All the papers of this session are published in the pages 227 – 253 of the “Advances in Information Science and Soft Computing”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings. The last paper is published in CD-ROM Proceedings and in WSEAS TRANSACTIONS on SYSTEMS.

Building transitive groups in computer-supported collaborative learning using fuzzy clustering

Jose C. Romero Cortes, Gustavo Nunez Esquer, Arturo Aguilar Vazquez

An Application of Linear Programming in Cluster Analysis

Piotr Marian Wisniewski , Irma Lopez Saura , Gabriel Velasco Sotomayor

Enhancement Of Lempel-Ziv Coding Using A Predictive Pre-Processor Scheme for Data Compression

Rajasvaran Logeswaran

Indoor Propagation of Bluetooth Waves, Effect of Distance on Bluetooth Data Transmission, and Simulation of Wave Propagation

Panu Ali-Rantala, Mikko Keskilammi, Lauri Sydanheimo, Markku Kivikoski

Parallelizing Infinite Impulse Response Filters

Rachid Benlamri

Optimal Model Parameters Extraction for Semiconductor Device

Simulation with a Genetic Algorithm

Yiming Li, Cheng-Kai Chen, Chuen-Tsat Sun

Coffee Break 17:00 – 17:30

Room A

Time: 17:30-20:00

SESSION: Solid State Electronics, Solar Cells, Optics

Chair: Argyrios Varonides, Mario Lehman

All the papers of this session are published in the CD-ROM Proceedings. The first two papers are also published in the pages 290-298 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings

Directional Self-similarity in the Superposition of Cantor Transmittances

Diana Calva Mendez, Mario Lehman

Scaling in the Fraunhofer Region from Gratings with Complex Structure

Diana Calva Mendez, Mario Lehman

Planning in multi-agent environment as inverted STRIPS planning in the presence of uncertainty

Adam Galuszka, Andrzej Swierniak

Computer Simulations of a P (Al_{0.30}Ga_{0.70}As)-I (GaAs)-N(GaAs) Solar Cell

Argyrios Varonides

High Open Circuit Voltage of MQW Amorphous Silicon Photovoltaic Structures

Argyrios Varonides

Tunneling Conductivity of III-V Multiquantum Well P-I-N Photovoltaic Heterostructures by Means of the Causal Green's Function

Argyrios Varonides

Tunneling Assisted Photo-Conductivity For Novel High Efficiency p-i-n MQW Solar Cells

Argyrios Varonides

Fermi Level Control and Thermal Current Densities in Selectively Doped P-I-N Multiquantum Well Photovoltaic Structures, Under Illumination

Argyrios Varonides

Explicit Derivation of Dark Thermionic Current Densities in III-V Multiquantum Well Infrared Photodetectors

Argyrios Varonides

Room B

Time: 17:30-20:00

SESSION: Control Systems

Chair: Jose Ignacio Ascenio Lopez

All the papers of this session are published in the pages 251 – 289 of the “Advances in Systems Theory, Mathematical Methods and Applications”, WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings. The last paper of the session is published in the pages: 254-259 of the “Advances in Information Science and Soft Computing” WSEAS Press Post-Conference Book as well as in the CD-ROM Proceedings.

A computerized small size fatigue testing machine for composite material experimental characterization

George Demosthenous, Costas Kyriakou, Antonis Baldoukas

Wearing test on copper coated in diamond by triboadhesion

J.M. Rodriguez Lelis, J. Colin O, J. Porcayo Calderon, B.D. Angulo

Artificial Neural Networks in the Automatic License Plate Recognition

Ascenio Lopez José Ignacio, Ramirez Martinez José Maria

Read Range Analysis of Passive RFID Systems for Manufacturing Control Systems

M. Keskilammi, L. Sydanheimo, P. Salonen, M. Kivikoski

Adaptive Antenna Control System for RFID Reader

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Trigonometric Saturated Controller for Robot Manipulators

Fernando Reyes, Jorge Barahona, Eduardo Espinosa

Experimental realization of binary signals transmission based on synchronized lorenz circuits

Cornelio Posadas-Castillo, Cesar Cruz-Hernández, Ricardo Nupez-Perez

Methodology for Selecting Manufacturing Automated Systems

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