



**University of Miskolc,  
Hungary**



**MultiScience - XXIX. microCAD  
International Multidisciplinary  
Scientific Conference  
9-10 April 2015**

**PROGRAMME**

## **WELCOME ADDRESS FROM THE RECTOR**

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The University of Miskolc, which is the legal successor of the Academy of Mining and Metallurgy (Bergschule) founded in 1735 in Selmecebánya (Banska Stiavnica), extends its greetings to the Reader on the occasion of organising the *XXIXth MultiScience - microCAD International Multidisciplinary Scientific Conference*.

The scope of this conference is exceptionally wide. Experts in engineering, economics, humanities and health sciences present and discuss their scientific results. Having completed profound scientific investigations and having reached interesting conclusions, all the active participants should be proud of their achievements and all the colleagues and guests should be interested in the scientific value behind the research teams. It is also our hope that the professional and personal relations between the experts will remarkably contribute to the efficient co-operation between participants and institutions as well.

Over the last 28 years, this annual international conference has become the most significant meeting of professionals at the University of Miskolc.

More than 7700 presentations from about 15 different countries, 41 thousand pages of publications and many agreements signed between universities and numerous academic and research proposals witness the achievements of the last 28 years.

I recommend you the program of the *XXIXth MultiScience - microCAD International Multidisciplinary Scientific Conference* in the hope that the presentations, discussions and social events will give you a golden opportunity to cherish and widen your professional relations. I truly believe that your presence, either as a proud speaker or as an interested participant, will contribute to the success of this great scientific event.

Prof. András TORMA  
Rector of the  
University of Miskolc

## SCIENTIFIC COMMITTEE OF THE CONFERENCE

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<b>Chairman:</b>	<b>Tamás KÉKESI</b>	Pro-Rector for International Relations and Scientific Affairs
<b>Members:</b>	<b>Péter SZÚCS</b>	Dean of the Faculty of Earth Science and Engineering
	<b>Árpád Bence PALOTÁS</b>	Dean of the Faculty of Materials and Metallurgical Engineering
	<b>Edgárd BERTÓTI</b>	Dean of the Faculty of Mechanical Engineering and Informatics
	<b>Ákos FARKAS</b>	Dean of the Faculty of Law
	<b>Mariann SOMOSI VERES</b>	Dean of the Faculty of Economics
	<b>Mária KOVÁCS ILLÉS</b>	Dean of the Faculty of Humanities
	<b>Emőke KISS-TÓTH</b>	Dean of the Faculty of Health Sciences

## DETAILED PROGRAMME

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of the MultiScience - XXIX. microCAD International Multidisciplinary Scientific Conference  
University of Miskolc, 9-10 April 2015

### 9 April (Thursday) 2015

10<sup>30</sup> – 10<sup>35</sup>      **International Scientific Conference**  
**Opening address**  
*András TORMA – professor, Rector of the University of Miskolc*  
Venue: Lecture hall, Bld.

#### **PLENARY SESSION**

Venue: Lecture hall, Bld.

10<sup>35</sup> – 11<sup>05</sup>      **Pál TARDY** *professor, Association of the Hungarian Steel Industry*  
**Climate Policy of the EU and the Steel Industry**

11<sup>05</sup> – 11<sup>35</sup>      **György SÁRKÖZI** *director, Észak-magyarországi Közlekedési Központ Zrt.*  
**Effects of Global Megatrends within the Hungarian Automotive Industry**

11<sup>35</sup> – 12<sup>05</sup>      **Tamás KÉKESI** *vice-rector, University of Miskolc*  
**Development and Recycling Environment Friendly Soldering Materials for the Automotive Industry**

12<sup>05</sup> – 12<sup>15</sup>      *Break*

12<sup>15</sup> – 13<sup>30</sup>      **Reception**  
Venue: Main Building A/4. Assembly Hall (*Entry: only with invitation cards*)

13<sup>30</sup> – 14<sup>00</sup>      *Break*

14<sup>00</sup> – 18<sup>00</sup>      **Presentations in the parallel sessions**  
Venue: as listed in the section table

19<sup>00</sup> – 21<sup>30</sup>      **Gala Dinner**  
Venue: University Dining Hall (*Entry: only with invitation cards*)

### 10 April (Friday) 2015

9<sup>00</sup> - 12<sup>00</sup>      **Presentations in the parallel sessions**  
Venue: as listed in the section table

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## OPTIONAL PROGRAMME

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10 April 2015      13<sup>00</sup> - 22<sup>00</sup>      **Excursion to TOKAJ**

## REGISTRATION FOR THE CONFERENCE

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*Venue:* The Registration Desk is opposite to the entrance of the Main Building (A/4.)

*Registration is open:*

<b>8 April (Wednesday) 2015</b>	---	12 <sup>00</sup> - 19 <sup>00</sup>
<b>9 April (Thursday) 2015</b>	8 <sup>00</sup> - 12 <sup>30</sup>	13 <sup>30</sup> - 17 <sup>00</sup>
<b>10 April (Friday) 2015</b>	8 <sup>00</sup> - 11 <sup>00</sup>	----

## ORGANISATIONAL COMMITTEE OF THE CONFERENCE

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The organiser of the Conference is the **UNIVERSITY OF MISKOLC**

**Address of the Scientific and Organisational Committee:**  
*University of Miskolc, Rector's Office, International Affairs Team*  
*H-3515 Miskolc Egyetemváros*  
*Phone: (36-46) 565-111/ ext. 1016*  
*Fax: (36-46) 563-423*  
*e-mail: microcad@uni-miskolc.hu*  
*www.uni-miskolc.hu/~microcad*

## SESSIONS AND VENUES OF THE CONFERENCE

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Sign	Name	Venue
<b>Plenary</b>	Plenary session	Lecture hall XXI. Bld. A/6. groundfloor, 32.
<b>A</b>	Environment- and Energy Management	Lecture hall VII. Bld. A/1. 1 <sup>st</sup> floor, 102.
<b>B</b>	Applied Materials Science and Nanotechnologies	Room 312. Bld. B/1. 3 <sup>rd</sup> floor, 312.
<b>C1</b>	Logistics	Room 106. Bld. A/5. 1 <sup>st</sup> floor, 106.
<b>C2</b>	Natural Sciences	Room 13. Bld. A/1. mezzanine, 13.
<b>C3</b>	Electrical Engineering and Informatics	Room 311. Bld. A/1. 3 <sup>rd</sup> floor, 311
<b>D1</b>	Innovative Mechanical Engineering Technologies	Room 1. Bld. C/1. groundfloor, 1.
<b>D2</b>	Mechanical Engineering Design and Technologies, Numerical Modelling and Laboratory Measurements	Room 206. Bld. A/3. 2 <sup>nd</sup> floor, 206.
<b>D3</b>	Innovative mechanical engineering design	Room 105. Bld. A/5. 1 <sup>st</sup> floor, 105.
<b>E</b>	Legal Sciences	Faculty of Law Bld. A/6. groundfloor, 31.
<b>F</b>	Economic Challenges in the 21 <sup>st</sup> Century	Room 11. Bld. A/1. mezzanine, 11.
<b>G</b>	Humanities and Social Sciences	Room 306. Bld. C/1. 3 <sup>rd</sup> floor, 306.
<b>H</b>	Health and Medical Sciences	Bosch Room Bld. B3-B4. 2 <sup>nd</sup> floor, 207.

# SUSTAINABLE NATIONAL RESOURCES MANAGEMENT SYMPOSIUM

**Chairman:** Gábor MUCSI *assoc. professor*

## A: ENVIRONMENT- AND ENERGY MANAGEMENT

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**VENUE:** Lecture hall VII., Bld. A/1. 1<sup>st</sup> floor, 102.

**Chairman:** Ljudmilla BOKÁNYI *assoc. professor*

**Secretary:** Ádám RÁCZ *research assistant*

**Date:** April 9, 2015

- 14.00 **Roland Dócs** University of Miskolc, Hungary  
*Determination of Connate Water Saturation Using Gas Displacement Method*
- 14.20 **Marin-Silviu Nan, Tomus Ovidiu-Bogdan, Ungur Andreea, Popescu Razvan** University of Petrosani, Romania  
*Comparative Analysis of Transportation Flow Regulating Systems in Oil Pipelines*
- 14.40 **Katalin Bohács, Zoltán Pap, Tamás Magyar, Zoltán Molnár** University of Miskolc, Hungary  
*Some Segments of the Project Critical*
- 15.00 **László Kis** University of Miskolc, Hungary  
*Mechanical Net Torque Optimization of Sucker-Rod Pumping Units*
- 15.20 *Break*
- 15.40 **Richárd Tompa<sup>1</sup>, László Ézsiás<sup>2</sup>** University of Miskolc<sup>1</sup>, Colas Északkő Ltd.<sup>2</sup>, Hungary  
*New Testing Equipment to Determine the Swelling Clay Content in Central Laboratory of Colas Északkő Ltd., Tállya*
- 16.00 **Claudia Butean<sup>1</sup>, Cristina Mihali<sup>1</sup>, Angela M. Michnea<sup>2</sup>, Zoita M. Berinde<sup>1</sup>, Anamaria Gavra<sup>2</sup>, Mirela Simionescu<sup>2</sup>** Technical University of Cluj Napoca, North University Center of Baia Mare<sup>1</sup>, Maramures Environmental Protection Agency<sup>2</sup>, Romania  
*Nitrogen Species in Wet Atmospheric Deposition in Maramures County*
- 16.20 **Ádám Koncz** University of Miskolc, Hungary  
*Innovative Developments in Sucker Rod Pumped Well Analysis*
- 16.40 **Attila Garami** Ministry of National Development, Hungary  
*Petroleum Coke Fired Steam Power Plant at the Danube Refinery*
- 17.00 *Summary*

# SUSTAINABLE NATIONAL RESOURCES MANAGEMENT SYMPOSIUM

**Chairman:** Gábor MUCSI *assoc. professor*

## A: ENVIRONMENT- AND ENERGY MANAGEMENT

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**VENUE:** Lecture hall VII., Bld. A/1. 1<sup>st</sup> floor, 102.

**Chairman:** Ljudmilla BOKÁNYI *assoc. professor*

**Secretary:** Ádám RÁCZ *research assistant*

**Date:** April 10, 2015

- 9.00 **Zoltán Fejes, Péter Szűcs, Zsombor Fekete, Endre Turai, Mátyás Krisztián Baracza** University of Miskolc, Hungary  
*A Geothermal System on the Western Slopes of the Tokaj Mountains*
- 9.20 **Csaba Ilyés, László Kompár** University of Miskolc, Hungary  
*Interpretation of Monitoring Data from the Miskolc University Meteorological Station*
- 9.40 **Sorin Mihai Radu, Andras Iosif** University of Petrosani, Romania  
*Improved Mechanised Extraction Technologies in Underground Hardcoal Mines from Jiul Valley-Romania*
- 10.00 **László Kompár<sup>1</sup>, Péter Szűcs<sup>1</sup>, László Palcsu<sup>2</sup>, József Deák** University of Miskolc<sup>1</sup>, Institute for Nuclear Research, Hungarian Academy of Sciences<sup>2</sup>, GWIS Ltd.<sup>3</sup>, Hungary  
*Tritium Peak Method and 3H/3HE Dating Technique use for Estimating Shallow Groundwater Recharge*
- 10.20 **Dorin Tataru, Stanci Andreea Cristina, Stanci Aurora, Radu Sorin Mihai** University of Petrosani, Romania  
*Computer Simulation of Slag and Fly Ash Dust Transmission Around the Cet Paroseni Tailing Ponds*
- 10.40 *Break*
- 11.00 **Ildikó Bölkeny, József Konyha** University of Miskolc, Hungary  
*Prevention of Hydrate Formation On Gas Well*
- 11.20 **Andreea Cristina Stanci, Aurora Stanci, Dorin Tataru, Nan Marin Silviu** University of Petrosani, Romania  
*Use of Curved Panels for the Noise Reduction Produced by Belt Conveyors from Oltenia Energy Complex*
- 11.40 **Roland Szabó, Gábor Mucsi** University of Miskolc, Hungary  
*Generally About Geopolymer Foams*
- 12.00 **László Kompár<sup>1</sup>, Péter Szűcs<sup>1</sup>, László Palcsu<sup>2</sup>, Mihály Braun<sup>2</sup>** University of Miskolc<sup>1</sup>, Institute for Nuclear Research, Hungarian Academy of Sciences<sup>2</sup>, Hungary  
*Complex Isotopehydrochemical Method to Investigate Shallow Groundwater Recharge*
- 12.20 **Péter Kókai, Csaba Póliska, Bernadett Csordás** University of Miskolc, Hungary  
*An Assesment of the Correlation Between Fuels and Depositions in the Combustion Chamber of the Miskolc Biomass Heating Plant*
- 12.40 *Summary*



# APPLIED MATERIALS SCIENCE AND NANOTECHNOLOGY SYMPOSIUM

**Chairman:** Tamás TÖRÖK *professor*

## **B: APPLIED MATERIALS SCIENCE AND NANOTECHNOLOGY**

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**VENUE:** Room 312, Bld. B/1. 3<sup>rd</sup> floor, 312.

**Chairman:** Tamás TÖRÖK *professor*

**Co-chairman:** László VARGA *assoc. professor*

**Secretary:** Imre BUDAVÁRI *PhD Student*

**Date:** April 9, 2015

- 14.00      **Ali H. Hasan Al-Azzawi, Péter Baumli, Gábor Mucsi** University of Miskolc, Hungary  
*Mechanical Alloying and Milling*
- 14.15      **Jürgen Antrekowitsch, Gernot Rösler** Montanuniversitaet Leoben, Chair of Nonferrous Metallurgy –  
CD Laboratory for Heavy Metal Recycling, Austria  
*Steel Mill Dust Recycling in the 21<sup>st</sup> Century*
- 14.30      **Gernot Rösler, Jürgen Antrekowitsch** Montanuniversitaet Leoben, Chair of Nonferrous Metallurgy –  
CD Laboratory for Heavy Metal Recycling, Austria  
*Product Upgrade of Waelz Oxide Using an Alternative Resource*
- 14.45      **Wolfram Bernhart** METSO, Austria  
*Processing of Tungsten Bearing Ores - Mineral Processing and Metallurgy*
- 15.00      **Zoltán Harangi, Gábor Nagy, Tamás Kékesi** University of Miskolc, Hungary  
*Leaching Behavior of the Anode Slime Generated by the Electrorefining of Sn-Ag-Cu Alloys*
- 15.15      *Break*

# APPLIED MATERIALS SCIENCE AND NANOTECHNOLOGY SYMPOSIUM

**Chairman:** Tamás TÖRÖK *professor*

## **B: APPLIED MATERIALS SCIENCE AND NANOTECHNOLOGY**

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**VENUE:** Room 312, Bld. B/1. 3<sup>rd</sup> floor, 312.

**Chairman:** Tamás TÖRÖK *professor*

**Co-chairman:** László VARGA *assoc. professor*

**Secretary:** Imre BUDAVÁRI *PhD Student*

**Date:** April 9, 2015

- 15.30 Peter Futás<sup>1</sup>, Alena Pribulová<sup>1</sup>, Stefan Niznik<sup>1</sup>, Gabriel Dúl<sup>1</sup>, László Varga<sup>2</sup> Technical University Košice, Slovakia<sup>1</sup>, University of Miskolc, Hungary<sup>2</sup>  
*The Elimination of Unfavourable Influence of the Steel Scrap in the Charge on the Cast Iron Quality*
- 15.45 Noémi László, Pál Tóth University of Miskolc, Hungary  
*3D Reconstruction of Turbulent Flames by Stereoscopic Photography*
- 16.00 Imre Budavári, László Varga, Dániel Molnár University of Miskolc, Hungary  
*Improvement the Gating- and Feeding System of the ASTM-B 108 Tensile Test Bar Using Control Volume Simulation*
- 16.15 Majoros Csaba Csaba Metál Zrt., Hungary  
*Nyomásos Alumínium-öntvény Gyártástechnológiája és Optimalizálása*
- 16.30 Laura Mádi, Jenő Dúl, Csaba Császár University of Miskolc, Hungary  
*Strength Properties Variation of Resin Bonded Core Materials Affected by Thermal Load*
- 16.45 Dávid Angel<sup>1</sup>, Márton Benke<sup>2</sup>, Dávid Cseh<sup>1</sup>, Valéria Mertinger<sup>1</sup> University of Miskolc<sup>1</sup>, MTA-ME Material Science Research Group, University of Miskolc<sup>2</sup>, Hungary  
*Residual Stress Evolution During the Production of an Automotive Component*
- 17.00 Zoltán Kéri<sup>1</sup>, Zsolt Leskó<sup>2</sup> University of Miskolc<sup>1</sup>, Nematik Győr Ltd.<sup>2</sup>, Hungary  
*Analyses of Aluminium High Pressure Die Casting Alloys' Mechanical Properties*
- 17.15 Viktória Dargai<sup>1</sup>, Hartmut Polzin<sup>2</sup>, László Varga<sup>1</sup>, Jenő Dúl<sup>1</sup> University of Miskolc, Hungary<sup>1</sup>, Bergakademie Freiberg, Germany<sup>2</sup>  
*Öntödei homokok granulometriai tulajdonságainak meghatározása képelemzéssel*
- 17.30 *Summary*

# MECHATRONICS AND LOGISTICS SYMPOSIUM

**Chairman:** Béla ILLÉS *professor*

## C1: LOGISTICS

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*This section is organized by the University of Miskolc and the Czestochowa University of Technology*

**VENUE:** Room 106., Bld. A/5. 1<sup>st</sup> floor, 106

**Chairman:** Béla ILLÉS *professor*

**Secretary:** Péter TELEK *assist. professor*

**Date:** April 9, 2015

14.00 *Opening Ceremony*

14.05 **Julio César Cancio Ferrer** ambassador, Republic of Cuba  
*Hungarian-Cuban-German Cooperation in the Field of Logistics Research and Higher Education*

14.20 **Gábor Bohács, Angéla Rinkács** Budapest University of Technology and Economics, Hungary  
*Adaptive Simulation-Based Concept for Construction Logistics*

14.35 **Péter Telek** University of Miskolc, Hungary  
*Computer Design of Materials Handling Equipment*

14.50 **Beáta Borodavko<sup>1</sup>, Béla Illés<sup>2</sup>, Ágota Bányai<sup>3</sup>** University of Miskolc, Hungary  
*The Sensibility Inspection of Supply Chains Based on Logistic Aspects*

15.05 **Corneliu Alexandrescu, Marin-Silviu Nan, Aurelian Nicola, Ioan Cucu** University Politehnica  
Bucuresti, Romania  
*Comparative Study on the Influence of Road Traffic on the Air Quality*

15.20 **József Kovács, Andrei Andras** University of Petrosani, Romania  
*Reliability Analysis of the Belt Conveyors at Vulcan Mine Plant, Jiul Valley, Romania*

15.35 **Béla Illés, János Németh** University of Miskolc, Hungary  
*Analysis of the Statically Forces of Belt Conveyors in Case of More than One Driving Points*

15.50 *Break*

# MECHATRONICS AND LOGISTICS SYMPOSIUM

**Chairman:** Béla ILLÉS *professor*

## C1: LOGISTICS

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*This section is organized by the University of Miskolc and the Czestochowa University of Technology*

**VENUE:** Room 106., Bld. A/5. 1<sup>st</sup> floor, 106

**Chairman:** Béla ILLÉS *professor*

**Secretary:** Péter TELEK *assist. professor*

**Date:** April 9, 2015

- 16.05 **Elke Glistau<sup>1</sup>, Michael Schenk<sup>1</sup>, Norge Isaias Coello Machado<sup>2</sup>** Otto von Guericke University, Germany<sup>1</sup>, Central University "Marta Abreu" of Las Villas, Santa Clara, Cuba<sup>2</sup>  
*Logistics Strategies and Tools*
- 16.20 **Heike Mrech** Hochschule Merseburg - University of Applied Sciences, Germany  
*STEM Education and the Talent Crisis in Logistics in Germany*
- 16.35 **Béla Illés<sup>1</sup>, József Gál<sup>2</sup>, Antal Véha<sup>2</sup>** University of Miskolc<sup>1</sup>, University of Szeged<sup>2</sup>, Hungary  
*Some Aspects of e-Commerce in Agriculture*
- 16.50 **Marta Kadlubek** Czestochowa University of Technology, Poland  
*Theoretical Aspects of Sustainable Development in Transport and Logistics*
- 17.05 **Katarzyna Sukiennik, Katarzyna Grondys, Iga Kott, Oksana Seroka-Stolka** Czestochowa University of Technology, Poland  
*The Importance of Supplier Selection Process in Business Relationships*
- 17.20 **Katarzyna Sukiennik, Beata Skowron-Grabowska, Tomasz Szczepanik** Czestochowa University of Technology, Poland  
*Growth of Transport Industry and Economic Development in Poland*
- 17.35 **János Korponai<sup>1,2</sup>, Ágota Bányainé Tóth<sup>2</sup>, Béla Illés<sup>2</sup>** Contitech Fluid Automotive Hungária Kft.<sup>1</sup>, University of Miskolc<sup>2</sup>, Hungary  
*Analyses of the Key Performance Indicators in the Logistics System*
- 17.50 **Péter Veres, Tamás Bányai, Béla Illés** University of Miskolc, Hungary  
*Design of Networking Service Systems*
- 18.05 *Summary*

# MECHATRONICS AND LOGISTICS SYMPOSIUM

**Chairman:** Béla ILLÉS *professor*

## C2: NATURAL SCIENCE

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**VENUE:** Room 13., Bld. A/1. mezzanine 13.

**Chairman:** Béla PARIPÁS *professor*

**Secretary:** Péter KÖRTESEI *assoc. professor*

**Date:** April 9, 2015

14.00 *Opening Ceremony*

14.05 **György Vikor** Guardian Orosháza Ltd., Hungary  
*Optical Properties of Dielectric Mirrors, Produced by Large Area Glass PVD Coating Technology*

14.20 **Béla Paripás, Béla Palásthy** University of Miskolc, Hungary  
*Angular Dependent Measurement and Evaluation of Autoionization Spectra of Helium*

14.35 **Csaba Takács<sup>1</sup>, I. Bárány<sup>2</sup>** University of Miskolc<sup>1</sup>, Kecskemét College<sup>2</sup>, Hungary  
*Numerical Evaluation of Relativistic Shock Waves in a Magnetized Plasma Dominated by Radiation*

14.50 **László Ujfaludi** Eszterházy Károly College, Hungary  
*Physics and Fine Arts - An Approach with System's Concept*

15.05 **Endre Kovács<sup>1</sup>, Michael Forrester<sup>2</sup>, Feodor Kusmartsev<sup>2</sup>** University of Miskolc, Hungary<sup>1</sup>,  
Loughborough University, United Kingdom<sup>2</sup>  
*Indications of Possible Chaos in Arrays of Single-domain Nanomagnets*

15.20 *Break*

15.35 **Attila Körei** University of Miskolc, Hungary  
*Cell Formation Algorithms Based on Formal Concepts*

15.50 **Péter Körtesi<sup>1</sup>, Desislava Georgieva<sup>2</sup>** University of Miskolc, Hungary<sup>1</sup>, "Anghel Kanchev"  
University of Ruse, Bulgaria<sup>2</sup>  
*Development of Mathematical Skills with Commonly used Computer Software*

16.05 *Summary*

# MECHATRONICS AND LOGISTICS SYMPOSIUM

**Chairman:** Béla ILLÉS *professor*

## C3: ELECTRICAL ENGINEERING AND INFORMATICS

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**VENUE:** Room 311., Bld. A/1. 3<sup>rd</sup> floor 311.

**Chairman:** Csaba BLÁGA *assoc. professor*

**Secretary:** Dávid VINCZE *assist. lecturer*

**Date:** April 9, 2015

14.00 *Opening Ceremony*

14.05 **Balázs Villányi, Roland Juhos, Máté Benyó** Budapest University of Technology and Economics, Hungary  
*The Significance of the Application of Column-Oriented Database, SAP HANA Platform and Prediction Methods in Motorsports*

14.20 **Tamás Fekete<sup>1</sup>, Gergely Mezei<sup>2</sup>** Evosoft Hungary Ltd.<sup>1</sup>, Budapest University of Technology and Economics<sup>2</sup>, Hungary  
*Using GPGPU for Graph Transformations – An Introductory Survey*

14.35 **Tamás György, Károly Ágoston Bíró, Tamás Szabó** Technical University of Cluj-Napoca, Romania  
*An Experimental Comparison of Stereo Vision Algorithms Using Middlebury Dataset*

14.50 **Csaba Vörös** University of Miskolc, Hungary  
*Development of Water Quality Monitoring Station*

15.05 **Gábor Knyihár** Hungary  
*Intelligent Research Robot*

15.20 **Zsolt Péter Pázmándi** Hungary  
*Particle Detection with Time-Projection Chamber and Data Acquisition System*

15.35 *Break*

15.50 **Peter Bober** Technical University of Kosice, Slovakia  
*Measurement of BLDC Motor Efficiency for Commutation Angle Optimisation*

16.05 **Marin-Silviu Nan, Ovidiu-Bogdan Tomus, Razvan Popescu, Andreea Ungur** University of Petrosani, Romania  
*Analysis and Evaluation of Optimum Operational Status of Electrical Stations*

16.20 **Tamás György, Áron Attila Popp, Károly Ágoston Bíró** Technical University of Cluj-Napoca, Romania  
*Supplementary Iron Losses in Asynchronous Machines with External Rotor*

16.35 **Nándor Kiss** University of Miskolc, Hungary  
*Special Induction Motor Driving*

16.50 **Gábor Fekete** University of Miskolc, Hungary  
*Definition of the Energy and Force Based on the Unified Theory of Energy (UTE, UNITHE)*

17.05 *Summary*

# INNOVATIVE MECHANICAL DESIGN AND TECHNOLOGY SYMPOSIUM

**Chairman:** Károly JÁRMAI *professor*

## D1: INNOVATIVE MECHANICAL ENGINEERING TECHNOLOGIES

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**VENUE:** Room 1. Bld. C/1. ground floor, 1.

**Chairman:** János KUNDRÁK *professor*

**Co-Chairman:** Wojciech ZEBALA *professor*

**Secretary:** István SZTANKOVICS *assist. lecturer*

**Date:** April 9, 2015

- 14.00      **Numan M. Durakbasa, Gökcen Bas** Vienna University of Technology, Austria  
*An Analysis of the Metrology Techniques to Improve Quality and Accuracy*
- 14.20      **Anatoly I. Grabchenko, Vladimir L. Dobroskok, Yaroslav N. Garashchenko, Andrei N. Shpilka** National Technical University “Kharkiv Polytechnic Institute”, Ukraine  
*Morphological Analysis of Triangulated Models of Grinding Wheels Working Surfaces*
- 14.40      **Wojciech Zebala, Bogdan Słodki, Grzegorz Struzikiewicz** Cracow University of Technology, Poland  
*Chip Breakage Control in Ti6Al4V Longitudinal Turning with HPC System*
- 15.00      **Ferenc Dömötör, Balázs Zsolt Farkas, Tibor Szalay, Zoltán Újvári** Budapest University of Technology and Economics, Hungary  
*Condition Monitoring of Drilling Tools*
- 15.20      *Break*
- 15.40      **Balázs Mikó, Ágota Drégelyi-Kiss** Óbuda University, Hungary  
*Case Study in Investigation of Accuracy of Hole Drilling*
- 16.00      **Viktória Ferencsik, Gyula Varga** University of Miskolc, Hungary  
*Examination of Surface Roughness of Burnished Workpiece Surfaces*
- 16.20      **Dénes Tóth, Péter Zoltán Kovács, Miklós Tisza** University of Miskolc, Hungary  
*3D Printing in the Vehicle Industry*
- 16.40      **István Sztankovics, János Kundrák** University of Miskolc, Hungary  
*The Characteristics of Chip Removal in Rotational Turning*
- 17.00      **Zsuzsa Balajti** University of Miskolc, Hungary  
*Up to Date Constructive Geometry to Dimensioning of Bearing Pattern of Cylindrical Worm Gear Driving Having a Profile Circle Arc in Axial Section*
- 17.20      *Summary*

# INNOVATIVE MECHANICAL DESIGN AND TECHNOLOGY SYMPOSIUM

**Chairman:** Károly JÁRMAI *professor*

## D2: MECHANICAL ENGINEERING DESIGN AND TECHNOLOGIES, NUMERICAL MODELLING AND LABORATORY MEASUREMENTS

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**VENUE:** Room 206. Bld. A/3. 2<sup>nd</sup> floor, 206.

**Chairman:** Szilárd SZABÓ *professor*

**Co-chairman:** György SZEIDL *professor emeritus*

**Secretary:** Péter BENCSES *assist. lecturer*

**Date:** April 9, 2015

- 14.00      **György Szeidl, László Kiss** University of Miskolc, Hungary  
*A Nonlinear Kinematical Model for Heterogeneous Circular Beams*
- 14.20      **Dávid Gönczi** University of Miskolc, Hungary  
*Determination of Displacements and Stresses in Functionally Graded Hollow Spherical Bodies*
- 14.40      **Ákos József Lengyel, István Ecsedi** University of Miskolc, Hungary  
*Composite Beam with Weak Shear Connection Subjected to Thermal Load*
- 15.00      **Dániel Burmeister** University of Miskolc, Hungary  
*Buckling of Annular Plates with Shell-stiffening and Elastic Restraints on the Boundary*
- 15.20      **Krzysztof Jesionek<sup>1</sup>, Polko Krzysztof<sup>1</sup>, Badur Janusz<sup>2</sup>** Wrocław University of Technology<sup>1</sup>,  
Institute of Fluid Flow Machinery PAS-ci, Gdańsk<sup>2</sup>, Poland  
*Condensing Heat Exchanger in Coal-Fired Power Plant*
- 15.40      *Break*
- 16.00      **József Nagy, Béla Tolvaj, Szilárd Szabó** University of Miskolc, Hungary  
*Thermodynamic Properties of Refrigerants*
- 16.20      **Sándor Hajdú, Tibor Czibere, László Kalmár** University of Miskolc, Hungary  
*Hdraulic Design of an Impeller of a Cross-Flow Turbine*
- 16.40      **Dávid Czeglédi, István Lakatos, József Polák** Széchenyi István University, Hungary  
*Operation of Diesel Engines for Commercial Vehicles Using Alternative Fuels*
- 17.00      **Dávid Czeglédi, István Lakatos, József Polák** Széchenyi István University, Hungary  
*Research of Electric Motor Mechanical Losses.*
- 17.20      *Summary*



# INNOVATIVE MECHANICAL DESIGN AND TECHNOLOGY SYMPOSIUM

**Chairman:** Károly JÁRMAI *professor*

## D3: INNOVATIVE MECHANICAL ENGINEERING DESIGN

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**VENUE:** Insitute of Logistics, Bld. A/5. 1<sup>st</sup> floor, 105.

**Chairman:** Károly JÁRMAI *professor*

**Secretary:** László KOTA *research fellow*

**Date:** April 9, 2015

- 14.00      **Alexandru-Ioan Pop, Mihai Radu Sorin** University of Petrosani, Romania  
*Study Over the State of Stress and Displacements from the Structure of the Towers of the Hoist Devices Due to Operating Loads*
- 14.20      **Dumitru Jula, Stela Dinescu, Ovidiu-Bogdan Tomus** University of Petrosani, Romania  
*Reliability Analysis of  $E_sR_C$  1400 Bucket Wheel Excavators Operating in Oltenia Lignite Open Pit Mines*
- 14.40      **Károly Jármai, József Farkas** University of Miskolc, Hungary  
*Overhead Travelling Crane Main Girder Design for Minimum Cost*
- 15.00      **Ioan Szava, Sorin Vlase, Botond-Pál Gálfi, Raluca Dora Ionescu, Mircea Ivanoiu, Renata Ildikó Munteanu, Carol Ambrus, Péter Dani** Transilvania University of Brasov, Romania  
*Testing Device for Evaluation of the Adhesives Mechanical Characteristics*
- 15.20      **Raluca Dora Ionescu, Sorin Vlase, Botond-Pál Gálfi, Mircea Ivanoiu, Renata Ildikó Munteanu, Péter Dani, Ioan Szava, Carol Ambrus** Transilvania University of Brasov, Romania  
*Displacement Field Evaluation on a Reduced Scale Model of an Urban Vertical Axis Turbine Using Video Image Correlation*
- 15.40      *Summary*

## LEGAL SCIENCES SYMPOSIUM

**Chairman:** Csilla CSÁK *assoc. professor*

### E: LEGAL SCIENCES

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**VENUE:** Faculty of Law, Bld. A/6. groundfloor 31.

**Chairman:** Csilla CSÁK *assoc. professor*

**Secretary:** Zoltán VARGA *assist. professor*

**Date:** April 9, 2015

- 14.00 **Csilla Csák** University of Miskolc, Hungary  
*The Financial Securities of the Validation of the Environmental Law Responsibility*
- 14.15 **Judit Barta** University of Miskolc, Hungary  
*The Current State of the Supplementary Private Pension Fund System from the Aspect of Contributors*
- 14.30 **Zoltán Angyal** University of Miskolc, Hungary  
*New Cases in the Court of Justice of the European Union on Air Passenger Rights*
- 14.45 **Edit Zsuzsanna Tárczy** Government Office of Szabolcs-Szatmár-Bereg Megye, Hungary  
*Problems of the Regulation of the Local Government Aid in the Local Government Ordinances of Szabolcs-Szatmár-Bereg Megye*
- 15.00 **Ágnes Váradi** HAS Centre for Social Sciences Institute for Legal Studies, Hungary  
*Principles of a European Administrative Procedural Law (Procedural Principles in the Renewal Model Rules on EU Administrative Procedure)*
- 15.15 **Zoltán Nagy** University of Miskolc, Hungary  
*Environmental Tax Reform*
- 15.30 *Break*
- 15.45 **Zoltán Rácz** University of Miskolc, Hungary  
*Alternative Dispute Resolution in Hungary*
- 16.00 **Zoltán Varga** University of Miskolc, Hungary  
*Financial Aspects of the Old-Age Pensions' Coordination*
- 16.15 **Adrienn Jámбор** University of Miskolc, Hungary  
*About Animal Protection in Education*
- 16.30 **Adrienn Jámбор** University of Miskolc, Hungary  
*Animal Shelter Versus Flaying House - What is Next?*
- 16.45 **Gábor Mélypataki** University of Miskolc, Hungary  
*Outdoor or Indoor - The Place of the Civil Service Law in the Hungarian Legal System*
- 17.00 **Annamária Zsiros** University of Miskolc, Hungary  
*The Case of the United States V. Windsor in Consideration of the Judges' Judgement*
- 17.15 **Annamária Zsiros** University of Miskolc, Hungary  
*Recent Developments in Legalising Same-Sex Marriages in Europe*
- 17.30 *Break*

# CHALLENGES OF INNOVATIVE PRODUCTION – SERVICE AND INSTITUTIONAL OPERATION IN THE FRAME OF INFORMATION SOCIETY SYMPOSIUM

**Chairman:** Éva G. FEKETE *professor*

## F: ECONOMIC CHALLENGES IN THE 21<sup>st</sup> CENTURY

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**VENUE:** Room 11. Bld. A/1. mezzanine, 11.  
**Chairman:** Roland SZILÁGYI *assoc. professor*  
**Secretary:** Dóra SZENDI *PhD Student*

**Date:** 9 April, 2015

- 14.00 **Károly Kiss** Corvinus University of Budapest, Hungary  
*Rise and Fall of the Concept Sustainability*
- 14.20 **Gábor Kusper<sup>1</sup>, Gábor Percze<sup>2</sup> Nikolett Menyhárt<sup>1</sup>** Eszterházy Károly College<sup>1</sup>, UniWeb Plusz Ltd<sup>2</sup>, Hungary  
*Document Management Systems in Higher Education*
- 14.40 **Mirjana Hladika, Gulin Danimir, Mićin Marina** Faculty of Economics and Business, University of Zagreb, Croatia  
*Influence of the Accounting Models of Measurements at Historical Cost and Fair Value on the Quality of Financial Statements*
- 15.00 **Roland Szilágyi** University of Miskolc, Hungary  
*Estimation Based on Tendencies of Non-Response*
- 15.20 **Hrvoje Percevic, Unic Grsetic Jelena** University of Zagreb, Faculty of Economics and Business, Croatia  
*The Implementation of Activity Based Costing in Insurance Companies*
- 15.40 *Break*
- 16.00 **Roland Szilágyi** University of Miskolc, Hungary  
*Ranking of Sampling Designs*
- 16.20 **Bella Vatamány** University of Miskolc, Hungary  
*Employment of Women in the 21<sup>st</sup> Century*
- 16.40 **Dóra Szendi** University of Miskolc, Hungary  
*Differences in the Spatial Patterns of Selected German (NUTS3) Economic Factors, with Special Regards on GDP, Unemployment and Enterprises*
- 17.00 *Summary*

## HUMANITIES AND SOCIAL SCIENCES SYMPOSIUM

**Chairman:** Ágnes MAGNUCZNÉ GODÓ *assoc. professor*

### G: HUMANITIES AND SOCIAL SCIENCES

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**VENUE:** Room 306. Bld. C/1. 3<sup>rd</sup> floor, 306.

**Chairman:** Ágnes MAGNUCZNÉ GODÓ *assoc. professor*

**Secretary:** Viktória KOPASZNÉ LÁNG *research assistant*

**Date:** April 9, 2015

- 14.00 **Robert-Marius Mihalache** Babes Bolyai University, Romania  
*The Collections of Pontifical Tithes from the Diocese of Oradea Between 1332-1337*
- 14.20 **Svjetlana Letinić<sup>1</sup>, Mirjana Jeleč Raguž<sup>1</sup>, Dubravka Mahaček<sup>2</sup>** Polytechnic in Pozega<sup>1</sup>, Josip Juraj Strossmayer University of Osijek<sup>2</sup>, Croatia  
*State of Social Justice in the Republic of Croatia*
- 14.40 **Andrea Kozáry** National University of Public Service, Hungary  
*Conflict Resolution, Mediation, Restorative Justice and the Policing of Ethnic Minorities in Germany, Austria and Hungary (COREPOL)*
- 15.00 **Viktória Kopasz Láng** University of Miskolc, Hungary  
*„Close Your Eyes, and Think of England” Ethics or Prudery: Moral Questions in Victorian England*
- 15.20 *Break*
- 15.40 **Krisztina Sándor** University of Debrecen, Hungary  
*Implicit Knowledge, Explicit Knowledge and Their Relation to General Language Proficiency*
- 16.00 **Andrea Kovács Duró** University of Miskolc, Hungary  
*The Lessons of a Value Preference Study*
- 16.20 **Ágnes Magnucz Godó** University of Miskolc, Hungary  
*Raising Intercultural Awareness in English Teacher Training*
- 16.40 *Summary*

## HEALTH AND MEDICAL SCIENCES SYMPOSIUM

**Chairman:** Olivér RÁCZ *professor*

### H: HEALTH AND MEDICAL SCIENCES

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**VENUE:** Room BOSCH, Bld. B3-B4. 2<sup>nd</sup> floor, 207.

**Chairman:** Olivér RÁCZ *professor*

**Secretary:** Andrea LUKÁCS *assist. professor*

**Date:** April 9, 2015

- 14.00 **Veronika Rajki<sup>1</sup>, Henriett Éva Hirdi<sup>2</sup>, Judit Mészáros<sup>1</sup>** Semmelweis University<sup>1</sup>, National Tax and Customs Administration of Hungary Training<sup>2</sup>, Hungary  
*Hungarian Health Care Workers' Attitudes and Habits Regarding Blood Donation Based on a Survey*
- 14.20 **Veronika Rajki, Mária Csóka, Judit Mészáros** Semmelweis University, Hungary  
*Professional Knowledge- and Practice Mapping Among Nurses Regarding Transfusion Therapy – National Study*
- 14.40 **Rita Dénes** Budapest University of Technology and Economics, Hungary  
*Healthcare Quality Development in the Light of the Demographic Situation of Hungary*
- 15.00 **Krisztina Mayer, Andrea Lukács, Emőke Kiss-Tóth** University of Miskolc, Hungary  
*Interrelation of Sensation Seeking, Resilience and Achievement Motivation with Risk-Taking Behaviour*
- 15.20 **Eva Sedláková<sup>1</sup>, Jan Sedlák<sup>2</sup>, Olivér Rác<sup>1,3</sup>, Bertalan Fodor<sup>3</sup>** Safarik University, Slovakia<sup>1</sup>, East Slovakian Institute of Cardiovascular Diseases, Slovakia<sup>2</sup>, University of Miskolc, Hungary<sup>3</sup>  
*MicroRNA and Their Possible Therapeutic Applications in Cardiovascular Disease*
- 15.40 *Break*
- 16.00 **Frantisek Nistiar<sup>1</sup>, Olivér Rác<sup>1,2</sup>, Agnesa Lukacinová<sup>1</sup>, Jan Kolesár<sup>1</sup>, Bertalan Fodor<sup>2</sup>** Safarik University, Slovakia<sup>1</sup>, University of Miskolc, Hungary<sup>2</sup>  
*The Role of Microbiome in Health and Disease*
- 16.20 **Olivér Rác<sup>1,2</sup>, László Barkai<sup>1,3</sup>, Frantisek Nistiar<sup>2</sup>** University of Miskolc, Hungary<sup>1</sup>, Safarik University, Slovakia<sup>2</sup>, Velkey László Center of Child Health, Miskolc, Hungary<sup>3</sup>  
*Advance in Stem Cell Research and the Perspectives of Diabetes Mellitus Cure*
- 16.40 **Denisa Maceková<sup>1</sup>, Stefan Lukacin<sup>2</sup>** Safarik University, Medical School<sup>1</sup>, 1<sup>st</sup> Private Hospital Kosice-Saca Ltd.<sup>2</sup>, Slovakia  
*Role of Oxidative Stress and Antioxidant Systems in Preeclampsia*
- 17.00 **Bertalan Fodor<sup>1</sup>, Bettina Kovács<sup>2</sup>, Anett Kovács Bartókné<sup>3</sup>, Andrea Lukács<sup>1</sup>, Olivér Rác<sup>1,4</sup>, László Barkai<sup>1,3</sup>** University of Miskolc<sup>1</sup>, B-A-Z County Teaching Hospital<sup>2</sup>, Velkey László Center of Child Health, Miskolc<sup>3</sup>, Hungary, Safarik University, Slovakia<sup>4</sup>  
*The Assessment of Glomerular Filtration Based on Serum Cystatin C*
- 17.20 **Virág Egri** Hungary  
*In Vitro Analysis of Antibody-Based Immunotherapy of Cancer*
- 17.40 *Summary*

## OPTIONAL PROGRAMME

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The Organisational Committee of the Conference would like to make your stay more pleasant by organising the

### **Gala Dinner**

**19.00, 9 April 2015**

**Venue:** University Dining Hall (*Entry: only with invitation cards*)

### **Programme**

<i>19<sup>00</sup> - 19<sup>20</sup></i>	<i>Performance of the Bartók Béla Institute</i>
<i>19<sup>30</sup> - 19<sup>40</sup></i>	<i>Inauguration of the honorary members of the conference</i>
<i>20<sup>00</sup> - 21<sup>30</sup></i>	<i>Dinner</i>

### **Excursion to TOKAJ**

**10 April 2015**

<i>Departure:</i>	13.00
<i>Arrival in Miskolc:</i>	22.00
<i>Meeting place:</i>	outside the Main Building entrance of the university