

**2008 IEEE International Conference on
Automation, Quality and Testing, Robotics**

PROGRAM



**IEEE – Institute of Electrical and
Electronics Engineers**



**Computer Society – Test
Technology Technical
Council**



**Technical University of
Cluj-Napoca, Romania,
Department of
Automation**



**IPA - R&D Institute for
Automation,
Center for Technology
Transfer,
Cluj-Napoca, Romania**

FOREWORD

It's our great pleasure to welcome you at the 16th edition of the **2008 IEEE International Conference on Automation, Quality and Testing, Robotics AQTR 2008 - THETA 16th edition.**

The conference follows the tradition of the 15 automation and testing related scientific events, organized in Cluj-Napoca since 1982 under the name THETA- Technologies and Automation Testing. The previous edition – “2006 IEEE –TTTC International Conference on Automation, Quality and Testing, Robotics” has demonstrated the importance of Automation, Quality and Testing, Robotics as part of continuous advancing technologies. A large variety of papers were presented and provided good opportunities for the participants to exchange ideas and share new advancements registered in the field of automation, quality and testing.

This is the 5th edition of the Conference, organized under IEEE Computer Society – TTTC (Test Technology Technical Council) aegis, and reflects the faithful cooperation between Technical University of Cluj-Napoca, Department of Automation and IPA SA - R&D Institute for Automation.

Starting with this edition a new topic is introduced - “Networking and services quality and security” - representing an important subject in today's technical field due to the great demand of reliable delivery of large amounts of data and also availability of consistent bandwidth.

This conference would not have been possible without the hard work of the members of the Technical Program Committee - selecting over 250 papers out of 337 regular submissions. We also need to thank all the reviewers who provided us with such valuable feedback on the submissions.

The AQTR Conference covers a wide range of topics, gathering a community of engineers, academics and researchers. Altogether we received feedback from almost 900 different authors. We have more than 200 registered participants, from all over the world, renowned names in their fields of specialty, making this conference a major international scientific event.

All these being said we hope that you enjoy our Conference and it will provide you with new concepts and ideas for the future “knowledge-based society”.

“To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science”
[Albert Einstein]

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Ioan Stoian

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- IEEE Computer Society – Test Technology Technical Council
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- IPA – R&D Institute for Automation, Centre for Technology Transfer Cluj-Napoca

Sponsors

- Romanian Government – National Authority for Scientific Research
- Thomson France
- SRAIT - The Romanian Society of Control Engineering and Technical Informatics
- Romanian Academy for Technical Sciences

TIME TABLE

Thursday, May 22

Technical University of Cluj-Napoca, 26- 28 Baritiu Street*

Tutorials

10:00 - 13:00 **T1** Adit D. Singh - *Auburn University, USA* Room: 40
 10:00 - 13:00 **T2** Sergiu Iliescu, Ioana Făgărășan - *Politechnica University of Bucharest, Romania* Room: 356

13:00 - 14:30 Lunch - *Sport Hotel, Gheorghe Cosbuc Street 15, Cluj-Napoca (full package)*

Casa de cultura a studentilor (Students Cultural House – 3rd floor), P-ta. Lucian Blaga, nr. 1-3, Cluj-Napoca**

13:00 - 15:00 **Registration**
 15:00 - 16:15 **Conference opening** Room: *Europa*
 16:15 - 16:30 *Coffee break*
 16:30 - 18:00 **PLENARY SESSION I** Room: *Europa*
 20:00 **Cocktail** – *Gilau Motel, (Cluj area), free transport for AQTR registered participants*

Note:

In order to participate to the cocktail at Motel Gilau, the registered participant will be offered free transportation as follows:

- 19:30- in the parking place located behind the Commerce, Industry and Agriculture Chamber for the participant which are accommodated at Casa Alba Hotel, Astoria Hotel and Picola Italia Hotel.
- 19:40- in front of the City Plaza Hotel
- 19:30- In the Hotel Sport parking place
- 19:45- Departure to the cocktail towards Motel Gilau (*see map from 2nd Program's cover*)

Friday, May 23

Technical University of Cluj-Napoca, 26- 28 Baritiu Street

9:00 - 10:00 **PLENARY SESSION II** Room: 40

10:00 -10:15 *Coffee break*

Session I

10:15 - 11:45 **Session C-S1** Control System Room: 40
 10:15 - 11:45 **Session T-S1** Testing Room: 41
 10:15 - 11:45 **Session R-S1** Robotics Room: F
 10:15 - 11:45 **Session N-S1** Networking and services quality and security Room: 356
 10:15 - 11:45 **Session H-S1** Quality of life and e-health Room: E15
 10:15 - 11:45 **Session A-S1** Quality of experiments and applications Room: 359

11:45 -12:00 *Coffee break*

12:00 - 13:00 **PLENARY SESSION III** Room: 40

13:00 - 14:30 Lunch - *Sport Hotel, Gheorghe Cosbuc Street 15, Cluj-Napoca (full package)*

IPA CIFATT Cluj Subsidiary, 15 Zorilor Street***

15:30 - 18:30 **IPA Forum: Sessions, Multimedia session, Poster session, Round table**

Session II

15:30 - 17:00 **Session N - S2** Networking and services quality and security *IPA meeting room*
 15:30 - 16:15 **Multimedia Session 1 – C-M1** Control systems *IPA Showroom*
 16:45 - 17:00 **Multimedia Session 2 – R-M1** Robotics *IPA Showroom*

16:45 - 17:00	Multimedia Session 2 – H-M1	Quality of life and e-health	IPA Showroom
17:00 - 17:45	Multimedia Session 3 – A-M1	Quality of experiments and applications	IPA Showroom
17:45 - 18:30	Multimedia Session 4 – A-M2	Quality of experiments and applications	IPA Showroom
15:30 - 16:15	Poster Session 1		IPA Showroom
16:15 - 17:00	Poster Session 2		IPA Showroom
17:15 - 17:45	Poster Session 3		IPA Showroom
17:45 - 18:30	Poster Session 4		IPA Showroom
19:00	<i>Dinner - Sport Hotel, Gheorghe Cosbuc Street 15, Cluj-Napoca</i>		

Saturday, May 24

Technical University of Cluj-Napoca, 26- 28 Baritiu Street

Session III

9:00 - 10:30	Session C – S2	Control systems	Room: 40
9:00 - 10:30	Session T – S2	Testing	Room: 41
9:00 - 10:30	Session R – S2	Robotics	Room: F
9:00 - 10:30	Session N – S3	Networking and services quality and security	Room: 356
9:00 - 10:30	Session H – S2	Quality of life and e-health	Room: E15
9:00 - 10:30	Session A – S2	Quality of experiments and applications	Room: 359

10:30 -10:45 *Coffee break*

Session IV

10:45 - 12:15	Session – C-S3	Control systems	Room: 40
10:45 - 12:15	Session – C-S4	Control systems	Room: F
10:45 - 12:15	Session – T-S3	Testing	Room: 41
10:45 - 12:15	Session – T-S4	Testing	Room: 356
10:45 - 12:15	Session – H-S3	Quality of life and e-health	Room: E15
10:45 - 12:15	Session – A-S3	Quality of experiments and applications	Room: 359

12:15 -12:30 *Coffee break*

9:00 - 10:30	Student Forum	Room: E17
10:45 - 12:15	Student Forum	Room: E17

IPA CIFATT Cluj Subsidiary, 15 Zorilor Street

IPA Forum: Multimedia session, Poster session

9:00 - 9:45	Multimedia Session 5 – C- M2	Control systems	IPA Showroom
9:45 - 10:30	Multimedia Session 6– T- M1	Testing	IPA Showroom
10:30 - 11:15	Multimedia Session 7 – A- M3	Quality of experiments and applications	IPA Showroom
11:15 - 12:00	Multimedia Session 8 – A- M4	Quality of experiments and applications	IPA Showroom
9:00 - 9:45	Poster Session 5		IPA Showroom

12:30 - 13:30 **PLENARY SESSION IV. Closing session** Room: 40

13:30 - 15:00 *Lunch - Sport Hotel, Gheorghe Cosbuc Street 15, Cluj-Napoca (full package)*

* Near Central Park and Hungarian Theatre – 3 minutes walk

** From main Unirii Square (Matei Corvin Statue) - 5 minutes walk

*** Opera bus station, bus lines 46, 35 towards "Ghe. Dima" ("Gheorghe Dima") - 4 bus stops+7 minutes walk

AQTR 2008 – CONFERENCE UNFOLDING

Thursday, 22nd May

Technical University of Cluj-Napoca, 26-28 G. Baritiu

Thu, May 22 10:00 - 13:00	Tutorials	
	Statistical Screening Methods Targeting "Zero Defect" IC Quality and Reliability , Adit D. Singh (<i>Auburn University, USA</i>)	Room 40
	Control of Power Systems. Concepts and Implementation , Sergiu Iliescu, Ioana Făgărășan (<i>University of Bucharest, Romania</i>)	Room 356

Sport Hotel, Gheorghe Cosbuc Street 15, Cluj-Napoca

Thu, May 22 13:00 – 14:30	Lunch	
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Casa de Cultura a Studentilor (Student Cultural House– 3rd floor), P-ta. Lucian Blaga, nr. 1-3

Thu, May 22 13:00 - 15:00	Registration	Hall of Europa Room
Thu, May 22 15:00 - 16:15	Conference Opening	Room Europa

Welcome speech: Liviu Miclea, Ioan Stoian.

15:10 – 15:30 **TTTC present and future**, presented by Adit Singh, Auburn University, USA, Chair of IEEE Test Technology Technical Council

15:30 – 16:15 **ICT Research in the Framework Programme: results, trends and prospects on Networks and Media**, presented by Luis Rodríguez-Roselló, Head of Unit Networked Media Systems, DG Information Society & Media, European Commission

Thu, May 22 16:15-16:30	Coffee break	
Thu, May 22 16:30 - 18:00	PLENARY SESSION I	Europa Room

16:30-17:00 **Complexity by Intelligent Systems**, Ioan Dumitrache (*Romanian Academy*)

17:00 – 17:30 **Teleoperated Abdominal and Fetal echography in several medical centres, from one expert center, using a robotic arm & telephone or satellite link**, Philippe Arbeille, Medecine Physiologie Spatiale (*University of Tours, France*)

17:30 – 18:00 **Two complementary approaches to test robustness of reactive systems**, Antoine Rollet (*University of Bordeaux, France*)

Gilau Motel – Cluj-Napoca area

Thu, May 22 20:00	Cocktail	
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Friday, 23rd May

Technical University of Cluj-Napoca, 26 - 28 Baritiu Street

Fri, May 23
9:00 - 10:00

Plenary session II

From Chipless to Systems of Systems on Chip in 50 Years: How did and will IC Test Technology keep up?

André Ivanov, Professor, Department of Electrical and Computer Engineering (*University of British Columbia, Canada*)

Room 40

Fri, May 23
10:00 - 10:15

Coffee Break

Fri, May 23
10:15 - 11:45

Sessions I

C-S1 Control systems

Room 40

Chairs

S. Preitl, Politehnica University of Timisoara, Romania

T. Coloși, Technical University of Cluj-Napoca, Romania

C-S1 - 1 **The Identification and Robust Control of a Biological Wastewater Treatment Process**

Sergiu Caraman, Marian Barbu (*"Dunarea de Jos" University of Galati, Romania*)

C-S1 - 2 **Level Control of Pumped-Storage Hydro Power Plants**

Matei Vinatoru (*University of Craiova, Romania*)

C-S1 - 3 **On the Combination of Tensor Product and Fuzzy Models**

Radu-Emil Precup, Stefan Preitl, Bogdan-Ioan Ursache, Petru Alexandru Clep, Peter Baranyi, Jozsef K. Tar (*Politehnica University of Timisoara, Romania, Hungarian Academy of Sciences, Budapest Tech Polytechnical Institution, Hungary*)

C-S1 - 4 **Near Real-Time Monitoring of the Ionosphere Using Dual Frequency GPS Data in a Kalman Filter Approach**

Adela Anghel, Adina Astilean, Tiberiu Letia, Attila Komjathy (*University of Colorado and Space Weather Prediction Center USA, Technical University of Cluj-Napoca, California Institute of Technology, California, USA*)

C-S1 - 5 **State Feedback Design with CWEAS Constraints**

Octavian Pastravanu, Mihaela Matcovschi (*Technical University "Gh. Asachi" of Iasi, Romania*)

C-S1 - 6 **Constraints-based Motion Planning for an Automatic, Flexible Laser Scanning Robotized Platform**

Theodor Borangiu, Anamaria Dogar, Alexandru Dumitrache (*University Politehnica of Bucharest, Romania*)

C-S1 - 7 **DSP Based Controller for Battery Charging System**

Radu Duma, Petru Dobra, Mihail Abrudean, Dorin Petreus (*Technical University of Cluj-Napoca, Romania*)

C-S1 - 8 **State Estimation Based on Kalman Filtering Techniques in Navigation**

Levente Tamas, Gheorghe Lazea, Radu Robotin, Cosmin Marcu, Zoltan Szekely (*Technical University of Cluj-Napoca, Romania, Purdue University, USA*)

T-S1 Testing

Room 41

Chairs

A. Rollet, University of Bordeaux, France
G.di Natale, LIRMM Montpellier, France

- T-S1 - 1 **Supply Voltage Reduction in SRAMs: Impact on Static Noise Margins**
Elena Ioana Vatajelu, Joan Figueras (*Universitat Politecnica de Catalunya, Spain*)
- T-S1 - 2 **Reliability Analysis of Tree Networks Applied to Balanced Content Replication**
Mugurel Ionut Andreica, Nicolae Tapus (*Polytechnic University of Bucharest, Romania*)
- T-S1 - 3 **March Test BDN: A new March Test for Dynamic Faults**
Alberto Bosio, Giorgio Di Natale (*LIRMM, France*)
- T-S1 - 4 **An Analytical Method for Fault Detection and Isolation**
Eugen Iancu (*University of Craiova, Romania*)
- T-S1 - 5 **Some New Memoryless Behavioural Models of Wireless transmitter solid state power amplifiers**
Serban Meza, Mairtin O'Droma, Yiming Lei, Anthony Goacher (*Technical University of Cluj-Napoca, Romania, University of Limerick, Ireland*)
- T-S1 - 6 **Parity Equations for Fault Detection and Isolation**
Ioana Fagarasan, Sergiu Iliescu (*Politehnica University of Bucharest, Romania*)
- T-S1 - 7 **Agent Based Testing and Repair of Heterogeneous Distributed Systems**
Szilard Enyedi, Liviu Miclea, Iulia Stefan (*Technical University of Cluj-Napoca, Romania*)

R-S1 Robotics

Room F

Chairs

G. Carbone, University of Cassino, Italy
G. Lazea, Technical University of Cluj-Napoca, Romania

- R-S1 - 1 **An Experimental Characterization of Earthquake Effects on Mechanism Operation**
Marco Ceccarelli, Erika Ottaviano, Codrin Florea, Tiberiu Itul, Adrian Pisla (*University of Cassino, Italy, Technical University of Cluj-Napoca, Romania*)
- R-S1 - 2 **Design of LARM Hand: problems and solutions**
Giuseppe Carbone, Marco Ceccarelli (*University of Cassino, Italy*)
- R-S1 - 3 **WMR Navigation Using Local Potential Field Corridors and Narrow Local Occupancy Grid Perception**
Lluís Pacheco, Xavier Cufí, Ningsu Luo, Javier Cobos (*University of Girona, Spain*)
- R-S1 - 4 **Knowledge Integration within an Applied Mobile Robot Summer Course**
Lluís Pacheco, Xavier Cufí, Ningsu Luo, Inès Ferrer (*University of Girona, Spain*)
- R-S1 - 5 **An Application of Multi-Modal Human-Computer Interaction-The Chess Player Turk2**
Levente Sajó, György Kovács, Attila Fazekas (*University of Debrecen, Hungary*)

- R-S1 - 6 **Self-reconfiguring Modular Robot**
Constantin Nitu, Bogdan Gramescu, Smaranda Nitu, Constantin Daniel Comeaga (*University Politehnica of Bucharest, Romania*)
- R-S1 - 7 **Remote Control of a Multirobot Infrastructure for E-Learning Training Sessions**
Theodor Borangiu, Florin Daniel Anton, Silvia Anton, Nick Ivanescu (*University Politehnica of Bucharest, Romania*)

N-S1 Networking and services quality and security

Room 356

Chairs

D. Negru, VIOTECH Communications, France
M. Sidibé, University of Versailles, France

- N-S1 - 1 **Energy Saving Strategy for Video-based Wireless Sensor Networks Under Field Coverage Preservation**
Dan Pescaru, Codruta Istin, Daniel Curiac, Alex Doboli (*Politehnica University of Timisoara, Romania, State University of New York at Stony Brook, USA*)
- N-S1 - 2 **A Closed-loop Transmission Control Mechanism for Satellite Interactive Services**
Georgios Gardikis, Doina Breaban, Stelian Brad, Anastasios Kourtis (*NCSR, Greece, Media Zelsil SRL, Technical University of Cluj-Napoca, Romania*)
- N-S1 - 3 **Adaptation platform for Autonomic Context-Aware Services**
Marcel Cremene, Michel Riveill, Costin Miron (*Technical University of Cluj-Napoca, Romania, Universite de Nice - Sophia Antipolis, France*)
- N-S1 - 4 **Self organizing Bluetooth networks for the Packaging Industry**
Iulian Octavian Maga (*Robert Bosch GmbH, Germany*)
- N-S1 - 5 **Web-service based implementation of a Network Service Manager at Network Provider**
Serban Georgica Obreja, Eugen Borcoci, Radu Lupu, Mihai Stanciu (*University "Politehnica" Bucharest, Romania*)
- N-S1 - 6 **Video Quality Optimisation in the Context of DVB-H Mobile Television**
Pierre Bretilon (*TDF, France*)
- N-S1 - 7 **IFEA-M Modifications Resistant to Differential Attack**
Alexander Chefranov (*Eastern Mediterranean University, Turkey*)
- N-S1 - 8 **Content Handling and Content Protection under e2e QoS Distribution**
Itzik Arbel, Alex Chernilov (*Optibase, Israel*)

H-S1 Quality of life and e-health

Room E15

Chairs

G. Spiridon, SC IPA SA, Bucharest, Romania
V. Rocha, Instituto Agilus de Inovação em Tecnologia de Informacao, S.A, Portugal
H. Ștefănescu, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania

- H-S1 - 1 **Wearable computing for patients with coronary diseases**
Válter Rocha, Ricardo Seromenho, João Correia, Alessandro Mascioletti, Alfredo Picano, Gil Gonçalves (*Instituto Agilus de Inovação em Tecnologia de Informacao, S.A., LABOR, Informatics Engineering Department, University of Porto, Portugal*)

- H-S1 – 2 **Preliminary results on using an extension of gradient method for detection of red lesions on eye fundus photographs**
Petrica Badea, Daniela Danciu, Livia Davidescu (*University of Medicine and Pharmacy, Craiova, University of Craiova, Universitary Hospital Craiova, Romania*)
- H-S1 – 3 **MR compatible actuation for medical instrumentation**
Bogdan Cristian Vigaru, Doru Petrisor, Alexandru Patriciu, Dumitru Mazilu, Dan Stoianovici (*Johns Hopkins University, McMaster University, National Institutes of Health, Canada*)
- H-S1 – 4 **Postoperative risk classification of prostate cancer patients using support vector machines**
Ovidiu Dancea, Mihaela Gordan, Mihaela Dragan, Ioan Stoian, Sergiu Nedevschi (*IPA SA Cluj Subsidiary, Technical University of Cluj-Napoca, Romania*)
- H-S1 - 5 **Heart Rate Variability Assessment – Physiological and Pathological Aspects**
LD Rusu, L. Poanta, Cristina Hotoleanu, Lucica Coldea, Dan D. Zdrenghea, L. Dumitrascu, (*University of Pharmacy and Medicine Iuliu Hatieganu Cluj-Napoca*)
- H-S1 – 6 **Method for the Analysing of Blood Glucose Dynamics in Diabetes Mellitus Patients**
Ionela Iancu, Maria Mota, Eugen Iancu (*University of Medicine and Pharmacy of Craiova, University of Craiova, Romania*)
- H-S1 - 7 **Hybrid Model for Spreading of Avian Influenza**
Adina Pop, Camelia Avram, Honoriu Valean (*Technical University of Cluj-Napoca, Romania*)

A-S1 Quality of experiments and applications

Room 359

Chairs

M. Gordan, Technical University of Cluj-Napoca, Romania
A. Florescu, Politehnica University of Bucharest, Romania

- A-S1 - 1 **Streetlight Monitoring and Control System. Part I: System Structure**
Constantin Iordache, Stefan Gavai, Constantin Mada, Dumitru Stanciu, Costica Holban (*SC IPA SA, UPB-Electronica si Tc., SC Electrotehnica Echipamente Electrice SRL, Romania*)
- A-S1 - 2 **Application of Fourier Method in Energetics, for Root-Mean-Square Value and Phase Shift Measurement**
Dorina Purcaru, Ion Purcaru, Cornelia Gordan, Elena Niculescu, S.D. Nedelcut (*University of Craiova, VIG Impex Craiova, University of Oradea, RDTNIEE Craiova, Romania*)
- A-S1 - 3 **SmartModels – An MDE Platform for the Management of Software Product Lines**
Emanuel Tundrea (*Politehnica University of Timisoara, Romania*)
- A-S1 - 4 **Reference Values for Three Phase Active Power Filter**
Adriana Florescu, Dumitru Stanciu, Dan Alexandru Stoichescu, Constantin Radoi (*University Politehnica of Bucharest, Romania*)
- A-S1 - 5 **Improving SMEs Business Environment Using Innovative ICT Technologies**
Gabriel Spiridon, Daniel Dichiu (*SC IPA SA, Romania*)
- A-S1 - 6 **Computer Vision Based Decision Support Tool for Hydro-dams Surface Deterioration Assessment and Visualization using Fuzzy Sets and Pseudo-coloring**
Mihaela Gordan, Ovidiu Dancea, Aurel Vlaicu, Ioan Stoian, Odysseas Tsatos (*Technical University of Cluj-Napoca, S.C. IPA S.A. CIFATT Cluj-Napoca, Romania, ALBIODATA S.A Information Systems – Consulting, Greece*)

A-S1 - 7 **Part Load Operation and Heat Recovery Optimization in Cogeneration Units with Diesel Engines**
Slawomir Smolen (*University of Applied Sciences Bremen*)

A-S1 - 8 **Design, Modeling, Simulation and Implementation of a Switching Power Supply**
Adriana Florescu, Dumitru Stanciu, Dan Alexandru Stoichescu, Constantin Radoi (*University Politehnica of Bucharest, Romania*)

Fri, May 23
11:45 - 12:00 **Coffee break**

Fri, May 23
12:00 - 13:00 **Plenary session III**

Sensing the World: Challenges on WSNs,
Válter Rocha (*Instituto Agilus de Inovação em Tecnologia de Informacao, S.A., Portugal*) Room 40

Sport Hotel, Gheorghe Cosbuc Street 15, Cluj-Napoca

Fri, May 23
13:00 - 14:30 **Lunch**

Fri, May 23
15:30 - 18:30 **Sessions II**

N-S2 Networking and services quality and security IPA meeting room

Chairs

O. Negru, Thomson, France
P. Amon, Siemens AG, Germany

N-S2 - 1 **Leveraging community standards for wide compatibility in Digital Item distribution**
Adam T. Lindsay, David Hutchison (*Lancaster University, UK*)

N-S2 - 2 **P2P-based Collaborative Media Streaming for Heterogeneous Network Terminals**
Mubashar Mushtaq, Toufik Ahmed (*University of Bordeaux, France*)

N-S2 - 3 **Scalable Video Coding and Transcoding**
Peter Amon, Haoyu Li, Andreas Hutter, Daniele Renzi, Stefano Battista (*Siemens AG, Germany, bSoft ltd*)

N-S2 - 4 **A QoS Provisioning Framework for Wireless Mesh Network**
Chiang Kang Tan, Abolghasem (Hamid) Asgari, Edward Stansfield (*Thales Research and Technology, UK*)

N-S2 - 5 **Using MPEG-21 and Web Services to achieve end-to-end QoS management**
M. T. Andrade, P. F. Souto (*Faculty of Engineering of the University of Porto, Portugal*)

N-S2 - 6 **Adoption of the MPEG-21 Digital Broadcast Item Model (DBIM) towards QoS Metadata Management**
Artur Lugmayr, Margarida Igreja, Bjoern Stockleben, Helder Castro, Ingo Wolf, Bernhard Feiten, Pekka Vorne, José Manuel Castro Torres (*Tampere University of Technology, Finland, INESC Porto, Portugal, Rundfunk Berlin Brandenburg, T-Systems Intl., Germany*)

C-M1 Control systems

IPA showroom

Chairs

E. Dulf, Technical University of Cluj-Napoca, Romania
R. Meza, ANCS Romania, Romania

- C-M1 - 1 **Modular Control System for a Magnetic Levitated Stage**
Mitica Caraiani, Jeong-woo Jeon, Hyeon-seok Oh (*Korea Electrotechnology Research Institute, Korea*)
- C-M1 - 2 **Simulation of a Fuzzy-PD Learning Control System**
Duka Adrian-Vasile, Abrudean Mihail (*"Petru Maior" University of Tg. Mures, Technical University of Cluj Napoca, Romania*)
- C-M1 - 3 **Nonlinear Control System for a Θ -r Manipulator: A Sliding Mode Strategy Approach**
Florin Moldoveanu, Dan Floroian, Cristian Boldisor (*Transilvania University of Brasov, Romania*)
- C-M1 - 4 **3D Control System of the Electron Beam Spot**
Stelian Emilian Oltean, Mihail Abrudean (*"Petru Maior" University of Targu Mures, Technical University of Cluj Napoca, Romania*)
- C-M1 - 5 **Efficient Renewable Energy Systems Exploitation Aiming at Reducing Electricity Generation from Conventional Power Plants**
Silvian Fara, Dumitru Finta, Mihai Iancu (*SC IPA SA Bucharest, Romania*)
- C-M1 - 6 **Flooding Process Analysis by 13C Cryogenic Separation Column**
Clement Festila, Cristina-Ioana Pop, Eva-Henrietta Dulf, Aurel Baldea, Mihai Gligan (*Technical University of Cluj-Napoca, National Institute of Research and Development for Isotopes and Molecular Technologies Cluj Napoca, Romania*)
- C-M1 - 7 **Sampling Jitter Compensation for Numeric PID Controllers**
Daniel Niculae, Plaisanu Claudiu (*SC IPA SA, Romania*)
- C-M1 - 8 **Flux Identification for Vector Control of the Synchronous Motor Drives**
Ioan Iov Incze, Csaba Szabó, Maria Imecs (*Technical University of Cluj Napoca, Romania*)
- C-M1 - 9 **Implementation of a load control method for the improvement of the efficiency of a fuel cell, based on the hardware-in-the-loop technique**
Radu Calin Donca, Horia Balan, Sorin Besoiu, Radu Balan (*Technical University of Cluj-Napoca, Romania*)
- C-M1 - 10 **Modeling and simulation of a variable speed air-conditioning system**
Marius Constantin Popescu, Anca Petrisor, Mircea Adrian Drighiciu (*University of Craiova, Romania*)
- C-M1 - 11 **The Systematic Analysis of the Absorbed Power in D.C. Networks with Modifiable Parameters Using a New Mathematic Algorithm**
Horia Andrei, Fanica Spinei, Costin Cepisca, Ion Caciula, Paul Cristian Andrei (*Valahia University of Targoviste, University Politehnica of Bucharest, Romania*)
- C-M1 - 12 **Modeling, Simulation and Control for an Underground Roof Support as Two Robotic Arms**
Emil Pop, Monica Leba, Vali-Chivuta Sirb, Alin George Badea (*University of Petrosani, Romania*)

C-M1 – 13 **A Variant of Modelling and Numerical Simulation for the Automatic Control of Noxes**
Livia Buzdugan (*SC Sistec Sbsol Cluj Napoca, Romania*)

Fri, May 23
16:45 - 17:00

Multimedia Session 2

R-M1 Robotics

IPA showroom

Chairs

M. Nițulescu, University of Craiova, Romania
O. Căpățînă, IPA Cluj-Napoca, Romania
L. Neamțiu, Oncological Institute Cluj-Napoca, Romania

- R-M1 - 1 **Theoretical Aspects in Wheeled Mobile Robot Control**
Mircea Nitulescu (*University of Craiova, Romania*)
- R-M1 - 2 **Design of the Mobile Minirobots Structures**
Mihai Olimpiu Tatar, Dan Silviu Mandru (*Technical University of Cluj-Napoca, Romania*)
- R-M1 - 3 **Industrial Robot Controller using Miniature Computers**
Cosmin Marcu, Gheorghe Lazea, Radu Robotin, Sorin Herle, Levente Tamas (*Technical University of Cluj-Napoca, Romania*)
- R-M1 - 4 **Control Techniques for a Holonic Manufacturing Platform with Multiple Robots**
Claudiu Plaisanu, Daniel Niculae, Radu Sora, L. Cerban, Vasile Danut Clapa, (*SC IPA SA, Bucharest, Advantage Title Solutions SRL, Romania*)
- R-M1 - 5 **Researches Regarding the Dynamic Model of the Serial Modular Portal Robot with TRTTT Structure using the Newton-Euler formalism**
Ioan Ovidiu Costin, Iulia Costin (*Technical University Cluj-Napoca, Romania*)
- R-M1 - 6 **Contributions to the Geometric and Kinematics Modeling of Serial Modular Portal Robots with TRTTR Structure**
Iulia Costin, Ioan Ovidiu Costin (*Technical University Cluj-Napoca, Romania*)
- R-M1 - 7 **Rapid Control Prototyping using Matlab and dSpace. Application for a planar parallel robot**
Ciprian Lapusan, Vistrian Maties, Radu Balan, Sergiu Stan, Olimpiu Hancu (*Technical University of Cluj Napoca, Romania*)

H-M1 Quality of life and e-health

IPA showroom

Chairs

M. Nițulescu, University of Craiova, Romania
O. Căpățînă, IPA Cluj-Napoca, Romania
L. Neamțiu, Oncological Institute Cluj-Napoca, Romania

- H-M1 - 1 **Evaluation of Groundwater Contamination and Protection Measures in a Rural Area**
Daniela Curseu, Monica Popa, Dana Sirbu, Zaharie Moldovan (*University of Medicine and Pharmacy Cluj-Napoca, National Institute of Research and Development for Isotopic and Molecular Technology, Cluj-Napoca, Romania*)
- H-M1 - 2 **A hierarchical implementation of medical data transmission**
Mihai Munteanu, Corneliu Rusu, Dan Rafiroiu, Gabriel Chindris, Radu Adrian Munteanu, Rozica Moga (*Technical University of Cluj-Napoca, Romania*)
- H-M1 - 3 **Information System for the Management of the Health Services in Romania**
Adrian Badoiu, Sanda Petrescu, Vasilica Vlad, Alexandru Botu (*IPA S.A. Bucharest, Romania*)

- H-M1 - 4 **Decisional system for treatment response monitoring on genital neoplasia patients**
Claudiu Plaisanu, Cristina Stefan, Cristina Ogescu, Daniel Bistriceanu, A. Enache (*IPA S.A. Bucharest, Romania*)
- H-M1 - 5 **Computed study of shoulder dynamics - Kinematics and dynamic analysis of shoulder movement**
G. Tomoaia, H. Benea, L. Miclea (*University of Medicine and Pharmacy Cluj-Napoca, Technical University of Cluj-Napoca, Romania*)
- H-M1 - 6 **Current Trends in Medical Imaging Acquisition and Communication**
Adina Stoian, Razvan Ivan, Alexandra Marichescu (*L'Hospital de Leman, France, SC IPA SA Cluj-Napoca Subsidiary, Romania*)
- H-M1 - 7 **The Map Building for Pandemic Simulation**
Vasile Prejmerean, Milton Frentiu, Vasile Cioban, Ovidiu Ghiran (*Babes-Bolyai University of Cluj-Napoca, SC IPA SA Cluj-Napoca Subsidiary, Romania*)

Fri, May 23
17:00 - 17:45

Multimedia Session 3

A-M1 Quality of experiments and applications

IPA showroom

Chairs

M. Ţopa, Technical University of Cluj-Napoca, Romania
S. Folea, Technical University of Cluj-Napoca, Romania

- A-M1 - 1 **Software Platform for Supporting Open Innovation**
Stelian Brad, Mircea Fulea, Bogdan Mocan, Adina Duca, Emilia Brad (*Technical University of Cluj-Napoca, Romania*)
- A-M1 - 2 **On Neural Networks and the future of Spam**
Catalin Cosoi, Madalin Vlad, Valentin Sgarciu, (*University Politehnica of Bucharest, Romania*)
- A-M1 - 3 **Improving Conceptual Search Results Reorganization Using Term-Concept Mapping Retrieved from Wikipedia**
Christian Sacarea, Radu-Mihai Meza, Mircea Cimpoi (*"Babes-Bolyai" University, Cluj-Napoca, Romania*)
- A-M1 - 4 **Functional Parameters Monitoring for an Alternating Flow Driven Hydraulic System**
Ioan-Lucian Marcu (*Technical University of Cluj-Napoca, Romania*)
- A-M1 - 5 **HDL Implementation of the Variable Step Size N-LMS Adaptive Algorithm**
Irina Dornean, Marina Topa, Botond Kirei, Gabriel Oltean (*Technical University of Cluj-Napoca, Romania*)
- A-M1 - 6 **Ultra-Low Power Wi-Fi Tag for Wireless Sensing**
Silviu Folea, Marius Ghercioiu (*Technical University of Cluj-Napoca, Romania, National Instruments Corp. USA*)
- A-M1 - 7 **Image Rejection Filter Based on Blind Source Separation for Low-IF Receivers**
Botond Sandor Kirei, Marina Topa, Victor Popescu, Irina Dornean (*Technical University of Cluj-Napoca, Romania*)
- A-M1 - 8 **Web-based platform for management of heterogeneous medical data**
Cristina Ogescu, Claudiu Plaisanu, D. Bistriceanu (*IPA S.A. Bucharest, Romania*)
- A-M1 - 9 **A method to enhance colors in a digital image**
Florin Toadere, Ervin Szopos (*INCDTIM Cluj Napoca, Technical University of Cluj-Napoca, Romania*)
- A-M1 - 10 **Machine tool for lamellar forming of sheet metal parts for heat exchangers - MFAH 260**
Virgil Ispas, Aurel Hordoan, Mihai Steopan (*Technical University of Cluj-Napoca, Romania*)

- A-M1 – 11 **A monitoring system for contaminated pharmaceutical processes**
Iulian Octavian Maga (*Robert Bosch GmbH, Germany*)
- A-M1 – 12 **The emergence of the Web**
Luigi Gabriel Cerban, Alexandru Botu, Adrian Badoiu (*IPA S.A. Bucharest, Romania*)

Fri, May 23
17:45 - 18:30

Multimedia Session 4

A-M2 Quality of experiments and applications

IPA showroom

Chairs

O. Căpățînă, IPA Cluj-Napoca, Romania
A. Aștilean, Technical University of Cluj-Napoca, Romania

- A-M2 - 1 **Voltage Control of a Self-Excited Induction Generator**
Ors Marton (*Technical University of Cluj-Napoca, Romania*)
- A-M2 – 2 **Technical Overview on Designing Wireless Remote Control Steering Mechanisms for Small Ships and Scaled Model Ships**
Mihai Barbos, Constantin Cristescu (*S.C. IPA S.A. Bucharest, Romania*)
- A-M2 – 3 **Hardware implementation of microarray image segmentation**
Bogdan Belean, Albert Fazakas, Raul Malutan, Monica Borda (*Technical University of Cluj-Napoca, Romania*)
- A-M2 – 4 **Wind potential determination in a known area**
Octavian Capatina, Teodor Grosan, Radu Trimbilas (*SC IPA SA Cluj-Napoca Subsidiary, Babes-Bolyai University of Cluj-Napoca, Romania*)
- A-M2 – 5 **Remote Terminal Unit's intelligence evolution**
Rares Cosmin Cazan, Laurentiu Viorel Chirila, Alexandra Marichescu (*SC IPA SA Cluj-Napoca Subsidiary, Romania*)
- A-M2 – 6 **Optoelectronic telependulum station Model TP202**
Camelia Bodi, Nicolae Bojor, Istvan Kovacs (*SC IPA SA Cluj-Napoca Subsidiary, Romania*)
- A-M2 – 7 **Displaying Large Images – A Matrix Based Approach**
Ovidiu Vasile Ghiran, Alin Corha (*SC IPA SA Cluj-Napoca Subsidiary, Romania*)
- A-M2 – 8 **Integrated system, decisional support based on multisensorial information fusion for behavior surveillance and prediction of dams and hydro-power plants**
Alina Calarasu, Ioan Stoian, Ovidiu Dancea, Mihaela Gordan, Theodor Popescu, Radu Campeanu (*SC IPA SA Cluj-Napoca Subsidiary, Technical University of Cluj Napoca, National Institute for Research and Development in Informatics Bucharest, Transilvania University of Brasov, Romania*)
- A-M2 – 9 **Urban Water Supply System**
Eugen Stancel, Ioan Stoian, Istvan Kovacs, Bela Gyurka, Szabolcs Balogh (*SC IPA SA Cluj-Napoca Subsidiary, Romania*)
- A-M2 – 10 **Strategic Mapping of the Ambient Noise Produced by Road Traffic, Accordignly to European Regulations**
Maria Mircea, Istvan Kovacs, Ioan Stoian, Alexandra Marichescu, Alina Tepes-Bobescu (*SC IPA SA Cluj-Napoca Subsidiary, Romania*)
- A-M2 – 11 **Objects Recognition in Visible and Infrared Images from the Road Scene**
Anca Ioana Apatean (Discant), Alexandrina Rogozan, Abdelaziz Benshair (*Technical University from Cluj-Napoca, National Institute of Applied Sciences Rouen, France*)
- A-M2 – 12 **A Corneal Effort Mapping System for Glaucoma Risk based on Ocular Response Analyzer**
Horea Demea, Sorina Demea, Rodica Holonec (*Ophthalmologic Center – Review Cluj-Napoca, Technical University of Cluj-Napoca, Romania*)

- A-M2 – 13 **Computer Based Modeling and Simulation for Wind Energy Systems**
Ioan Stoian, Alexandra Marichescu, Mihaela Gordan (*SC IPA SA Cluj-Napoca Subsidiary, Technical University of Cluj Napoca, Romania*)
- A-M2 - 14 **ITIM Distributed Grid System applied in high energy, biomolecular and nanotechnology physics**
Felix Farcas, Gabriel Popeneciu, Attila Bende, Cristian Morari, Sergey Belov, Liviu Miclea (*INCDTIM, Cluj-Napoca, Romania, JINR, Russia, Technical University of Cluj Napoca, Romania*)

Fri, May 23
15:30 - 16:15

Poster Session 1

IPA Showroom

Chairs

- P. Mitrea, Technical University of Cluj-Napoca, Romania
D. Sârbu, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania

- P1 - 1 **Open loop system identification for regulators based on microcontrollers**
Titus Jovrea, Mihail Abrudean, Mircea Dulau (*“Petru Maior” University of Targu-Mures, Technical University of Cluj-Napoca, Romania*)
- P1 - 2 **Using Model Predictive Control (MPC) for an Internet-based Telerobotic System**
Ionut Cristian Resceanu, Marius Cristian Niculescu (*University of Craiova, Romania*)
- P1 - 3 **Medical devices risk management**
Mirel Simona, Neag Flavius (*“Iuliu Hatieganu” University of Medicine and Pharmacy, Romania*)
- P1 - 4 **Assessment of Ventilation Requirements in Hospital Operating Rooms**
Dana Sirbu, Monica Popa, Daniela Curseu, Marcel Sabin Popa, Ovidiu Ghiran (*“Iuliu Hatieganu” University of Medicine and Pharmacy, Technical University Cluj-Napoca, S.C. IPA S.A. Subsidiary Cluj-Napoca, Romania*)
- P1 – 5 **Assessment and Management Strategies of Overweight and Obese Teens**
Dana Manuela Sirbu, Daniela Curseu, Monica Popa, Ovidiu Ghiran, Ioan Stoian (*“Iuliu Hatieganu” University of Medicine and Pharmacy, S.C. I.P.A. S.A. Subsidiary Cluj-Napoca, Romania*)
- P1 – 6 **PROMED (Platform for diagnosis and medical decision for optimization in healthcare) in the Romanian legislative framework regarding the Electronic Health Records (EHR)**
Roxana Antohi, Cristina Ogescu, D. Bistriceanu, L. Stefan, S. Dumitru (*S.C. IPA S.A., ITC S.A, Romania*)
- P1 – 7 **ECG signal Denoising and Baseline Wandering Reduction using Wavelet Transform based techniques**
Zoltán Germán-Salló (*“Petru Maior” University of Targu-Mures, Romania*)
- P1 – 8 **e-Registry of dyspepsia in Transylvania**
Sorina Livia Pop, Dan L. Dumitrascu, Olimpia Curta, Dumitru Dumitrascu (*“Iuliu Hatieganu” University of Medicine and Pharmacy, “Babes Bolyai” University, Romania*)
- P1 – 9 **Identification of the Tumors Morphological Codes by means of Multiprocessors Systems**
Ioana Chiorean, Liana Lupsa, Luciana Neamtii (*“Babes Bolyai” University, Oncological Institute, Romania*)
- P1 – 10 **Tele-Monitoring System for Biophysical and Biochemical Parameters in Ambulatory Treatment**
Ana Maria Puscas, Paul Borza, Doru Talaba (*Transilvania University of Brasov, Romania*)
- P1 – 11 **Mathematical models of bone remodelling**
Mihaela Maria Manisor, Liviu Miclea, Horea Benea (*Technical University of Cluj-Napoca, “Iuliu Hatieganu” University of Medicine and Pharmacy, Romania*)

- P1 – 12 **Multidimensional analysis regarding the processing of the ECG signal**
Cosmin Karl Banica, George Calin Seritan, Costin Cepisca (*Politehnica University of Bucharest, Romania*)

Fri, May 23
16:15 - 17:00

Poster Session 2

IPA Showroom

Chairs

- V. Ispas, Technical University of Cluj-Napoca, Romania
O. Tătar, Technical University of Cluj-Napoca, Romania

- P2 – 1 **IP Security and Authentication on the Internet**
Marius-Cristian Niculescu, Ionut Resceanu (*University of Craiova, Romania*)
- P2 – 2 **Robotic Actuation Systems Based on Shape Memory Alloy Actuators**
Dan Mandru, Olimpiu Tatar, Simona Noveanu, Ion Lungu (*Technical University of Cluj-Napoca, Romania*)
- P2 – 3 **Integration of Acceleration Sensors Data in Robot Control Systems**
Adrian Dumitriu (*Transilvania University of Brasov, Romania*)
- P2 – 4 **The dynamic study of an industrial robot composed by articulated elements**
Viorel Ispas, Silviu-Mihai Petrisor, Adrian Blebea, Virgil Ispas (*Technical University of Cluj-Napoca, Romania*)
- P2 – 5 **New Study on the Motion Analysis of the Six-Legged Walking Robot**
Sergiu-Dan Stan, Pierluigi Rea, Giorgio Figliolini (*Technical University of Cluj-Napoca, Romania, University of Cassino, Italy*)
- P2 – 6 **Machine tool for sheet metal lamellar forming – WFO 150**
Virgil Ispas, Mihai Steopan (*Technical University of Cluj-Napoca, Romania*)
- P2 – 7 **Computer assisted experimental research on prototype linear piezoelectric actuators**
Nicolae Alexandrescu, Constantin Udrea, Daniel Comeaga, Dragos Ovezza, Tudor Catalin Apostolescu (*Politehnica University of Bucharest, Romania*)
- P2 – 8 **Integrated Management and Control System for Water Resources, Based on the Durable Development Concept Applied at European Level**
Virgil Olaru, Oana Ivan, Aurel Varduca, Theodor Anastasiu, Tiberiu Apostol, Gheorghe Campeanu (*S.C. IPA S.A., Bucharest, ICIM Bucharest, Politehnica University of Bucharest, BIOTEHNOL Bucharest, Romania*)
- P2 – 9 **Practical and Theoretical Aspects on Current Conditioning Boards Used for PEBB Converter Control**
Petre-Marian Nicolae, Ileana-Diana Nicolae, Dan-Gabriel Stanescu (*University of Craiova, Romania*)
- P2 – 10 **A Dynamic Programming Framework for Combinatorial Optimization Problems on Graphs with Bounded Pathwidth**
Mugurel Ionut Andreica (*Politehnica University of Bucharest, Romania*)
- P2 – 11 **PWM Generator for the Two or Four Quadrant Chopper Command**
Alexandru Morar (*"Petru Maior" University of Targu-Mures, Romania*)

Fri, May 23
17:00 - 17:45

Poster Session 3

IPA Showroom

Chairs

- E. Dulf, Technical University of Cluj-Napoca, Romania
I. Vădan, Technical University of Cluj-Napoca, Romania

- P3 - 1 **The oscillations of an overhead contact line due to the pantograph rising**
Razvan Andrei Oprea, Gabriel Popa, Sorin Arsene (*Politehnica University of Bucharest, Romania*)

- P3 - 2 **Mobile telephony client server system**
Eugen POP, Mihai Barbos, Razvan Lupu (S.C. IPA S.A., Bucharest, Romania)
- P3- 3 **Monitoring Virtual System for Some Geotechnical Structures**
Zoller Carol, Rebrisoreanu Mircea, Dobra Remus (University of Petrosani, Romania)
- P3- 4 **Optimizing a manufacturing system after analysis of Extend TM and WinQSB simulation environment**
Olga Ioana Amariei, C.D. Dumitrescu, N. Ghilic, C. Hamat, R. Malas ("Eftimie Murgu" University of Resita, University Politehnica of Timisoara, Romania)
- P3 – 5 **Digital interface for optical encoder**
Grofu Florin, Olaru Onisifor, Cercel Constantin (University "Constantin Brancusi", Targu Jiu, Romania)
- P3 – 6 **The analysis of the start up control parameters of the asynchronous electric traction motors**
Gabriel Popa, Razvan Oprea, Sorin Arsene (Politehnica University of Bucharest, Romania)
- P3 – 7 **Multimedia Platform for Flood Risk Areas Real-time Monitoring, Simulation and Solution Generation for Optimal Usage of Water Flow Capacity Regulation Equipments Around Cities**
Virgil Olaru, Cosmin Enculescu, Alexandru Enache, George Dabuleanu, Cosmina Badea, Carmen Stan (S.C. IPA S.A., Bucharest, ITC S.A., Bucharest, Romania)
- P3 – 8 **QSAR modelling and Feature Selection Techniques**
Luminita Dumitriu, Cristina Segal, Mariana Badea, Florentina Israel-Roming, Marian Craciun, Adina Cocu, Adrian Istrate, Dan Munteanu ("Dunarea de Jos" University, Galati, ICIM Bucharest, BIOTEHNOL Bucharest, Romania)
- P3 – 9 **Decision Support Systems for Complex Hydropower Plants**
Alin Corha (SC IPA SA Subsidiary Cluj-Napoca, Romania)
- P3 – 10 **Study on the behavior of Ni-Ti Shape Memory Alloys in order to highlight the Memory Effect**
Daniel Amariei, G.R. Gillich, D. Frunzaverde, C. Miclosina ("Eftimie Murgu" University of Resita, Romania)
- P3 – 11 **Classroom Concept for eUniversity and Personnel Training**
Sanda Porumb, Bogdan Orza, Aurel Vlaicu, Cosmin Porumb, Smaranda Salagea (Technical University of Cluj-Napoca, HyperMeridia SRL, Romania)
- P3 – 12 **Monitoring System for Hydroelectric Units**
Doru Oprisescu, Carmen Olaru (S.C. IPA S.A., Bucharest, Romania)

Fri, May 23
17:45 - 18:30

Poster Session 4

IPA Showroom

Chairs

S. Herle, Technical University of Cluj-Napoca, Romania
O. Ghiran, SC IPA SA Cluj, Romania

- P4 – 1 **Physical Methods for Water Treatment by Swimming Pools: Possibility for Recirculation**
Dumitru Vaju, Clement Festila, Liviu Suci (S.C. I.C.P.E.-Bistrita S.A., Technical University of Cluj-Napoca, Romania)
- P4 – 2 **Technological Resource Management Optimization for Small Hydropower Plant Systems**
Szabolcs Balogh, Eugen Stancel, Liviu Miclea (S.C. IPA S.A. Subsidiary Cluj-Napoca, Technical University of Cluj-Napoca, Romania)
- P4 – 3 **Principles of the Operational Management for a Hydropower Plant Dispatching**
Mircea Ordean, Eva Henrietta Dulf, Clement Festila (S.C. Hidroelectrica SA, Technical University of Cluj-Napoca, Romania)

- P4 – 4 **Study of Vertical Vibration Transmission to Entire Whole Human Body**
Alina Tepes, Mariana Arghir, Maria Mircea, Ioan Stoian, Bela Gyurka (*SC IPA SA Subsidiary Cluj-Napoca, Technical University of Cluj-Napoca, Romania*)
- P4 – 5 **Information system for storing and processing of aeromagnetic data from Romanian territory**
Madin Vlad, Luminita Zlagnean, Valentin Sgarciu, Lucian Besutiu (*Politechnica University of Bucharest, Institute of Geodynamics, Romania*)
- P4 – 6 **Inductive Transducer Based on Foucault Currents for Consolidation Measurements**
Dan Meza, Istvan Kovacs, Alexandra Marichescu (*S.C. IPA S.A. Subsidiary Cluj-Napoca, Romania*)
- P4 – 7 **RS232/RS485 Serial Interface Adapter**
Ioan Vadan, Constantin Vasilescu, Dan Octavian Capatina, Alina Calarasu, Lajos Vass (*Technical University of Cluj-Napoca, SC CIV Softech SRL, Bucharest, S.C. IPA S.A. Subsidiary Cluj-Napoca, Romania, KALAVIA , Budapest, Hungary*)
- P4 – 8 **Creating Virtual 3D Models Using Digital Reconstruction of Real Objects**
Alina Dinca, Ilie Borcosi, Luminita Popescu, Gabriel Gidei, Nicolae Antonie, Marian Ionescu (*"Constantin Brancusi" University, VirtualMagic Software House Romania*)
- P4 – 9 **Traffic sign detection, based on color, light and geometric information**
Mircea Cimpoi, Radu-Mihai Meza (*"Babes Bolyai" University, Romania*)
- P4 – 10 **Integrated system for control and monitoring in real time of electrical and thermal energy efficient production in Cogenerative Gas Power Plants**
Ion Miciu (*SC IPA SA, Bucharest, Romania*)
- P4 – 11 **Mathematical model and simulation of the heat transfer in the EDM process**
Marcel Sabin Popa, Glad Contiu, Mircea Precup, Dan Preja, Ovidiu Gaina (*Technical University of Cluj-Napoca, Romania*)

Fri, May 23
19:00

Dinner

Saturday, 24th May

Technical University of Cluj-Napoca, 26 - 28 Baritiu Street

Sat, May 24
9:00 - 10:30

Sessions III

C-S2 Control systems

Room 40

Chairs

C. Volosencu, Politehnica University of Timisoara, Romania

G. Sebestyén, Technical University of Cluj-Napoca, Romania

- C-S2 - 1 **Control System for an Ultrasonic Welding Device**
Constantin Volosencu (*Politehnica University of Timisoara, Romania*)
- C-S2 - 2 **Modeling of the Rotary Inverted Pendulum System**
Monica Roman, Eugen Bobasu, Dorin Sendrescu (*University of Craiova, Romania*)
- C-S2 - 3 **Subspace Based Identification of Unstable Systems**
Dorin Sendrescu, Dan Selisteanu, Constantin Marin (*University of Craiova, Romania*)
- C-S2 - 4 **Adaptive Control Strategies for a Class of Anaerobic Depollution Bioprocesses**
Emil Petre, Dan Selisteanu, Dorin Sendrescu (*University of Craiova, Romania*)
- C-S2 - 5 **Transaction-based model for real-time distributed control systems**
Gheorghe Sebestyen, Anca Hangan (*Technical University of Cluj-Napoca, Romania*)

T-S2 Testing

Room 41

Chairs

M. Vinătoru, University of Craiova, Romania

L. Feștilă, Technical University of Cluj-Napoca, Romania

- T-S2 - 1 **Bio-inspired Hardware Systems Development and Implementation with FPGA-based Artificial Cell Network**
Csaba Szasz, Virgil Chindris (*Technical University of Cluj-Napoca, Romania*)
- T-S2 - 2 **About minimal and optimal population of a CBR intelligent diagnosis dedicated system**
Ion Gaziuc, Dorin Isoc, Aurelian Ignat, Adrian Joldis (*Technical University of Cluj-Napoca, Romania*)
- T-S2 - 3 **Faults digital library in burning process**
Gabriela Canureci, Matei Vinatoru, Camelia Maican, Eugen Iancu (*University of Craiova, Romania*)
- T-S2 - 4 **Fault detection and isolation based on system feedback**
Camelia Maican, Matei Vinatoru, Eugen Iancu, Gabriela Canureci (*University of Craiova, Romania*)
- T-S2 - 5 **Experimental Aspects at Switching with Power MosFet's**
Adrian Tulbure, Mihail Abrudean (*"1 Decembrie 1918" University of Alba Iulia, Technical University of Cluj-Napoca, Romania*)
- T-S2 - 6 **ABM Blocks for Precise Measurements in DC-DC Converters**
Mihaela Cirlugea, Lorant Szolga, Lelia Festila (*Technical University of Cluj-Napoca, Romania*)

T-S2 - 7 **Design of a high-reliability 20-bit optical shaft encoder**
Jean-Marc Armani, Pascal Chambaud, Francis Joffre, Jean-Louis Mainguy,
Alain Grass (CEA LIST, AREVA NC, Société CODECHAMP, Champagnat,
France)

R-S2 Robotics

Room F

Chairs

D. Pîslă, Technical University of Cluj-Napoca, Romania

L. Pacheco, University of Girona, Spain

R-S2 - 1 **Genetic Algorithms to Optimal Design of a 3 DOF Parallel Robot**
Sergiu Stan, Vistrian Maties, Radu Balan, Ciprian Lapusan
(Technical University of Cluj-Napoca, Romania)

R-S2 - 2 **New Formulations about Dynamics of Robots**
Iuliu Negrean, Dan-Calin Negrean, Kalman Kacso, Adina Veronica Duca
(Technical University of Cluj-Napoca, Romania)

R-S2 - 3 **Local Model Predictive Control Experiences with Differential Driven
Wheeled Mobile Robots**
Lluís Pacheco, Ningsu Luo, Jordi Ferrer (University of Girona, Spain)

R-S2 - 4 **Aspects concerning simulation of calibration in the case of machine tools
with parallel topology**
Cornel Brisan (Technical University of Cluj-Napoca, Romania)

R-S2 - 5 **Mobile robots formation navigation with behavior based algorithms**
Gheorghe Lazea, Radu Robotin, Sorin Herle, Cosmin Marcu, Levente Tamas
(Technical University of Cluj-Napoca, Romania)

R-S2 - 6 **Piezo electrically operated mini robot**
Nicolae Alexandrescu, Constantin Udrea, Daniel Comeaga, Dragos Ovezza,
Tudor Catalin Apostolescu (University Politehnica of Bucharest, Romania)

R-S2 - 7 **Dynamics of a 3-DOF Parallel Mechanism used for Orientation Applications**
Tiberiu Itul, Doina Pîslă (Technical University of Cluj-Napoca, Romania)

R-S2 - 8 **A Simulation Control Interface for Robotic Structures used as Flight
Simulators**
Doina Liana Pîslă, Nicolae Plitea, Adrian Pîslă, Ioan Stoian, Eugen Stancel, Bela
Zoltan Gyurka, Alina Tepes (Technical University of Cluj-Napoca, S.C. IPA S.A.
Cluj Subsidiary, Romania)

N-S3 Networking and services quality and security

Room 356

Chairs

I. Salomie, Technical University of Cluj-Napoca, Romania

H. Vălean, Technical University of Cluj-Napoca, Romania

N-S3 - 1 **ADAMANTIUM Project: Enhancing IMS with a PQoS-aware Multimedia
Content Management System**
Harilaos Koumaras, Daniel Negru, Fidel Liberal, Javier Arauz, Anastasios
Kourtis (NCSR DEMOKRITOS, Greece, Viotech Communications, France,
University of the Basque Country, Ericsson, Spain)

N-S3 - 2 **QoS Monitoring for End-to-End Heterogeneous Networks Configurations
Management**
Mamadou Sidibé, Ahmed Mehaoua (University of Versailles, University of Paris
5, France)

- Enabling Quality of Service for End-to-End Multimedia Content Delivery through Admission Control: Placement, Functionality and Benefits**
 N-S3 - 3 Stylianos Georgoulas, George Pavlou, Eugen Borcoci, Kin-Hon Ho, Effimia Vraka (*University College London, UK, University Politehnica of Bucharest, Romania, University of Surrey (UniS), Ericsson, UK*)
- The Methodology for Testbed Validation and Performance Assessment of Network/Service Management Systems**
 N-S3 - 4 Eugen Borcoci, Abolghasem (Hamid) Asgari, Silviu Ciochina, Serban Georgica Obreja (*University Politehnica of Bucharest, Romania, Thales Research and Technology (TRT), UK*)
- A demonstration infrastructure for E2E QOS services provisioning**
 N-S3 - 5 T. Pliakas, G. Xilouris, N. Zotos, A. Kourtis (*NCSR Demokritos, Greece*)
- SAWS: A Tool for semantic annotation of Web services**
 N-S3 - 6 Ioan Salomie, Viorica Rozina Chifu, Ioana Giurgiu, Mihai Cuibus (*Technical University of Cluj-Napoca*)
- Logistic Chain Generation with Traceability Features using Web Services Composition**
 N-S3 - 7 Ioan Salomie, Mihaela Dinsoreanu, Cristina Bianca Pop, Sorin-Liviu Suci (*Technical University of Cluj-Napoca*)
- SOA-Based Medical Image Processing Platform**
 N-S3 - 8 Valeriu Todica, Mircea-Florin Vaida (*Technical University of Cluj-Napoca, Romania*)

H-S2 Quality of life and e-health

Room E15

Chairs

C. Cenan, Technical University of Cluj-Napoca, Romania

M. Lupşor, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania

- Investigations of the thrombogenic and cavitation potentials of a bileaflet mechanical heart valve, using ANSYS-CFX**
 H-S2 - 1 Angela Elena Turcu, Dan Rafiroiu, Vanessa Diaz-Zuccarrini, Andrew Narracott, David Hose, Patricia Lawford (*Technical University of Cluj-Napoca, Romania, University College London, University of Sheffield, UK*)
- Ultrasonographic Diagnosis of Nonalcoholic Steatohepatitis Based on the Quantitative Evaluation of the Ultrasound Beam Behavior into the Liver**
 H-S2 - 2 Monica Lupsor, Radu Badea, Cristian Vicas, Sergiu Nedevschi, Mircea Grigorescu, Horia Stefanescu, C. Radu, D. Crişan, Z. Spârchez, Al. Serban, H. Branda (*“Iuliu Hatieganu” University of Medicine and Pharmacy Cluj Napoca, Technical University of Cluj-Napoca, Romania*)
- Comparison between attenuation coefficient computed on the ultrasound image and a biological marker, adiponectin, in the diagnosis of steatosis in non-alcoholic fatty liver disease**
 H-S2 - 3 Mircea Grigorescu, Corina Radu, Monica Lupsor, Cristian Vicas, Sergiu Nedevschi, Radu Badea (*“Iuliu Hatieganu” University of Medicine and Pharmacy Cluj Napoca, Technical University of Cluj-Napoca, Romania*)
- A proposed architecture and ontology for a software system for managing patient’s health record**
 H-S2 - 4 Calin CENAN (*Technical University of Cluj-Napoca, Romania*)
- Exploring the textural parameters obtained from ultrasound images for modeling the liver pathological stages in the evolution towards Hepatocellular Carcinoma**
 H-S2 - 5 Delia Mitrea, Sergiu Nedevschi, Monica Lupsor, Radu Badea (*Technical University of Cluj-Napoca, “Iuliu Hatieganu” University of Medicine and Pharmacy Cluj Napoca, Romania*)

- H-S2 - 6 **Regional Distributed System for Medical Emergency Assistance**
Dorina Capatana, Ovidiu Dancea, Rares Cazan, Adela Golea, Cristian Boieriu, Adina Stoian (S.C.IPA S.A. Cluj Subsidiary, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj Napoca, SMURD Targu Mures, Romania, Hospital de Leman, France)
- H-S2 - 7 **An Optimal Model to Solve the Transport Problem for Mammography Screening**
Radu-Lucian Lupsa, Liana Lupsa, Luciana Neamtii (Babes-Bolyai University Cluj-Napoca, Oncological Institute, Romania)

A-S2 Quality of experiments and applications

Room 359

Chairs

I.A. Leția, Technical University of Cluj-Napoca, Romania
O. Ghiran, IPA Cluj-Napoca, Romania

- A-S2 - 1 **Identifying Design Patterns in Object-Oriented Software Systems Using Unsupervised Learning**
Istvan Gergely Czibula, Gabriela (Serban) Czibula (Babes-Bolyai University Cluj-Napoca, Romania)
- A-S2 - 2 **Multiagent Decision Support Systems based on Supervised Learning**
Gabriela (Serban) Czibula, Adriana Mihaela Tarta, Grigoreta Sofia Cojocar, Istvan Gergely Czibula (Babes-Bolyai University Cluj-Napoca, Romania)
- A-S2 - 3 **Custom Technique for Handling Data Caching in ASP.NET 2.0**
Adrian Gut, Liviu Miclea, Istvan Hoka, Daniel Cristian Duma (Technical University of Cluj-Napoca, Romania)
- A-S2 - 4 **A Taxonomy for Grid Applications**
Alin Suci, Rodica Potolea (Technical University of Cluj-Napoca, Romania)
- A-S2 - 5 **Towards A Method for Bootstrapping Agent Trust**
Ioan Alfred Letia, Radu Razvan Slavescu (Technical University of Cluj-Napoca, Romania)
- A-S2 - 6 **Improving keeping track of file modification time**
Radu-Lucian Lupsa (Babes-Bolyai University Cluj-Napoca, Romania)
- A-S2 - 7 **Deformable models: software implementations based on mathematical fundamentals**
Alexandru Mitrea, Paulina Mitrea (Technical University of Cluj-Napoca, Romania)

Sat, May 24
10:30 - 10:45
Sat, May 24
10:45 - 12:15

Coffee Break

Sessions IV

C-S3 Control systems

Room 40

Chairs

C. Rusu, Technical University of Cluj-Napoca, Romania
P. Dobra, Technical University of Cluj-Napoca, Romania

- C-S3 - 1 **Microcontroller Based System for Vibration Analysis**
Katalin Agoston ("Petru Maior" University, Tg.Mures, Romania)
- C-S3- 2 **Model Based Design Controller for the Stepper Motor**
Calin Rusu, Iulian Birou, Enikő Szőke (Technical University of Cluj-Napoca, Romania)
- C-S3- 3 **Nonlinear EPSAC Predictive Control of Blood Glucose Level in Diabetic Patients for Prandial Disturbance Rejection**
Ramona Hodrea, Clara Ionescu, Robin De Keyser, Ioan Nascu (Technical University of Cluj-Napoca, Romania, Ghent University, Belgium)

- C-S3 - 4 **A Simple Method to Develop Interpolative Controllers with Robustness Properties at Step Reference Changes**
Sanda Dale, Alexandru Bara (*University of Oradea, Romania*)
- C-S3 - 5 **Fuzzy Bang-Bang Control of a Switching Voltage Regulator**
Bizon Nicu, Oproescu Mihai, Raducu Marian (*University of Pitesti, Romania*)
- C-S3 - 6 **Design Framework for Risk Mitigation in Industrial PLC Control**
Eugen Gergely, D. C. Spoiala, V. Spoiala, H. M. Silaghi, Z. T. Nagy
(*University of Oradea, Romania*)
- C-S3 - 7 **Fuzzy Model Based Predictive Control Of Nonlinear Processes**
Alexandru Bara, Sanda Dale (*University of Oradea, Romania*)

C-S4 Control systems

Room F

Chairs

C. Feștilă, Technical University of Cluj-Napoca, Romania
T. Letia, Technical University of Cluj-Napoca, Romania

- C-S4 - 1 **Estimator Based Flooding Predictor for 13C Cryogenic Separation Column**
Cristina Ioana Pop, Eva Henrietta Dulf, Clement Festila (*Technical University of Cluj-Napoca, Romania*)
- C-S4 - 2 **Adaptive control approach in case of a rigid link robot system**
Mirela Trusca, Gh. Lazea, E. Lupu (*Technical University of Cluj-Napoca, Romania*)
- C-S4 - 3 **Virtual Radar Image Construction for Railway Traffic**
Tiberiu Letia, Adina Astilean, Camelia Avram, Mihai Hulea, Radu Miron
(*Technical University of Cluj-Napoca, Romania*)
- C-S4 - 4 **The Taylor Series – Local Iterative Linearization Method for Numerical Modeling and Simulation of Linear Processes**
Tiberiu Colosi, Mihai Abrudean, M.L. Unguresan (*Technical University of Cluj-Napoca, Romania*)
- C-S4 - 5 **Issues Regarding the Modeling and Simulation of Wind Energy Conversion System's Components**
Iosif Szeidert, Octavian Prosteian, Ioan Filip, Cristian Vasar, Lucian Mihet-Popa
(*Politehnica University from Timisoara, Romania*)
- C-S4 - 6 **Development and Application of a PID Auto-Tuning Method to a Wastewater Treatment Process**
Ioan Nascu, Grigore Vlad, Silviu Folea, Tudor Buzdugan (*Technical University of Cluj-Napoca, Romania*)

T-S3 Testing

Room 41

Chairs

D. Petreuş, Technical University of Cluj-Napoca, Romania
D. Moga, Technical University of Cluj-Napoca, Romania

- T-S3 - 1 **Business intelligence as a competitive differentiator**
Rodica Bogza, Dorin Zaharie (*Academy of Economic Studies Bucharest, Romania*)
- T-S3 - 2 **Functional Verification of Digital Circuits Using a Software System**
Irina Rancea, Valentin Sgarciu (*Politehnica University of Bucharest, Romania*)
- T-S3 - 3 **Hierarchical Approach for Intelligent Lighting Control in Future Urban Environments**
Constantin Volosencu, Daniel-Ioan Curiac, Ovidiu Bantias, Cristian Ferent, Dan Pescaru, Alexa Doboli (*Politehnica University of Timisoara, Romania, State University of New York at Stony Brook, USA*)

- T-S3 - 4 **Shape Error Detection Using Fringe Pattern Reconstruction**
Adrian Chioreanu, Veronika Putz, Bernhard Zagar, Aurel Vlaicu (*Technical University of Cluj-Napoca, Romania, Johannes Kepler University, Austria*)
- T-S3 - 5 **Developing reliable hand-arm models for reducing vibration exposure levels**
Simona Lache, Marius Cristian Luculescu (*Transilvania University of Brasov, Romania*)
- T-S3 - 6 **Torque Measurement System Design**
Dorin Petreus, Cristian Farcas, Petru Dobra, Daniel Moga (*Technical University of Cluj-Napoca, Romania*)
- T-S3 - 7 **A Case-Based Reasoning Approach for Fault Detection State in Bridges Assessment**
Aurelian Ignat-Coman, Dorin Isoc, Adrian Joldis, Ion Gaziuc (*Technical University of Cluj-Napoca, Romania*)

T-S4 Testing

Room 356

Chairs

C. Popa, IPA Craiova, Romania
E. Pop, IPA Bucharest, Romania

- T-S4 - 1 **Using a Cryptographic Authentication Protocol for the Secure Control of a Robot over TCP/IP**
Bogdan Groza, Toma-Leonida Dragomir (*Politehnica University from Timisoara, Romania*)
- T-S4 - 2 **Java implementation of an Authentication Protocol with Application on Mobile Phones**
Bogdan Groza, Dragos Pop, Ioan Silea (*Politehnica University from Timisoara, Continental Corporation, Romania*)
- T-S4 - 3 **Supervisory control and quality assurance in food industry**
G. Sebestyen, D. Nicoara, M. Rusu, L. Buzdugan, M. Cerghizan, G. Saplacan (*Technical University of Cluj-Napoca, Company for Applied Informatics SA, SISTEC SA, Romania*)
- T-S4 - 4 **The online prediction of the faults for integrated maintenance and reliability**
Cornelia Popa, Marius Fetoiu, Gabriel Vladut, Alexandru Craciun (*S.C. IPA S.A. CIFATT, Craiova, Romania*)
- T-S4 - 5 **Monitoring system in the emergency planning area, integrated in the environment pollution management system from chemical platforms**
Alexandru Craciun, Gabriel Vladut, Cornelia Popa (*S.C. IPA S.A. CIFATT, Craiova, Romania*)
- T-S4 - 6 **Low Cost Environment for Teaching and Experimenting Current Based Testing**
Nicoleta Stroia, Daniel Moga, Mihai Dumitrean, Dorin Petreus, Mirela Dobra (*Technical University of Cluj-Napoca, Romania*)
- T-S4 - 7 **New Strategies for Waveforms Analysis Using FFT**
Petre-Marian Nicolae, Gabriel Vladut, Lucian Mandache (*University of Craiova, S.C. IPA S.A. CIFATT, Craiova, Romania*)

H-S3 Quality of life and e-health

Room E15

Chairs

M. Popa, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania
O. Moşteanu, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania

- H-S3 - 1 **Using Artificial Neural Networks in a Computer Aided Diagnosis System for Macular Diseases**
Marius Cristian Luculescu, Simona Lache (*Transilvania University of Brasov, Romania*)
- H-S3 - 2 **Hepatocellular Carcinoma Tele-screening System**
Rares Cazan, Ovidiu Dancea, Dorina Capatana, Horia Stefanescu, Radu Badea, M. Lupsor, Adina Stoian (S.C. IPA S.A. *Subsidiary Cluj-Napoca, ("Iuliu Hatieganu" University of Medicine and Pharmacy, Romania, Hospitals Leman - France)*)
- H-S3 - 3 **Modeling and Simulation of Controlled Orthodontic Tipping And Translation of Single-Rooted Teeth**
Horatiu Alexandru Colosi, Eva-Henrietta Dulf, Marius Nicolae Roman, Andrei Achimas Cadariu (*"Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj Napoca, Technical University of Cluj-Napoca, Romania*)
- H-S3 - 4 **Classification of surface electromyographic signals for control of upper limb virtual prosthesis using time-domain features**
Sorin Herle, Paula Raica, Gheorghe Lazea, Radu Robotin, Cosmin Marcu, Levente Tamas (*Technical University of Cluj-Napoca, Romania*)
- H-S3 - 5 **Mathematical modeling and control strategies for tumor induced angiogenesis**
Mihaela Manisor, Paula Raica, L. Miclea, Teodora Pop, Ofelia Mosteanu (*Technical University of Cluj-Napoca, ("Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj Napoca, Romania)*)
- H-S3 - 6 **Hepatocellular Carcinoma Angiogenesis Assessment- Role of Ultrasound and Mathematical Modelling**
Ofelia Mosteanu, Teodora Atena Pop, Paula Raica, Monica Lupsor, Mihai Socaciu, Liviu Miclea, Radu Badea (*"Iuliu Hatieganu" University of Medicine and Pharmacy, Technical University of Cluj-Napoca, Romania*)
- H-S3 - 7 **EN13606 Overview And Compatibility With The Romanian Healthcare System**
Stefan Dehelean, Dragos Sauciuc, Liviu Miclea, Istvan Hoka (*Technical University of Cluj-Napoca, Romania*)

A-S3 Quality of experiments and applications

Room 359

Chairs

P. Pop, Technical University of Cluj-Napoca, Romania
G. Olteanu, Technical University of Cluj-Napoca, Romania

- A-S3 - 1 **Globalization Solution for a Web Based Community**
Adrian Gut, Istvan Hoka, Liviu Miclea, Gabriela Florescu, Valentin Florescu (*Technical University of Cluj-Napoca, National Institute for Research and Development in Informatics ICI Bucharest, Romania*)
- A-S3 - 2 **A Learning Real-Time Routing System for Emergency Vehicles**
Radu-Constantin Vlad, Cristina Morel, Jean-Yves Morel, Simona Vlad (*Technical University of Cluj-Napoca, Romania, École Supérieure d'Électronique de l'Ouest-ESEO, University of Angers, France*)
- A-S3 - 3 **A DCT-based approach for hiding patients identification information**
Camelia Popa, Florin Pop, Paul Nemes, Sonia Vlaicu (*Technical University of Cluj-Napoca, "Iuliu Hatieganu" University of Medicine and Pharmacy, Romania*)
- A-S3 - 4 **A Method to Design Ternary Multiplexers Controlled by Ternary Signals Based on SUS-LOC**
Emilia Sipos, Gabriel Oltean, Costin Miron (*Technical University of Cluj-Napoca, Romania*)
- A-S3 - 5 **DNA Repeats Detection Using BW Spectrograms**
Petre Pop, Eugen Lupu (*Technical University of Cluj-Napoca, Romania*)

- A-S3 - 6 **Asymmetric directional diffusion based image filtering and enhancement**
Romulus Terebes, Borda Monica, Christian Germain, Olivier Lavalie, Sorin Pop
(*Technical University of Cluj-Napoca, Romania, Bordeaux I University, France*)
- A-S3 - 7 **A Data Mining Experiment on a SCADA System's Historical Acquired Data**
Teodora Sanislav, Dorina Capatina, Liviu Miclea (*S.C. IPA S.A. Subsidiary Cluj-Napoca, Technical University of Cluj-Napoca, Romania*)

Sat, May 24 12:15-12:30	Coffee break	
Sat, May 24 9:00 – 10:30	Student Forum	Room E17
Sat, May 24 10:45 – 12:15	Student Forum	Room E17

IPA CIFATT Cluj Subsidiary, 15 Zorilor Street

IPA Forum: Multimedia Sessions		
Sat, May 24 9:00 – 9:45	Multimedia Session 5	

C-M2 Control systems IPA Showroom

Chairs

E. Stâncel, IPA Cluj-Napoca, Romania
I. Birou, Technical University of Cluj-Napoca, Romania

- C-M2 - 1 **Numerical Modelling and Simulation of Laviron treatment for some phenothiazine modified graphite electrodes**
Mihaela Ligia Unguresan, Delia Gligor, Francisc Dulf (*Technical University of Cluj-Napoca, "Babes-Bolyai" University Cluj-Napoca, Agricultural Sciences and Veterinary Medicine University Cluj-Napoca, Romania*)
- C-M2 - 2 **Systemic Approach for Numerical Modelling and Simulation of Koutecky-Levich equation for NADH electrocatalytic oxidation at graphite electrodes modified with a polymeric phenothiazine**
Delia Gligor, Mihaela Ligia Unguresan, Francisc Dulf (*"Babes-Bolyai" University Cluj-Napoca, Technical University of Cluj-Napoca, Agricultural Sciences and Veterinary Medicine University Cluj-Napoca, Romania*)
- C-M2 - 3 **Asymptotic Stability Study of Induction Motor Vector Control Systems with Luemberger Observer**
Olimpiu Stoicuta, Teodor Pana (*University of Petrosani, Technical University of Cluj-Napoca, Romania*)
- C-M2 - 4 **Small Speed Asymptotic Stability Study of Induction Motor Sensorless Vector Control Systems with Extended Luemberger Estimator**
Teodor Pana, Olimpiu Stoicuta (*Technical University of Cluj-Napoca, University of Petrosani, Romania*)
- C-M2 - 5 **Adaptive Identification Algorithms and Robust Control Strategies used for Performant Electrical Drives with AC Machines**
Iulian Birou, Calin Rusu, Sorin Pavel (*Technical University of Cluj-Napoca, Romania*)
- C-M2 - 6 **The control of the step for the furnace with rotary hearth in the technologic flow for manufacturing pipes without welding**
Vlad Muresan, Mihail Abrudean (*Technical University of Cluj-Napoca, Romania*)
- C-M2 - 7 **Control of rotary hearth furnace, using a programmable controller**
Vlad Muresan, Mihail Abrudean (*Technical University of Cluj-Napoca, Romania*)
- C-M2 - 8 **Compensating-Symmetrizing Process Control using Virtual Instrumentation**
Sorin Gheorghe Pavel, Virgil Maier, Iulian Birou (*Technical University of Cluj-Napoca, Romania*)

- C-M2 – 9 **Numerical Modeling and Simulation of the EC 43- 3.6 MW Electrical Locomotive Behaviour, by Limits of the Maximum Force of Adherence for Rated Power**
Vasile Tulbure, Rodica Festila, Tiberiu Colosi (*Ecological University of Bucharest, Technical College "Transylvania" Cluj-Napoca, Technical University of Cluj-Napoca, Romania*)
- C-M2 – 10 **Smart sensors and applications**
Tudor Buzdugan, Ioan Nascu (*Technical University of Cluj-Napoca, Romania*)
- C-M2 – 11 **Low-cost embedded solution for auto-tuning DC motor controllers**
Petru Dobra, Dorin Petreus, Daniel Moga, Mirela Trușcă, L. Tomesc, R. Duma (*Technical University of Cluj-Napoca, Romania*)
- C-M2 - 12 **Optimal Control Design Approach Based on a Multipoint Approximation Method**
Olimpiu Hancu, Vistrian Maties, Radu Balan (*Technical University of Cluj-Napoca, Romania*)

Sat, May 24
9:45 – 10:30

Multimedia Session 6

T-M1 Testing

IPA Showroom

Chairs

R. Holonec, Technical University of Cluj-Napoca, Romania
L. Szabo, Technical University of Cluj-Napoca, Romania

- T-M1 - 1 **Advanced Quality Concepts Applied to the Thermal Behaviour of Modern Manufacturing Systems**
Marcel Sabin Popa, Glad Contiu (*Technical University of Cluj-Napoca, Romania*)
- T-M1 - 2 **Fault-Tolerant Gaits of Quadruped Robot on a Constant-Slope Terrain**
Cristina Floriana Pana, Ionut Cristian Resceanu, Daniela Maria Patrascu (*University of Craiova, Romania*)
- T-M1 - 3 **Compact Testing of RAM: Schemes, Tools and Results**
Bodean Ghenadie (*Technical University of Moldova, Moldova*)
- T-M1 - 4 **Term-based composition of security protocols**
Bela Genge, Piroška Haller, Ovidiu Ratoiu, Iosif Ignat (*"Petru Maior" University of Targu Mures, Technical University of Cluj-Napoca, Romania*)
- T-M1 - 5 **About ITC in the Romanian Firms**
Laura Bacali, Roxana Carmen Cordos, Silvia Avasilcai (*Technical University of Cluj-Napoca, "Gheorghe Asachi" Technical University" Iasi, Romania*)
- T-M1 – 6 **Simple Converter Structure for Fault Tolerant Motors**
Szabo Lorand, Ruba Mircea, Fodorean Daniel (*Technical University of Cluj-Napoca, Romania*)
- T-M1 – 7 **Automated Sequence for Testing the Functionality of the Compact FieldPoint 2020 Controller**
Rodica Holonec, Ciprian Iakab, Gheorghe Todoran (*Technical University of Cluj-Napoca, National Instruments, Romania*)
- T-M1 – 8 **"Fail-safe" System for Diagnosis Quality Control in Cervical Cancer Screening**
Teodora Sanislav, Mihaela Dragan, Dorina Capatina, Ioan Stoian (*S.C.IPA S.A. Cluj Subsidiary, Romania*)
- T-M1 – 9 **Real Time Scheduling and CPU Power Consumption in Embedded Systems**
Dana Vilcu (*S.C.IPA S.A. Romania*)

- Rivers Water Quality Monitoring Modeling and Simulation of Pollutants Propagation**
T-M1 – 10 Ioan Stoian, Gicu Ungureanu, Maria Mircea, Zaharia Moldovan, M.V. Cristea, A. Imre (S.C.IPA S.A. Cluj Subsidiary, INCDTIM -National Institute for R&D of Isotopic and Molecular Technologies, "Babes-Bolyai" University Cluj-Napoca, Romania)
- Tele-control and quality of the electric energy in electrical stations**
T-M1 – 11 Gabriel Vladut, Mircea Dobriceanu, Marius Fetoiu, Camelia Cojocaru, Cornelia Popa, Alexandru Craciun (S.C.IPA S.A. Craiova Subsidiary, University of Craiova, Romania)
- Electronic nose for comfort quality assessment**
T-M1 – 12 Sorin Nicolae Cociorva (Technical University of Civil Engineering of Bucharest)
- Aquifers and Hyporheic Zones Investigation by Means of Environmental Isotope Tracers**
T-M1 – 13 Eugen Stancel, Ioan Stoian, Victor Feurdean, Lucia Feurdean, Sorin Ignat, Magdalena Cadis (S.C.IPA S.A. Cluj Subsidiary, INCDTIM -National Institute for R&D of Isotopic and Molecular Technologies, Romania)

Sat, May 24
10:30 – 11:15

Multimedia Session 7

A – M3 Quality of experiments and applications

IPA Showroom

Chairs

E. Stâncel, IPA Cluj-Napoca, Romania
L. Bacali, Technical University of Cluj-Napoca, Romania

- A-M3 - 1 **Fingerprint Recognition Distributed System**
Mihai Hulea, Adina Astilean, Tiberiu Letia, Radu Miron, Silviu Folea (Technical University of Cluj-Napoca, Romania)
- A-M3 - 2 **Modeling and Simulation of an Induction Drive with Application to a Small Wind Turbine Generator**
Levente Tamas, Zoltan Szekely (Technical University of Cluj-Napoca, Romania, Purdue University Calumet, USA)
- A-M3 - 3 **Different tracking strategies for optimizing the energetic efficiency of a photovoltaic system**
Catalin Alexandru, Claudiu Pozna (Transilvania University of Brasov, Romania)
- A-M3 - 4 **A Virtual Instrumentation-Based On-line Determination of a Single/Two Phase Induction Motor Drive Characteristics at Coarse Start-Up**
C. Suciu, R. Câmpeanu, A. Câmpeanu, I. Mărgineanu, A. Dănilă, (Transilvania University of Brasov, Romania)
- A-M3 - 5 **An extension of the El Gamal encryption algorithm**
Stelian Flonta, Liviu Miclea (Technical University of Cluj-Napoca, Romania)
- A-M3 – 6 **Mathematical Modeling with Genetic Algorithms of the Impact of some Marketing, Innovation and Environmental Protection Expenses in a Firm**
Laura Bacali, Lucian Tudose, Roxana Carmen Cordos (Technical University of Cluj-Napoca, Romania)
- A-M3 – 7 **The Optimization of the Single/Two Phase Induction Motor Start-Up with Electronically Switched Capacitor**
Adrian Danila, Ion Margineanu, Radu Campeanu, Constantin Suciu, I. Boian (Transilvania University of Brasov, Romania)
- A-M3 – 8 **Drinking Water Quality Improvement by Physical Methods, using Middle-Frequency Inverters**
Dumitru Vaju, Clement Festila, Grigore Vlad (S.C. I.C.P.E.-Bistrita S.A., Technical University of Cluj-Napoca, Romania)

- Industrial Automation Systems Monitoring Using Rapid Deployment Technologies**
 A-M3 – 9 Ioan Stoian, Eugen Stancel, Victor Feurdean, Lucia Feurdean, Sorin Ignat, Magdalena Cadis (*S.C.IPA S.A. Cluj Subsidiary, INCDTIM -National Institute for R&D of Isotopic and Molecular Technologies, Romania*)
- Improving Classification Performance on Real Data through Imputation**
 A-M3 – 10 Camelia Vidrighin, Tudor Muresan, Rodica Potolea (*Technical University of Cluj-Napoca, Romania*)
- Engine Control System for Multiple Combustion Modes**
 A-M3 – 11 Dan Bonta, Vasile Tulbure, Clement Festila (*Romanian Railway Administration, Ecological University of Bucharest, Technical University of Cluj-Napoca, Romania*)
- Voice Synthesis Application based on Syllable Concatenation**
 A-M3 – 12 Ovidiu Buza, Gavril Ioan Todorean, Jozsef Domokos, Arpad Zsolt Bodo (*Technical University of Cluj-Napoca, Sapientia University of Tirgu Mures, Romania*)
- Three-phase Power Supplying System for Induction Motor of the Diesel-electric Locomotive**
 A-M3 – 13 Mihai Huzau, Eva-Henrietta Dulf, Vasile Tulbure, Clement Festila (*Romanian Railway Administration, Technical University of Cluj-Napoca, Ecological University of Bucharest, Romania*)

Sat, May 24
 11:15 – 12:00

Multimedia Session 8

A – M4 Quality of experiments and applications

IPA Showroom

Chairs

I. Kovács, IPA Cluj-Napoca, Romania
 R. Marschalko, Technical University of Cluj-Napoca, Romania

- A-M4 - 1 **Model for developing design of the electronic courses**
 Daniela Popescu, Sorin Popescu, Calin Neamtu, M. Dragomir (*Technical University of Cluj-Napoca, Romania*)
- A-M4 – 2 **Operating Space of a Bidirectional PWM AC-to-DC Converter Applied in Active Line-Conditioning**
 Robert Paku, Richard Marschalko (*Robert Bosch, Hungary, Technical University of Cluj-Napoca, Romania*)
- A-M4 – 3 **Four Quadrant Log-Domain Analog Current Multiplier**
 Robert Groza, Lelia Festila, Erwin Szopos (*Technical University of Cluj-Napoca, Romania*)
- A-M4 - 4 **Automated System at Variable Dosing Pumps for Maintain the pH in Suspensions Clarifiers from Water Treatment Plants**
 Radu Pop, Antoniu Domsa (*Cluj, Technical University of Cluj-Napoca, Romania*)

Sat, May 24
 9:00 - 9:45

Poster Session 5

IPA Showroom

Chairs

E. Stâncel, IPA Cluj-Napoca
 I. Birou, Technical University of Cluj-Napoca

- P5 - 1 **Power Curve Experimental Determination of an AirX Type Wind Turbine**
 Mihai Tiberiu Lates, Raluca Septimia Lates (*Transilvania University of Brasov, Romania*)
- P5 - 2 **Definition of Demanded Accuracy of Approximation of Function of Image Restoration**
 Igor Mardare, Sergei Andronic (*Technical University of Moldova*)

- P5 - 3 **Adaptive LMS Algorithm System Identification using LabVIEW**
Erwin Szopos, Marina Topa, Irina Dornean, Robert Groza (*Technical University of Cluj-Napoca, Romania*)
- P5 - 4 **Experimental, high frequency induction heating circuit**
Cristian Tudoran (*National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania*)
- P5 - 5 **Algorithm for developing a Learning Management System**
Daniela Popescu, Calin Neamtu, Sorin Popescu (*Technical University of Cluj-Napoca, Romania*)
- P5 - 6 **Numerical Simulation of the Human Visual Function for an Emmetropic Eye**
Daniela Mariana Barbu (*Transilvania University of Brasov, Romania*)
- P5 - 7 **Transferring Medical Records to CD/DVD Using DICOM Standard**
Alin Cordos, Mihaela Hedesi, Bogdan Feldrihan, Marius Rotariu (SC PixelData SRL, "*Iuliu Hatieganu*" *Medicine and Pharmacy University of Cluj-Napoca, Romania*)
- P5 - 8 **Factors that Influences the Behavior of the Human Body to Shocks and Vibrations**
Daniela Mariana Barbu, Ion Barbu (*Transilvania University of Brasov, Romania*)
- P5 - 9 **New product development – policies and tactics**
Corina Adriana Dobocan, Ioan Blebea, Daniela Popescu, Ramona Maria Florea, Rus Diana, Vlad Camelia (*Technical University of Cluj-Napoca, Romania*)
- P5 - 10 **A software engineering outlook on integrated management systems**
Sorin Popescu, Mihai Dragomir, Daniela Popescu (*Technical University of Cluj-Napoca, Romania*)
- P5 - 11 **Modeling and Numerical Simulation of an Automated System for Control of pH Value in Water Treatment Plants**
Antoni Domsa, Radu Pop (*Technical University of Cluj-Napoca, Water Company Somes, Cluj, Romania*)
- P5 - 12 **802.11n - the network standard that will unwire the network world**
Dan Crasnic (*Technical University of Cluj-Napoca, Romania*)

Technical University of Cluj-Napoca, 26 - 28 Baritiu Street

Sat, May 24 12:00 – 13:00	Plenary session IV. Closing session	Room 40
12:30-12:50	Architectural Concepts for Embedded Systems in Safety-critical Applications , Wolfgang Halang, Fern University in Hagen, Germany.	
12:50 -13:10	Spin-off initiative Joan Battle, University of Girona, Spain	

Sport Hotel, Gheorghe Cosbuc Street 15, Cluj-Napoca

Sat, May 24 13:30 – 15:00	Lunch	
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TUTORIAL 1

Statistical Screening Methods Targeting "Zero Defect" IC Quality and Reliability

PRESENTER

ADIT SINGH, *Auburn University, USA*

AUDIENCE

Test and Reliability Engineers, Engineering Managers, Reliability and Quality Assurance Managers, Researchers and Research Students.

DESCRIPTION

Integrated circuits have traditionally all been tested identically in the manufacturing flow. However, as the detection of subtle manufacturing flaws becomes ever more challenging and expensive in aggressively scaled nanometer technologies, innovative new statistical screening methods are being developed that attempt to improve test effectiveness and optimize test costs by adaptively subjecting “suspect” parts to more extensive testing. The idea is similar to security screening at airports. Such methods fall into two broad categories: those that exploit the statistics of defect distribution on wafers, and those that exploit the correlation in the variation of process and performance parameters on wafers. This tutorial presents test methodologies that span both these categories, and illustrates their effectiveness with results from a number of recently published experimental studies on production circuits from several companies.

Note. This tutorial is part of the annual IEEE Computer Society TTTC Test Technology Educational Program (TTEP) 2008, chairs Dimitris Gizopoulos (U Piraeus, Greece) and Roy Kaushik (Purdue University, USA).

TUTORIAL 2

Control of Power System. Concepts and Implementation

S. St. Iliescu, Ioana Făgărășan,
Automatic Control and Industrial Informatics Department, Automatic Control and Computers Faculty,
University POLITEHNICA of Bucharest, Romania, {iliescu, ioana}@shiva.pub.ro

Abstract

The power system domain was and will be a dynamic and prosperous field regarding the process control theory and practice. The rapid development of information technology and communication (ITC) has allowed the appearance of an emerging economy based on digital and globalization techniques of economy at mondial level. The impact of these developments has also been enlarge on power system industry, in particular to the electrical power systems (EPS): opening of energy market, increasing of EPS complexity due to the new control and operation demand of the EPS and to the new interconnecting constraints. In this context, the electrical power system (EPS), as part of the power system (PS), is forced to respond at new technical, economical and strategical problems that imply various approaches. These approaches must be started from the basic characteristics of an EPS: simultaneous production and consumption of energy; geographical area distribution; auto regulatory properties for the majority of power processes from an EPS, but with a relatively high degree of natural static ratio; combination of rapid and slow processes; strict quality criteria which must be met by the generated power; and uninterrupted power supply, especially for industrial consumers.

The structure and coordination of the electrical power system (EPS) are presented in this tutorial with respect to three modern concepts: system theory, systems analysis and multi-agent techniques.

The above mentioned concepts are discussed approaching the EPS behaviour and functioning based on actual problems regarding the globalisation of the energy production and transportation, integration of different renewable sources of energy with the conventional power systems and the safety aspects of connecting the distributed generation to the interconnected large system.

An overview of the basic principles of control and supervising of EPS will be done, from a theoretical and a practical point of view.