



**SAPIENTIA UNIVERSITY**  
DEPARTMENT OF ELECTRICAL ENGINEERING  
DEPARTMENT OF MECHANICAL ENGINEERING

**2<sup>nd</sup> International Conference on Recent Achievements in Mechatronics, Automation,  
Computer Science and Robotics**

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**CONFERENCE PROGRAM**

**MACRo**  

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**2010** 

[www.macro.ms.sapientia.ro](http://www.macro.ms.sapientia.ro)

May 14-15, 2010  
Tîrgu Mureş, Romania

## May 14, 2010

8 <sup>00</sup> -9 <sup>00</sup>	<b>Registration</b> (Aula)	
	<b>Opening ceremony</b> (Room 114)	
9 <sup>00</sup> -9 <sup>20</sup>	Welcome from the Organizing committee and foreword from:	<b>László DÁVID</b> , Rector of SAPIENTIA University
		<b>Gyula SZÉKELY</b> , Dean of Technical and Human Sciences Faculty
<b>Plenary session</b> Chair: László Ferenc MÁRTON (Room 114)		
9 <sup>20</sup> -10 <sup>10</sup>	<b>“Bolyai János”</b> Plenary lecture	<b>Zsolt LACZIK</b> , Department of Engineering Science, University of Oxford <i>3D Diffractive Beam Shaping</i>
10 <sup>10</sup> -10 <sup>40</sup>	Invited lecture	<b>Attila SIPOS</b> , Department of Telecommunications, Budapest University of Technology and Economics <i>On the Way Toward the NGN and NGOSS</i>
10 <sup>40</sup> - 11 <sup>10</sup>	Invited lecture	<b>Tibor TORÓ</b> , Corresponding member of the Hungarian Academy of Sciences <i>From Bolyai's Hidden Treasures to Einstein's Last Dream</i>
11 <sup>10</sup> - 11 <sup>20</sup>	Coffee break	
<b>Industrial Reality session</b> Chair: László Ferenc MÁRTON (Room 114)		
11 <sup>20</sup> - 11 <sup>50</sup>	Invited lecture	<b>Levente NAGY</b> , CEE Business Development Manager, Fujitsu Microelectronics <i>Human - Machine Interfaces and Applications</i>
11 <sup>50</sup> - 12 <sup>20</sup>	Invited lecture	<b>András OLTEÁN-PÉTER</b> Executive director, Nivelco Romania S.R.L. <i>Nivelco News</i>
<b>Industrial Reality demo session</b> (Aula)		
12 <sup>20</sup> -14 <sup>30</sup>	Company presentations, demos	
<b>13<sup>00</sup>-14<sup>20</sup> Lunch</b> (Campus dining-hall)		
<b>14<sup>30</sup> – Parallel sessions</b> (Rooms 114, 230 and 231)		
<b>19<sup>00</sup> – Festive dinner</b> (Senate Hall)		

<p>14<sup>30</sup> - <b>Computer Science, Telecommunications and Signal Processing section</b> (Room 114)</p> <p>Chairs: Piroska HALLER, László BAKÓ</p>	
14 <sup>30</sup> -14 <sup>50</sup>	Virgil CAZACU, Dan ROBU, Iuliu SZÉKELY, Florin SANDU, <i>ECG Tele-monitoring Using Intelligent Network Services</i>
14 <sup>50</sup> -15 <sup>10</sup>	Virgil CAZACU, Laura COBARZAN, Dan ROBU and Florin SANDU, <i>Localization of the Mobile Calls Based on SS7 Information and Using Web Mapping Service</i>
15 <sup>10</sup> -15 <sup>30</sup>	Gyula FARKAS, Béla GENGE, Piroska HALLER, <i>A Platform for Implementing Secure Wireless Ad Hoc Networks</i>
15 <sup>30</sup> -15 <sup>50</sup>	Attila ASZALOS, József DOMOKOS, Tamás VAJDA, Sándor Tihamér BRASSAI, László DÁVID, <i>EXAMBREV Integrated System for Patent Application Overview</i>
15 <sup>50</sup> -16 <sup>10</sup>	Coffee break
16 <sup>10</sup> -16 <sup>30</sup>	László BAKÓ, Sándor Tihamér BRASSAI, Lajos LOSONCZI, László F. MÁRTON, <i>Embedded System Based EEG Signal Processing</i>
16 <sup>30</sup> -16 <sup>50</sup>	László F. MÁRTON, László SZABÓ, Margit ANTAL, Katalin GYÖRGY, <i>Analysis of Neuroelectric Oscillations of the Scalp EEG Signals</i>
16 <sup>50</sup> -17 <sup>10</sup>	Zoltán GERMÁN-SALLÓ, <i>Nonlinear Filtering of Electrocardiogram Signals</i>
17 <sup>10</sup> -17 <sup>30</sup>	Vlad TURCU, <i>Equivalence Relations for Modulated Signals and Implications on Astronomical Modulators</i>

14<sup>30</sup> – **Automation and Electrical Drives section**  
(Room 230)

Chairs: Mária IMECS, András KELEMEN

14 <sup>30</sup> -14 <sup>50</sup>	Levente SZALONTAI, Ernő KOVÁCS, Csaba BLÁGA, <i>Investigation of the Solenoid Switch of an Electric Starter Motor Using Fem Model</i>
14 <sup>50</sup> -15 <sup>10</sup>	Csaba BLÁGA, Ernő KOVÁCS, <i>Performance Curves of Starter Based on Mathematical Model</i>
15 <sup>10</sup> -15 <sup>30</sup>	Katalin GYÖRGY, László DÁVID, <i>Comparison between Centralized and Distributed Model Predictive Control</i>
15 <sup>30</sup> -15 <sup>50</sup>	Mária IMECS, <i>Vector Control of the Current-excited Synchronous Generators</i>
15 <sup>50</sup> -16 <sup>10</sup>	Coffee break
16 <sup>10</sup> -16 <sup>30</sup>	Cornel Aurel STANCA, Veneția SANDU, Iuliu SZÉKELY, <i>Control System for Supercapacitor based ICE Catalyst Preheating</i>
16 <sup>30</sup> -16 <sup>50</sup>	Viktor FÜVESI, Ernő KOVÁCS, Csaba BLÁGA, <i>Measurement and identification of a starter motor system</i>
16 <sup>50</sup> -17 <sup>10</sup>	Csaba SZABÓ, <i>Synchronous Motor Drive with Double Field-Orientation Working at Maximum Power Factor</i>
17 <sup>10</sup> -17 <sup>30</sup>	Ioan Iov INCZE, <i>Simulation of Position Identification in Electrical Drives Equipped with Incremental Encoder</i>
17 <sup>30</sup> -17 <sup>50</sup>	Ernő KOVÁCS, Csaba BLÁGA, <i>Performance curve of alternator based on mathematical model</i>

<p>14<sup>30</sup> - <b>Mechatronics and Robotics section</b> (Room 231)</p> <p>Chairs: Dénes HOLLANDA, Márton MÁTHÉ</p>	
<p>Invited lecture 14<sup>30</sup>-15<sup>10</sup></p>	<p>Marian MORAR (SKF Romania), <i>Automatic lubrication with consistent grease</i> (<i>Lubrifierea automată cu unsoare consistentă</i>)</p>
<p>15<sup>10</sup>-15<sup>30</sup></p>	<p>Dominic BIRÓ, Sándor PAPP, László JAKAB-FARKAS, <i>Microstructural Modification of (Ti 1-xAlxSiy)N Thin Film Coatings as a Function of Nitrogen Concentration</i></p>
<p>15<sup>30</sup>-15<sup>50</sup></p>	<p>Erzsébet FALUVÉGI, Luciana CRISTEA, <i>Creative Technique in the Domain of Bevel Gears</i></p>
<p>15<sup>50</sup>-16<sup>10</sup></p>	<p>Coffee break</p>
<p>16<sup>10</sup>-16<sup>30</sup></p>	<p>Mesut ACAR, Alper GERCEK, Burak TASASIZ, Z. Yağız BAYRAKTAROGLU, Hikmet KOCABAS, <i>Design of a 12-Dof Biped Robot</i></p>
<p>16<sup>30</sup>-16<sup>50</sup></p>	<p>Zoltán FORGÓ, <i>Structural Analysis of 6 Dof 3-PRRS Parallel Mechanism</i></p>
<p>16<sup>50</sup>-17<sup>10</sup></p>	<p>Dénes HOLLANDA, Márton MÁTÉ, <i>On Some Peculiarities of Paloid Bevel Gear Worm-Hobs</i></p>
<p>17<sup>10</sup>-17<sup>30</sup></p>	<p>András KAKUCS, <i>The Electro-Hydraulic Analogy</i></p>
<p>17<sup>30</sup>-17<sup>50</sup></p>	<p>Levente BAKOS, <i>Basic Trends in the Development of the Holonic Manufacturing Concept</i></p>

## Industrial reality

12<sup>20</sup>-14<sup>30</sup>

Company presentations, demos (Aula)



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530224 - Miercurea-Ciuc str. Kossuth Lajos (Florilor) nr. 36 Jud. Harghita, România  
Tel.: +40 - 266 - 371200; Fax: +40 - 266 - 371199; <http://www.nextra.ro>; e-mail: [office@nextra.ro](mailto:office@nextra.ro)  
CUI: R-3495397 COD IBAN BCR: R038 RNCB 2900 0000 0081 0001

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SC NIVELCO Tehnica Măsurării SRL

### S.C. NIVELCO Tehnica Măsurării S.R.L.

540069 Tîrgu Mureş

Str. Ion Creangă nr. 3/1.

☎ : +40-265-30.61.92

☎ : +40-265-30.61.92

☎ : +40-365-43.00.34

✉ : [romania\(at\)nivelco.com](mailto:romania(at)nivelco.com)

Website: [www.nivelco.ro](http://www.nivelco.ro)

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### FUJITSU Microelectronics Europe GmbH

Adresse: D-6322 Langen, Pittlerstrasse 47.

☎ Tel: +49 (0) 6103 6900

☎ Fax: +49 (0) 6103 690122

✉ E-mail: [info\(at\)fme.fujitsu.com](mailto:info(at)fme.fujitsu.com)

Website: [www.emea.fujitsu.com/microelectronics](http://www.emea.fujitsu.com/microelectronics)

GERMANY



### LAMBDA Communications Ltd.

Tîrgu Mureş

Str. Avram Iancu Nr. 37

Tel. +40-265-215218

✉ [lajos\(at\)lambda.ro](mailto:lajos(at)lambda.ro)

Website: [www.lambda.ro](http://www.lambda.ro)

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### S.C. LECO IMPEX S.R.L.

Tîrgu Mureş

Str. Gheorghe Doja nr. 260.

Tel.: +40-265-253110, 220268

Fax: +40-265-253727

E-mail: [office\(at\)leco.ro](mailto:office(at)leco.ro)

Website: [www.leco.ro](http://www.leco.ro)

ROMANIA

*May 15, 2010*

### **Optional trip to the historical Szekler (Székely) region of Transylvania**

- Departure by bus from the Sapientia University Campus at 9<sup>00</sup>
- Arrival back to campus at ~19<sup>00</sup>

**Route:** Tîrgu Mures (Marosvásárhely) - Gheorgheni (Gyergyószentmiklós) - Lăzarea (Gyergyószárhegy) - Miercurea-Ciuc (Csíkszereda) - Corund (Korond) - Tîrgu Mures (Marosvásárhely) ~340km

Highlights of the trip include:

- Visiting Gyergyószárhegy, one of the oldest settlements in the area (Harghita County), and is now a tourist and cultural centre. It has various local attractions, including the Lázár castle (1450), the co-located museum, the Roman Catholic Parish Church and its fortress, Saint Anthony Chapel and the Franciscan monastery.
- Lunch in Gyergyószárhegy.
- Visiting the Late Baroque Franciscan Church (1802) in Şumuleu / Csíksomlyó near Csíkszereda. It is best known of the annual pilgrimage, called "csíksomlyói búcsú" in Hungarian, which takes place on Whitsundays. Traditionally the pilgrims of the region, ►[Szeklers](#) and ►[Csángós](#), take all the way on foot from their home to Csíksomlyó, depending on the distance starting their journey days before. Nowadays, Csíksomlyó pilgrimage has become the biggest one in the Carpathian basin, hundreds of thousands of Hungarians and foreigners taking part in it from all over the world.
- Bacon-roasting picnic on the Hargita mountain (on-route from Csíkszereda to Korond),
- Souvenir shopping in the village of Korond famous for its crockery craftsmen.

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# CONFERENCE PROGRAM

*at a glance*

<b>Friday, May 14</b>	
8 <sup>00</sup> - 9 <sup>00</sup>	Registration (Aula)
9 <sup>00</sup> - 9 <sup>20</sup>	Welcome and foreword (Room 114)
9 <sup>20</sup> - 11 <sup>10</sup>	“Bolyai János” plenary lecture (Room 114)
10 <sup>10</sup> -11 <sup>10</sup>	Invited lectures (Room 114)
11 <sup>10</sup> - 11 <sup>20</sup>	Coffee break (Aula)
11 <sup>20</sup> -12 <sup>20</sup>	Industrial reality session (Room 114)
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14 <sup>30</sup> -	Parallel sessions (Rooms 114, 230 and 231)
19 <sup>00</sup> -	Festive dinner (Senate Hall)

<b>Saturday, May 15</b>	
9 <sup>00</sup> ~19 <sup>00</sup>	Trip to the historical Szekler (Székely) region of Transylvania

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*Extended versions of the best papers of the conference will be invited for publication in the [Acta Universitatis Sapientiae](#), the International Scientific Journal of the [Sapientia University](#), Electrical and Mechanical Engineering series.*

This conference is organized with the financial support of the "Szülőföld Alap" Foundation.

