

UNIVERSITY OF DEBRECEN
Faculty of Engineering
Department of Mechanical Engineering



**1st INTERNATIONAL SCIENTIFIC CONFERENCE ON
ADVANCES IN MECHANICAL ENGINEERING
(ISCAME 2013)**

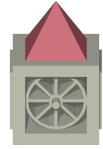
10-11 October, 2013 Debrecen, Hungary

CONFERENCE PROGRAM



**INTERNATIONAL SCIENTIFIC CONFERENCE ON
ADVANCES IN MECHANICAL ENGINEERING**

10-11 October 2013, Debrecen, Hungary



Organisational Chairman of the ISCAME 2013

Tamás MANKOVITS PhD

tamas.mankovits@eng.unideb.hu

Scientific Program Committee

István BUDAI PhD, University of Debrecen, HU

Lajos FAZEKAS PhD, University of Debrecen, HU

Géza HUSI PhD, University of Debrecen, HU

Ferenc KALMÁR PhD, University of Debrecen, HU

Istvánné RÁTHY PhD, University of Debrecen, HU

Tamás SZABÓ PhD, University of Miskolc, HU

Edit SZŰCS PhD, University of Debrecen, HU

Zsolt TIBA PhD, University of Debrecen, HU

János TÓTH PhD, University of Debrecen, HU

László TÓTH DSc, University of Debrecen, HU

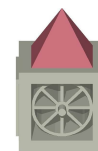
Technical Assistance

Judit BAK, University of Debrecen, HU



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

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Conference patron:

Prof. Dr. Zoltán SZILVÁSSY, Rector of University of Debrecen

TECHNICAL PROGRAMME

Thursday, 10th of October 2013 (main building of UD, 4032 Debrecen, Egyetem tér 1)

9:00 – **Exhibition opening (main building of UD)** (open till 18:00)
Prof. Dr. István GAÁL, president of CAHS, UD

Exhibition visiting is free of charge.

10:00 – 12:15 **Plenary session (AULA main building of UD)**
Chair: **Prof. Dr. László CSERNOCH**, vice-rector of UD

Language: English/Hungarian with simultaneous translation

10:00 – 10:05 **Prof. Dr. László CSERNOCH**, vice-rector of UD
Welcoming words

10:05 – 10:15 **Dr. habil Edit SZÜCS**, Dean of Faculty of Engineering
The role of UD Faculty of Engineering in the regional and national engineering education

10:15 – 10:45 **Dr. Antal NIKODÉMUS**, Head of Department
Ministry for National Economy, Department for Innovation and R+D
RDI strategy, the program of building knowledge and technology

10:45 – 11:15 **Tamás TÓTH**, Head of Department
Hungarian Energy and Public Utility Regulatory Authority
Energy use of Hungary, status of renewable energy sources

11:15 – 11:45 **Dr. Dr. hc Gudni JÓHANNESSON**, Director General
National Energy Authority of Iceland
Energy strategy of Iceland

11:45 – 12:15 **Dr. Annamária NÁDOR**, senior researcher
Geological and Geophysical Institute of Hungary
Geothermal potential of Hungary

12:15 – 14:00 **Lunch**

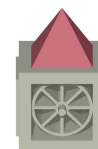
19:00 – 20:00 **Operetta gala (AULA main building of UD)**

20:00 – 23:00 **Conference Dinner (based on invitation)**
University of Debrecen, main building AULA (Egyetem tér 1)
Welcoming words:
Prof. Dr. László CSERNOCH, vice-rector of UD



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Friday, 11th of October 2013 (Faculty of Engineering UD, 4028 Debrecen, Ótemető 2-4)

8:00 - 11:00 **Registration**

9:00 - 10:10 **Plenary session of the ISCAME (E 319)** *Language: English/Hungarian*
Chair: **Tamás MANKOVITS PhD**

9:00 - 9:05 **Istvánné RÁTHY PhD**, Head of Department of Mechanical Engineering
Welcoming words

9:05 - 9:10 **Tamás MANKOVITS PhD**
ISCAME 2013

9:10 - 9:25 **Attila HUSZTI, Enikő TÓTH**, MSK Hungary Gépgyártó Bt.
MSK Hungary Bt., that is high technology in the packaging industry

9:25 - 9:40 **Attila GYÖNYÖRŰ**, Enterprise Group
Modern CAD/CAM/PLM solutions for the industry and the education

9:40 - 9:55 **Tibor KISS**, ZF Lenksysteme Hungária Kft.
Introduction of ZF Lenksysteme Hungária Kft.

9:55 - 10:10 **János BALLAI**, Henkel – Loctite
Innovations in adhesive technology

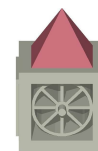
SESSIONS

MECHATRONICS	E 319
DESIGN	E 315
SIMULATION	E 319
MANUFACTURING	E 315
SMART MATERIALS	E 319
MATERIALS	E 315



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10:30 – 12:30 **Session MECHATRONICS (E 319)** *Language: English*

Chair: **Tamás SZABÓ PhD**

Secretary: **Krisztián DEÁK**

10:30 – 10:45 **József LÉNÁRT**

Development of non-contact vibration measurement device

10:45 – 11:00 **Gábor TÓTH, Tamás SZABÓ PhD**

Kinematical and vibration analysis of a KAWASAKI Robot

11:00 – 11:15 **Imre KOCSIS PhD**

Vibration analysis of a 2-stage helical geared motor

11:15 – 11:30 **Ondrej STAS PhD, Marian TOLNAY CSc**

Objectification of quality parameters of robotic structures

11:30 – 11:45 **Krisztián DEÁK**

Signal processing of machines and test of anti-vibration gloves

11:45 – 12:00 **Daniel LATES, Emil TEUTAN**

Arm exoskeleton for robotics and automation in space using compliant mechanisms

12:00 – 12:15 **Erwin-Christian LOVASZ PhD, Dan MARGINEANU, Valentin CIUPE, Sergiu Dan STAN, Eugen ZABAVA PhD**

Synthesis and design of an ELBOW module for a haptic device used in space telerobotics

12:15 – 12:30 **Attila Károly VARGA**

Self organizing in wireless sensor networks

10:30 – 12:30 **Session DESIGN (E 315)** *Language: English*

Chair: **Zsolt TIBA PhD**

Secretary: **Zsolt BÉKÉSI**

10:30 – 10:45 **Gábor BOHÁCS PhD, Antal BALPATAKI dr.univ., Boglárka ODONICS, András GYIMESI, Zoltán RÓZSA**

Introduction of a fuzzy-based expert system for selection of materials handling machinery at construction sites

10:45 – 11:00 **Zsolt TIBA PhD, József KERTÉSZ, Géza HUSI PhD, Zsolt BÉKÉSI**

Drivetrain modification of the IVECO 150E Eurocargo Hardpress Garbage Truck

11:00 – 11:15 **Zsolt TIBA PhD, Zsolt BÉKÉSI**

Kinetic energy recovery of vehicles by pneumatic system

11:15 – 11:30 **Géza NÉMETH, József PÉTER PhD, Nándor NÉMETH**

A new type of epicyclic traction drive

11:30 – 11:45 **László KELEMEN, József SZENTE PhD**

Determination of contact path on crowned teeth

11:45 – 12:00 **Zoltán KOVÁCS PhD**

Effect of front axle suspension to traction parameters of tractor with mechanical front wheel drive

12:00 – 12:15 **Péter HORVÁTH PhD**

Modeling escapement phase of piano action

12:15 – 12:30 **György ÁBRAHÁM DSc, Zsolt SZTRANCSIK**

Thin layer technology in buildingenergetics



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12:30 – 13:30 **Lunch (Canteen, Faculty of Engineering UD)**

13:30 – 15:15 **Session SIMULATION (E 319)** *Language: Hungarian*

Chair: **Tamás MANKOVITS PhD**

Secretary: **Dávid HURI**

13:30 – 13:45 **Sándor HAJDU, Péter GÁSPÁR DSc**

Comparison of dynamical models for single-mast stacker cranes

13:45 – 14:00 **Gergely DEZSÓ PhD, Ferenc SZIGETI CSc**

Dynamical transient analysis of chip formation in orthogonal metal cutting

14:00 – 14:15 **Sándor PÁLINKÁS, György KRÁLLICS CSc, Zoltán BÉZI**

Modelling of waviness on cold rolled aluminium sheet

14:15 – 14:30 **Szabolcs SZÁVAI PhD**

Step optimised Newton-Raphson algorithm for solution of EHD problems

14:30 – 14:45 **György HEGEDŰS PhD, György TAKÁCS PhD**

Applied numerical methods on the determination of grinding tool parameters of ball nuts

14:45 – 15:00 **Dávid HURI, Tamás MANKOVITS PhD, Imre KÁLLAI**

Numerical investigations on the locking effect of axi-symmetric isoparametric finite elements

15:00 – 15:15 **Gábor SZEPESI PhD, Zoltán SIMÉNFALVI PhD**

Pressure drop of cyclones using numerical simulation

13:30 – 15:15 **Session MANUFACTURING (E 315)** *Language: English*

Chair: **Istvánné RÁTHY PhD**

Secretary: **Gábor BALOGH**

13:30 – 13:45 **Marek MARTANCIK, Mário BURANSKI, Ernest GONDÁR PhD**

Additive manufacturing in rapid prototyping with the use of hot gas

13:45 – 14:00 **Ondrej STAS PhD, Ernest GONDÁR PhD**

Hot gas powder sintering in 3D printing

14:00 – 14:15 **Krisztián DEÁK**

Image processing with artificial neural networks and support vector machines caused by chatter vibration

14:15 – 14:30 **Stelian UTULEANU, Gheorghe SINDILA PhD, Nicolae CAPATANA**

The influence of punched contour geometry over the punch force

14:30 – 14:45 **Ádám HORVÁTH, Mátyás ANDÓ PhD, István OLDAL PhD**

Compared the cast and machined caliper deformation

14:45 – 15:00 **Tamás PATAKI, Róbert KERESZTES PhD**

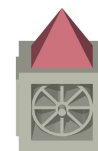
The topological change of carbon nanotube structures under loading tensile

15:00 – 15:30 **Coffee break (E 320)**



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15:30 – 16:45 **Session SMART MATERIALS (E 319)** *Language: Hungarian*

Chair: **István BUDAI PhD**

Secretary: **Gábor BALOGH**

15:30 – 15:45 **Sándor MANÓ, László TÓTH DSc, Tamás MANKOVITS PhD, István SOLTÉSZ, Zoltán CSERNÁTONY PhD**

Implants made from metal foams

15:45 – 16:00 **Gábor BALOGH, László TÓTH DSc, Tamás MANKOVITS PhD, Sándor MANÓ, Zoltán CSERNÁTONY PhD**

Manufacturing technologies of titanium foam review

16:00 – 16:15 **Tamás MANKOVITS PhD, László TÓTH DSc, Sándor MANÓ, Gábor BALOGH, Zoltán CSERNÁTONY PhD**

Mechanical properties of titanium-foams, a review

16:15 – 16:30 **Sándor SZABÓ PhD, Lajos DARÓCZI PhD, Dezső BEKE DSc**

Investigation of acoustic emission of shape memory alloys

16:30 – 16:45 **István BUDAI PhD**

Manufacturing of metallic emulsions

15:30 – 16:45 **Session MATERILAS (E 315)** *Language: Hungarian*

Chair: **Lajos FAZEKAS PhD**

Secretary: **Imre KÁLLAI**

15:30 – 15:45 **Béla HARCSIK PhD, Tibor FERENCZI**

Metallurgical Researcher Laboratory at University of Miskolc

15:45 – 16:00 **Lajos FAZEKAS PhD, András MOLNÁR dr.univ., Istvánné RÁTHY PhD**

Examination of oil uptake and release of the cold-flame sprayed surface layer

16:00 – 16:15 **András MOLNÁR dr.univ., Gábor BUZA PhD, András BALOGH PhD, Lajos FAZEKAS PhD**

Aluminiumbronze moulds hardfacing with NiCrBSi powders

16:15 – 16:30 **András MOLNÁR dr.univ., Gábor BUZA PhD, András BALOGH PhD, Lajos FAZEKAS PhD**

Effect of technological parameters for quality of remelted NiCrBSi coatings

16:30 – 16:45 **Imre KÁLLAI, Zoltán MAJOR PhD, György CZÉL PhD, Tamás MANKOVITS PhD, Dávid HURI**

The effect of load rate and geometrical factors on the mechanical properties of UHMPWE

16:45 – 17:00 **Zoltán SZAMOSI, Zoltán SIMÉNFALVI PhD**

Torrefaction of the wheat straw

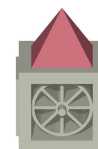
17:00 – 17:15 **György JUHÁSZ PhD**

Technical competitions for the education



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EXHIBITOR LIST

(Department of Mechanical Engineering, Faculty of Engineering, University of Debrecen)

BÖLLHOFF KFT	www.boelhoff.hu
ENTERPRISE GROUP	www.enterprise-group.hu
FAG MAGYARORSZÁG IPARI KFT	www.schaeffler.hu
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