



Faculty of Engineering
Department of Mechanical Engineering

**6th INTERNATIONAL SCIENTIFIC CONFERENCE ON
ADVANCES IN MECHANICAL ENGINEERING
(ISCAME 2018)**

11-12 October, 2018 Debrecen, Hungary

CONFERENCE PROGRAMME

organized by
**Department of Mechanical Engineering
Faculty of Engineering, University of Debrecen**
and
**Working Commission in Mechanical Engineering
Specialized Committee in Engineering
Regional Committee in Debrecen, Hungarian Academy of Sciences**



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

11-12 October 2018, Debrecen, Hungary



Chair of ISCAME 2018

Tamás MANKOVITS, University of Debrecen, Hungary

Scientific Program Committee of ISCAME 2018

Ágnes BATTÁNE GINDERT-KELE, University of Debrecen, Hungary

Sándor BODZÁS, University of Debrecen, Hungary

Gábor BOHÁCS, Budapest University of Technology and Economics, Hungary

István BUDAI, University of Debrecen, Hungary

Levente CZÉGÉ, University of Debrecen, Hungary

Igor DRSTVENSEK, University of Maribor, Slovenia

János Péter ERDÉLYI, University of Miskolc, Hungary

Lajos FAZEKAS, University of Debrecen, Hungary

Csaba GYENGE, Technical University of Cluj-Napoca, Romania

Sándor HAJDU, University of Debrecen, Hungary

György JUHÁSZ, University of Debrecen, Hungary

Gábor KALÁCSKA, Szent István University, Hungary

Ferenc KALMÁR, University of Debrecen, Hungary

Imre KOCSIS, University of Debrecen, Hungary

Ákos LAKATOS, University of Debrecen, Hungary

Daniel LATES, Petru Maior University of Targu Mures, Romania

Stanislav LEGUTKO, Poznan University of Technology, Poland

Zoltán MAJOR, Johannes Kepler University Linz, Austria

József MENYHÁRT, University of Debrecen, Hungary

Ljubica MILOVIC, University of Belgrade, Serbia

Imre Norbert ORBULOV, Budapest University of Technology and Economics, Hungary

Sándor PÁLINKÁS, University of Debrecen, Hungary

Tibor POÓS, Budapest University of Technology and Economics, Hungary

Milan RACKOV, University of Novi Sad, Serbia

Istvánné RÁTHY, Óbuda University, Hungary

Tamás SZABÓ, University of Miskolc, Hungary

Ferenc SZODRAI, University of Debrecen, Hungary

Edit SZÚCS, University of Debrecen, Hungary

György THALMAIER, Technical University of Cluj-Napoca, Romania

Zsolt TIBA, University of Debrecen, Hungary

László TÓTH, University of Debrecen, Hungary

Matej VESENJAK, University of Maribor, Slovenia

László ZSIDAI, Szent István University, Hungary

Technical Assistance

Szandra SITKU, University of Debrecen, Hungary

Lilla CSONKÁNE DÓRÓ, University of Debrecen, Hungary



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

11-12 October 2018, Debrecen, Hungary



WELCOME MESSAGE

On behalf of the ISCAME Scientific and Organizing Committee I am pleased to welcome you to Debrecen for the 6th International Scientific Conference on Advances in Mechanical Engineering organized by the Department of Mechanical Engineering, Faculty of Engineering of the University of Debrecen.

The main goal of ISCAME is to yearly bring together engineers working on research, development and practical application in the field of mechanical engineering. Furthermore, the purpose of this Conference is to provide opportunities for scientists and engineers to meet and to discuss current research, new concepts and ideas and establish possibilities for future collaborations in all aspects of mechanical engineering.

I am pleased to inform you that 152 experts from higher education have registered for this year's conference from altogether 6 countries. In the framework of ISCAME 95 presentations will be given and 27 posters will be exhibited.

This year's plenary session has up-to-dateness this time, as well. Recently, numerous well-known companies (Schaeffler Group, National Instruments, BMW, Continental, Diehl, Intertanker, Krones, Thyssenkrupp) in the field of engineering have announced their intention for extension and foundation of plants and offices, most of which have already been realized. Naturally, this development can be attributed on the one hand to the current economic policy, the City of Debrecen and the University of Debrecen. On the other hand, the City of Debrecen and the companies could have always been counting on the excellent local technical education (technical schools and the engineering education) which has provided and intends to provide in the near future an essential educational background for experts and engineers of the local companies. Now, it is time to look back on the years and explore the possibilities. Therefore, László Tóth, University Professor in the Department of Mechanical Engineering, born in Debrecen, is going to deliver a lecture, entitled „Technical Education in Debrecen”. I am pleased to invite you all to attend his lecture.

We invite you to be an active participant in this Conference and to contribute to any topic of your scientific interest. We hope that the 6th International Scientific Conference on Advances in Mechanical Engineering will have an important impact on the research in all topics included in its program.

It is also an honor for us to have a privilege to invite you to the 6th Mechanical Engineering Industrial Exhibition. The Faculty of Engineering of the University of Debrecen will host – parallel to ISCAME – the event, called “Industry Days in Debrecen” where 38 companies – 28 of which as partners of the Department of Mechanical Engineering – will exhibit. The list of our exhibiting partners can be found at the end of the program booklet. This professional program will surely benefit the visitors who want to get up-to-date knowledge with the latest technology.

We want to express our appreciation to all members of the committees involved in the preparation of this Conference and to all the staff who are managing the different aspects of the Conference and to all the contributing authors and participants who will create the real Conference. We hope that all of you feel awarded for your participation and contribution.

Yours Sincerely,

Tamás Mankovits
Chair of ISCAME, Head of Department
Department of Mechanical Engineering
Faculty of Engineering, University of Debrecen



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

11-12 October 2018, Debrecen, Hungary



TECHNICAL PROGRAMME

(Industry Days in Debrecen – including 6th ISCAME and 6th Mechanical Engineering Exhibition)

Thursday, 11th of October 2018 (2-4 Ótmető, Debrecen)

- 08:30 – 16:00 **ISCAME registration** – continuously (Main Hall)
- 09:00 – 16:00 **ISCAME poster exhibition and coffee** (ground floor, room 9.)
- 09:00 – 16:00 **Industry Days in Debrecen** (Building of the Faculty of Engineering)
- 10:00 – 12:00 **opening ceremony and talks of the Industry Days in Debrecen** (Aula and Lecture Hall U.0.02)
- 11:45 – 14:00 **lunch** (Restaurant, Fac. of Eng.) – for ISCAME participants
- 12:00 – 14:00 **reception** – for company representatives – entrance only with invitation card
- 13:00 – 14:30 **company presentations** (Lecture Hall U.0.01)
- 14:00 – 15:00 **ISCAME poster session 1** (ground floor, room 9.)
- 15:00 – 15:25 **ISCAME opening and plenary lecture** (Lecture Hall U.0.01.)
- 15:30 – 17:45 **ISCAME sessions**
MATERIALS SCIENCE AND TECHNOLOGY 1
INDUSTRIAL PROCESSES
MATERIAL HANDLING AND LOGISTICS
- 18:30 – 22:00 **ISCAME banquet** (Restaurant, Fac. of Eng.) –by pre-registration only, entrance only with invitation card

Friday, 12th of October 2018 (2-4 Ótmető, Debrecen)

- 08:30 – 14:00 **ISCAME registration** – continuously (Main Hall)
- 09:00 – 16:00 **ISCAME poster exhibition and coffee** (ground floor, room 9.)
- 09:00 – 10:00 **ISCAME poster session 2** (ground floor, room 9.)
- 09:00 – 12:00 **company presentations** (Lecture Hall U.0.01)
- 09:00 – 14:00 **Industry Days in Debrecen** (Building of the Faculty of Engineering)
- 10:00 – 12:00 **ISCAME sessions**
APPLIED AND THEORETICAL MECHANICS 1
FLUID MECHANICS 1
MATERIALS SCIENCE AND TECHNOLOGY 2
ENGINEERING OPTIMIZATION
- 11:30 – 14:00 **lunch** (Restaurant, Faculty of Engineering)
- 12:30 – 12:45 **ISCAME group photo** (meeting at the inner court)
- 13:00 – 16:30 **ISCAME sessions**
APPLIED AND THEORETICAL MECHANICS 2
FLUID MECHANICS 2
MATERIALS SCIENCE AND TECHNOLOGY 3
MANUFACTURING SCIENCE
ENGINEERING INFORMATICS
MACHINE AND PRODUCT DESIGN
MATERIALS SCIENCE AND TECHNOLOGY 4



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DETAILED PROGRAMME OF ISCAME 2018

Thursday, 11th of October 2018 (2-4 Ótemető, Debrecen)

08:30 – 16:00 **ISCAME registration** – continuously (Main Hall)
09:00 – 16:00 **ISCAME poster exhibition** (ground floor, room 9.)
11:45 – 14:00 **lunch** (Restaurant, Faculty of Engineering)
14:00 – 15:00 **ISCAME poster session 1** (ground floor, room 9.)

15:00 – 15:25 **ISCAME opening and plenary lecture**
(Lecture Hall U.0.01, ground floor)
15:00 – 15:05 **Tamás MANKOVITS PhD**, University of Debrecen, Hungary
Welcoming words
15:05 – 15:25 **László TÓTH DSc**, University of Debrecen, Hungary
Technical education in Debrecen

15:30 – 17:15 **Session MATERIALS SCIENCE AND TECHNOLOGY 1**
(Lecture Hall U.0.01, ground floor)

Chairman: **János ERDÉLYI PhD**, University of Miskolc, Hungary
Co-chairman: **Sándor PÁLINKÁS PhD**, University of Debrecen, Hungary
Secretary: **Gábor BALOGH**, University of Debrecen, Hungary

15:30 – 15:45 **László VARGA, Viktória DARGAI**
The influence of core production parameters on the properties of water glass cores using new sand and mechanically reclaimed sand
15:45 – 16:00 **Zoltán KÉRI, George KAPTAY**
Preparation of particle reinforced aluminum matrix composites
16:00 – 16:15 **Lazar KOVAČEVIĆ, Pal TEREK, Aleksandar MILETIĆ, Dragan KUKURUZOVIĆ, Branko ŠKORIĆ**
Preliminary investigation on the effectiveness of indirect external casting chills
16:15 – 16:30 **Dániel MOLNÁR, Marianna BUBENKÓ**
Simulation aspects of the high pressure die casting process
16:30 – 16:45 **Gábor GYARMATI, György FEGYVERNEKI, Tamás MENDE, Mónika TOKÁR**
The effect of fluxes on the melt quality of AlSi7MgCu alloy
16:45 – 17:00 **Marianna BUBENKÓ, Dániel MOLNÁR, György FEGYVERNEKI, Mónika TOKÁR**
The effect of the excess Titanium content on the microstructure of Al-Si foundry alloys
17:00 – 17:15 **Mahmood Hasan Dakhil ALHAFADHI, György KRÁLLICS**
Study on residual stress during welding in oil and gas pipeline





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Faculty of Engineering, University of Debrecen

- 15:30 – 17:45 **Session INDUSTRIAL PROCESSES**
(Aventics Pneumatic Laboratory, ground floor, room E.0.21.)
Chairman: **Tibor POÓS PhD**, Budapest University of Technology and Economics, Hungary
Co-chairman: **Lajos GULYÁS PhD**, University of Debrecen, Hungary
Secretary: **Zsolt BÉKÉSI**, University of Debrecen, Hungary
- 15:30 – 15:45 **Viktória SEBESI, Zsombor VÁRKONYI**
Examination of infrared tomato drying
- 15:45 – 16:00 **Viktor SZABÓ, Tibor POÓS**
Determination of drying properties of granules in fluidized bed dryer
- 16:00 – 16:15 **László HÉGELY, Kitti TÓBEL, Ferenc DÉNES, Péter LÁNG**
Reduction of the energy demand of solvent-grade bioethanol production
- 16:15 – 16:30 **Bence NÉMETH, Péter LÁNG, László HÉGELY**
Simulation aspects of the high pressure die casting process
- 16:30 – 16:45 **Tibor POÓS, Dániel HORVÁTH, Tamás KORNÉL**
Comparison of the direct shear box test of two agricultural granular materials
- 16:45 – 17:00 **Tibor POÓS, Máté HORVÁTH**
Design and implementation of laboratory absorption/adsorption test facility
- 17:00 – 17:15 **Tibor POÓS, Mihály András BATÓ, Evelin VARJU**
Calculation method of evaporation at heated water
- 17:15 – 17:30 **János SZABÓ**
Instrumental measurement and examination with life subjects of the thermal environment
- 17:30 – 17:45 **Judit NAGY, András NAGY**
Elastic analysis of a radial nozzle in a cylindrical and spherical shell
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- 15:30 – 16:30 **Session MATERIAL HANDLING AND LOGISTICS**
(Robert Bosch Engineering Education and Development Laboratory, ground floor, room E.0.22)
Chairman: **Gábor BOHÁCS PhD**, Budapest University of Technology and Economics, Hungary
Co-chairman: **Sándor HAJDU PhD**, University of Debrecen, Hungary
Secretary: **Tibor PÁLFI**, University of Debrecen, Hungary
- 15:30 – 15:45 **Eszter PUSKÁS, Gábor BOHÁCS**
Physical Internet – a novel application area for Industry 4.0
- 15:45 – 16:00 **Dávid Lajos SÁRDI, Krisztián BÓNA**
Simulation modeling in the sizing of city logistics systems – a study for concentrated delivery points
- 16:00 – 16:15 **Sezen KORKULU, Krisztián BÓNA**
Flexibility analysis of inventory cost model with ergonomics
- 16:15 – 16:30 **Dávid BODNÁR, Sándor HAJDU**
Accuracy analysis of two parallel manipulators
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- 18:30 – 22:00 **ISCAME banquet – by pre-registration only and entrance fee is charged**
(Restaurant, Faculty of Engineering)





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Mechanical Engineering Exhibition in 2017

Friday, 12th of October 2018 (2-4 Ótmető, Debrecen)

08:30 – 14:00 **ISCAME registration and coffee** – continuously (Main Hall)

09:00 – 16:00 **ISCAME poster exhibition** (ground floor, room 9.)

09:00 – 10:00 **ISCAME poster session 2** (ground floor, room 9.)

10:00 – 12:00 **Session APPLIED AND THEORETICAL MECHANICS 1**

(Robert Bosch Engineering Education and Development Laboratory, ground floor, room E.0.22)

Chairman: **Boris STOJIC PhD**, University of Novi Sad, Serbia

Co-chairman: **Sándor HAJDU PhD**, University of Debrecen, Hungary

Secretary: **Attila SZÁNTÓ**, University of Debrecen, Hungary

10:00 – 10:15 **László RÓNALI, Tamás SZABÓ**

Application of Rexroth controlling for inverted pendulum

10:15 – 10:30 **Pálma KAPITÁNY, József LÉNART**

Kinematics and control of a planar cable robot

10:30 – 10:45 **Saad ALSARAYEFI, Károly JÁLICS**

Investigation of modal behavior of composite vehicle components

10:45 – 11:00 **Gusztáv Áron SZIKI, Attila SZÁNTÓ, Kornél SARVAJCS**

Determination of the dynamic parameters of electric motors

11:00 – 11:15 **András SZÁNTÓ, Sándor HAJDU**

Vehicle modeling and simulation in Simulink

11:15 – 11:30 **Boris STOJIC**

Neural network based enveloping model of agricultural tyre

11:30 – 11:45 **Boris STOJIC**

Frequency domain analysis of tractor tyre enveloping properties

11:45 – 12:00 **Samad DADVANDIPOUR, Okan Deniz YILMAZ, Samad NADIMI BAVIL OLIAEI**

Performance analysis of micro-end mills based on vibration applied by Computer Aided Design analysis

10:00 – 11:30 **Session FLUID MECHANICS 1**

(Aventics Pneumatic Laboratory, ground floor, room E.0.21.)

Chairman: **László BARANYI PhD**, University of Miskolc, Hungary

Co-Chairman: **Ákos LAKATOS PhD**, University of Debrecen, Hungary

Secretary: **Krisztián DEÁK**, University of Debrecen, Hungary

10:00 – 10:15 **Nouredine GUELLOUH, Zoltán SZAMOSI**

Combustors with low emission levels for aero gas turbine engines

10:15 – 10:30 **Sándor TOLLÁR, Betti BOLLÓ**

Simulation of a working machine in dust chamber

10:30 – 10:45 **Amid IBRAHEEM, Ferenc SZODRAI**

Numerical model analysis of natural gas combustion burners

10:45 – 11:00 **Mahmoud SALEH, Ferenc SZODRAI**

Numerical model analysis of Myring-Savonius wind turbines

11:00 – 11:15 **Eszter BALLA**

Numerical simulations on basic models of low-speed axial fan blade sections

11:15 – 11:30 **Barham MOHAMAD, Károly JÁLICS, Milad KERMANI**

Exhaust system muffler volume optimization of light commercial vehicle using Transfer Matrix Method



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- 10:00 – 12:00 **Session MATERIALS SCIENCE AND TECHNOLOGY 2**
(SMARTMAT Material Technology Laboratory, 4th floor, room E.4.14)
Chairman: **Valéria MERTINGER DSc**, University of Miskolc, Hungary
Co-Chairman: **István BUDAI PhD**, University of Debrecen, Hungary
Secretary: **László PUSZTAI**, University of Debrecen, Hungary
- 10:00 – 10:15 **Raghawendra SISODIA, Marcell GÁSPÁR, Nouredine GUELLOUH**
HAZ characterization of automotive DP steels by physical simulation
- 10:15 – 10:30 **Shiraz Ahmed SIDDIQUI, Andrea SZILÁGYINÉ BÍRÓ, Mária MAROSNÉ BERKES**
Ball-on-disc wear test of duplex layers produced on X42Cr13 steel
- 10:30 – 10:45 **Tamás BUBONYI, Zsuzsanna BÁNÓCZY, Péter BARKÓCZY**
Local annealing of rolled aluminum sheets
- 10:45 – 11:00 **Ferenc TOLNAI, Kornél MÁJLINGER, Balázs VARBAI**
Structural examination of welded duplex
- 11:00 – 11:15 **Fruzsina FÜLÖP, Mária MAROSNÉ BERKES**
Tribology testing of superhard multilayered DLC coatings
- 11:15 – 11:30 **Máté SEPSI, Valéria MERTINGER, Márton BENKE**
Innovative residual stress and anisotropy investigation by robot arm based X-ray diffractometer
- 11:30 – 11:45 **Gábor BALOGH**
Seawater resistance testing and equipment design
- 11:45 – 12:00 **Branko SKORIC, Lazar KOVAČEVIĆ, Pal TEREK, Aleksandar MILETIĆ, Dragan KUKURUZOVIĆ**
Performance of duplex, nanocomposite and nanolayered thin films
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- 10:00 – 12:00 **Session ENGINEERING OPTIMIZATION**
(Metallographic Laboratory, 1st floor, room E.1.20)
Chairman: **Liliana Marilena MATICA PhD**, University of Oradea, Romania
Co-chairman: **Levente CZÉGÉ PhD**, University of Debrecen, Hungary
Secretary: **Dávid HURI**, University of Debrecen, Hungary
- 10:00 – 10:15 **Liliana Marilena MATICA, Zoltán KOVENDI, Eugen GERGELY, Laura COROIU**
Speed variation along an imposed linear trajectory for robotic arms motion
- 10:15 – 10:30 **Eszter SÁRKÖZI, László FÖLDI**
Position control of pneumatic drives
- 10:30 – 10:45 **Dávid HURI, Tamás MANKOVITS**
Shape optimization of an automotive rubber part
- 10:45 – 11:00 **Messaouda RAIS, Adel BOUMERZOUG**
Towards optimal window guidelines for the Algerian residential building facade in hot and dry climate
- 11:00 – 11:15 **Viktor ERDÉLYI, László JÁNOSI**
Model based optimization of pork fatteners
- 11:15 – 11:30 **Dorottya Luca PESTI, Bence SZÁMEL, Géza SZABÓ**
Investigating differences between the workload factors of executive and planning air traffic controllers
- 11:30 – 11:45 **Tamás Zoltán BAGI**
Examination of a typical high voltage phase conductor under various operating and load conditions
- 11:45 – 12:00 **Abdelhakim LOTFI, Dániel MARCSA, Zoltán HORVÁTH**
Modeling thermal behavior of permanent magnet synchronous motors
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- 11:45 – 13:00 **lunch** (Restaurant, Faculty of Engineering)
- 12:40 – 12:50 **ISCAME group photo** (meeting at the inner court)



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

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A group of ISCAME Participants in 2017

13:00 – 14:00

Session APPLIED AND THEORETICAL MECHANICS 2

(Robert Bosch Engineering Education and Development Laboratory, ground floor, room E.0.22)

Chairman:

Daniel LATES PhD, Petru Maior University of Târgu Mureș, Romania

Co-chairman:

Géza LÁMER PhD, University of Debrecen, Hungary

Secretary:

Dávid HURI, University of Debrecen, Hungary

13:00 – 13:15

Nihal SALMAN, Péter KISS

A study of pressure-sinkage relationship used in tyre-terrain interaction

13:15 – 13:30

Zehouani KHEIREDDINE, István OLDAL

Virtual testing method of human knee prosthesis

13:30 – 13:45

Dániel SZABÓ, Tamás MANKOVITS

Characterization of unit cell models with the usage of finite element analysis

13:45 – 14:00

Géza LÁMER

Displacement and rotation. Similarities and differences in the discrete and continuous models

13:00 – 14:15

Session FLUID MECHANICS 2

(Aventics Pneumatic Laboratory, ground floor, room E.0.21.)

Chairman:

Krisztián HRICZÓ PhD, University of Miskolc, Hungary

Co-chairman:

Ferenc SZODRAI PhD, University of Debrecen, Hungary

Secretary:

Zsolt BÉKÉSI, University of Debrecen, Hungary

13:00 – 13:15

Buta SINGH, Zoltán SZAMOSI, Zoltán SIMÉNFALVI

Designing of Lab-scale anaerobic digester equipped with Maxblend impeller to evaluate effect of mixing on anaerobic digestion

13:15 – 13:30

Krisztián HRICZÓ

Boundary value problem for a heated nanofluid flow in the presence of magnetic field

13:30 – 13:45

Péter FÜLE, Gergely KRISTÓF

Comparison of a statistical atmospheric dispersion model with various Gaussian plume based models

13:45 – 14:00

Dániel DOROGI, László BARANYI

Mass ratio effect on flow around a transversally oscillating circular cylinder

14:00 – 14:15

Dániel DOROGI, László BARANYI

Numerical investigations of flow around a freely vibrating cylinder: natural frequency ratio effects



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13:00 – 14:15 **Session MANUFACTURING SCIENCE**

(Metallographic Laboratory, 1st floor, room E.1.20)

Chairman: **Lubomir JAVOREK PhD**, Technical University in Zvolen, Slovakia

Co-chairman: **Sándor BODZÁS PhD**, University of Debrecen, Hungary

Secretary: **András GÁBORA**, University of Debrecen, Hungary

13:00 – 13:15 **Veronika L'UPTÁČIKOVÁ, Richard HNILICA, Miroslava ŤAVODOVÁ**

Increasing the life of mulching tools

13:15 – 13:30 **Luboslav STRAKA, Gabriel DITTRICH**

Possibility of improving the geometrical accuracy of circular holes production using Wire EDM technology

13:30 – 13:45 **Lubomir JAVOREK**

Dependence of the passive force F_p from the revolutions, back engagement of a cutting edge a_e , working engagement of the cutting edge a_p during milling

13:45 – 14:00 **Jelena BARALIĆ, Bogdan NEDIĆ**

The depth of cut in laser milling

14:00 – 14:15 **Luboslav STRAKA, Gabriel DITTRICH**

The influence of chemical composition of the workpiece material on material removal rate at EDM

13:00 – 15:00 **Session MATERIALS SCIENCE AND TECHNOLOGY 3**

(Lecture Hall U.0.01, ground floor)

Chairman: **Krisztián ANDOR PhD**, University of Sopron, Hungary

Co-chairman: **Hasan MUHANDES PhD**, Szent István University, Hungary

Secretary: **Gábor BALOGH**, University of Debrecen, Hungary

13:00 – 13:15 **Worakan HOSAKUN, Levente CSÓKA**

Thermal and electrical properties of transparent and flexible films based on bacterial cellulose-silk fibroin-polyvinyl alcohol impregnated with silver nanocubes for flexible electronics display

13:15 – 13:30 **Muammel SHARBA, Márk KOVÁCS, László ZSIDAI**

Tribological behaviour comparison of ABS polymer manufactured using turning and 3D printing

13:30 – 13:45 **Noémi LÁSZLÓ, Mária MAROSNÉ BERKES**

Applying the CES software during alternative materials selection for an impeller of a car air blowing engine

13:45 – 14:00 **Hasan MUHANDES, Gábor KALÁCSKA**

A slurry abrasive wear test device for several composite materials

14:00 – 14:15 **Gerezgiher BSRAT, Simon SZABÓ**

Development and characterization of sisal fiber reinforced polypropylene composite material for car door interior trim panel application

14:15 – 14:30 **Wafaa CHEIKH, Béla VISKOLCZ, Zsolt FEJES**

Experimental study of polyurethane foams synthesis

14:30 – 14:45 **Krisztián ANDOR, Zsolt KARÁCSONYI, Bertalan BELLOVICS**

Mechanical analysis of DOKA formwork timbers reinforced with CFRP

14:45 – 15:00 **Alaeddine OUSSAI, Zoltán BÁRTFAI**

Development of a small scale plastic recycling technology and a special filament product for 3D printing



ISCAME Sessions in 2017



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

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- 14:30 – 16:00 **Session ENGINEERING INFORMATICS**
(Robert Bosch Engineering Education and Development Laboratory, ground floor, room E.0.22)
Chairman: **Emil ŠKULTÉTY PhD**, Technical University in Zvolen, Slovakia
Co-chairman: **József MENYHÁRT PhD**, University of Debrecen, Hungary
Secretary: **Krisztián DEÁK**, University of Debrecen, Hungary
- 14:30 – 14:45 **Krisztián DEÁK, Imre KOCSIS**
Wavelet design for diagnosis of tapered roller bearing manufacturing faults
- 14:45 – 15:00 **Emil ŠKULTÉTY, Elena PIVARČIOVÁ**
Design and assembly of an inertial measurement unit using platform Arduino
- 15:00 – 15:15 **György BARKÓ, László FÖLDI**
Sensor systems and data processing by AI
- 15:15 – 15:30 **Rabab BENOTSMANE, László DUDÁS, György KOVÁCS**
Cooperation robots using artificial intelligence
- 15:30 – 15:45 **Andor NAGY, István LAKATOS**
Differences in behavior of a normal, and rack railway vehicle's behavior on track
- 15:45 - 16:00 **Lafee ALSHAMAILEH**
Possible biometric technologies in aviation

- 14:30 – 16:15 **Session MACHINE AND PRODUCT DESIGN**
(Aventics Pneumatic Laboratory, ground floor, room E.0.21.)
Chairman: **Malak SHATNAWI PhD**, Óbuda University, Hungary
Co-chairman: **Zsolt TIBA PhD**, University of Debrecen, Hungary
Secretary: **Tibor PÁLFI**, University of Debrecen, Hungary
- 14:30 – 14:45 **Márk VENCZEL, Árpád VERESS**
Introduction to design and analysis of torsional vibration dampers in vehicle industry
- 14:45 – 15:00 **Anita DARABOS**
The observation of natural analogies and their use in design
- 15:00 – 15:15 **Zsolt TIBA, Dániel FEKETE-SZÚCS**
Designing aspects and classification of bearing industry box handling apparatus
- 15:15 – 15:30 **Malak SHATNAWI**
The impact of electric vehicles on sustainability: Jordan as a case study
- 15:30 – 15:45 **Vivien SIPKÁS, Gabriella VADÁSZNÉ BOGNÁR**
Testing of micro switches for garden tools
- 15:45 - 16:00 **Levente CZÉGE**
Special issues in design of steam turbines
- 16:00 - 16:15 **Géza NÉMETH, József PÉTER**
Development of efficient drive based on self-help



Mechanical Engineering Exhibition in 2017



INTERNATIONAL SCIENTIFIC CONFERENCE ON ADVANCES IN MECHANICAL ENGINEERING

11-12 October 2018, Debrecen, Hungary



14:30 – 16:45 **Session MATERIALS SCIENCE AND TECHNOLOGY 4**

(Metallographic Laboratory, 1st floor, room E.1.20)

Chairman: **Sándor PÁLINKÁS PhD**, University of Debrecen, Hungary

Secretary: **András GÁBORA**, University of Debrecen, Hungary

14:30 – 14:45 **Szabolcs JÓNÁS, Miklós TISZA**

Determination of different parameters to high strength steel clinch joints by FEA

14:45 – 15:00 **László TÓTH, Enikő Réka FÁBIÁN**

The effects of quenching and tempering treatment on the hardness and microstructures of cold work tool steel

15:00 – 15:15 **Hamid LAHMAIDI, Péter BAUMLI, György KAPTAY**

Wettability of carbon and nickel surfaces by NaNO_3 – CsNO_3 molten salts

15:15 – 15:30 **Yassine MEHDI, Miklós TISZA**

Formability investigations of Advanced High Strength Steels

15:30 – 15:45 **Ferenc TAJTI, Miklós BERCZELI, Zoltán WELTSCH**

Improvement of high strength automotive steels wettability properties using CO_2 laser surface treatment

15:45 – 16:00 **Gergely JUHÁSZ, Miklós BERCZELI, Zoltán WELTSCH**

Surface activation of High Impact Polystyrene substrate using dynamic atmospheric pressure plasma

16:00 – 16:15 **Miklós BERCZELI, Zoltán WELTSCH**

Measurement possibilities of surface modified substrates

16:15 – 16:30 **Tétény BAROSS, László JÁNOSI, Gábor VERES**

Analytical and discretized calculations for the diffusion welding specimens on a Gleeble 3800 thermomechanical simulator

16:30 – 16:45 **Manoj Kumar PAL, Gréta GERGELY, Gyökeér ZOLTÁN, Dániel KONCZ- HORVÁTH, Zoltán GÁCSI**

Preparation of Ni-coated SiC ceramic powders by electroless plating method

ISCAME poster exhibition (ground floor, room 9.)

Daniel LATES, Marius CASVEAN

Experimental study regarding the influence of compliant hinges geometry in mechanical structures

Tihomir DOVRAMADJIEV

Digitalization of ancient sculpting models and 3D design using photogrammetry methodology

Tamás ANTAL, István-Imre NYÁRÁDI, László SIKOLYA

Effect of natural and artificial drying on the essential oil composition of basil

Shadabeh FATHI, László BEJÓ, Ferenc DIVÓS

DynaRoot System

József MENYHÁRT, Róbert SZABOLCSI

Battery and energy technology analyses with soft computing methods

Gábor SZEPESI, Zoltán SIMÉNFALVI

Heat transfer in reinforced foams

Kremena MARKOVA

Composition and analysis of the visual language of the product

Sándor Gergő TÓTH, György TAKÁCS, Dániel TÓTH

Development of an universal device holder system for dust-test chamber equipment

Zoltán HAGYMÁSSY

Examination of the fertilizer distributor with automatic

József Zoltán SZABÓ, Ferenc DÖMÖTÖR

Verification of shaft critical speed values by comparing data obtained by measurements and calculation of different mechanical models



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Sándor BODZÁS

Analysis of the effect of the addendum modification coefficient for contact stress of spur gear

Csaba NEMES, Javorek LUBOMIR, Sándor BODZÁS, Sándor PÁLINKÁS

The measurement of the three components of the cutting force during the turning process

Attila KÁRI-HORVÁTH, Tamás PATAKI, Zoltán SZAKÁL

The effect of MMs lubrication on surface roughness during machining

Ali AL-AZZAWI, Péter BAUMLI

Brazing and nitriding for increasing the surface hardness of steel 1.4404

Fatima Zohra BRAHMIA, Tibor ALPÁR, Péter György HORVÁTH

Enhancing performances of cement bonded wood-based products

Bella UDVARI, Róbert GÉBER, István KOCSEK

Investigation of aluminum dross as a potential asphalt filler

Annamária TÓTH, Katalin HALÁSZ

Properties of cellulose sheets modified with potassium-humate and copper(II)-sulfate

Sándor PÁLINKÁS, Lajos FAZEKAS, Ágnes BATTÁNYI GINDERT-KELE, András MOLNÁR

Application of cold and hot metal powder spraying

Zoltán SZAKÁL, Attila KÁRI-HORVÁTH, Tamás PATAKI, Miklós ODROBINA

The mechanical properties of 3D printed CuZn28 brass specimens with different orientations

Henrietta HUDÁK, László VARGA

Investigation of the properties of different foundry sand

Dávid HALÁPI, Endre Sándor KOVÁCS, Zoltán BODNÁR, Árpád PALOTÁS, László VARGA

Mechanical properties of 3D printed PLA

Luboš KAŠČÁK, Emil SPIŠÁK

Evaluation of PVD coatings wear of tools for mechanical joining

Anita DARABOS, Judit SZALAI

The Antique Roemer Glass

Roland BICZÓ, Gábor KALÁCSKA

Micromechanical model of dry friction hybrid composite clutch facing

Kinga TAMÁSI, Kálmán MAROSSY

Biobased plasticizers from the kitchen

Krisztina ROMÁN, Gabriella ZSOLDOS

PVC/LDPE blends: relationship between thermal/mechanical properties, structure and blend behavior

Ádám SARANKÓ, Gábor KALÁCSKA, Róbert KERESZTES

Vibration analysis of different materials during turning process



Main building of the University of Debrecen



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INFORMATION TO CHAIRMEN, TO PRESENTERS AND TO VISITORS

Chairmen, Presenters and on-line registered Visitors are invited for lunches and coffees, but it is connected to registration at the registration desk at the Main Hall in the building of the Faculty of Engineering on the Conference days.

To Presenters:

- The official language of ISCAME is English;
- Show up to the session 10 minutes before the session begins;
- Each oral presentation will take 15 minutes including discussion;
- The files required for the presentation (PowerPoint or PDF) must be uploaded and tested in the computer placed in the room before the respective presentation session.

To Poster Presenters:

- The official language of ISCAME is English;
- The Poster Exhibiton will be opened on Thursday 12 October, 9:00 and can be visited until the end of the ISCAME (12 October, 16:00). It means from 9:00 onwards posters can be put on display (Location: Faculty of Engineering, ground floor, room 9.).
- Poster sessions are scheduled on 11 October, from 14:00-15:00 and 12 October, from 9:00-10:00. At this time anyone interested should be received in front of the posters;
- Posters will be displayed on vertical boards with maximum dimensions of 1000mm (width) x 2000mm (height), the recommended poster size is standard A0 with page orientation portrait.

To Chairmen:

- During the presentations enforce time limits strictly so that no author monopolizes someone else's time;
- One presentations are complete the remainder of the time can be used for informal discussion with the audience and session participants. It is your job to field questions from the audience.

In any case please contact:

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LIST OF THE EXHIBITING COMPANIES

6th Mechanical Engineering Industrial Exhibition, Debrecen

Alfra Consulting Kft.	www.alfraconsulting.eu/hu/	Debrecen
Aventics Hungary Kft.	www.aventics.hu	Eger
Coloplast Hungary Kft.	www.coloplast.hu	Nyírbátor
Continental Automotive Hungary Kft.	www.continental-corporation.com	Debrecen
Diehl Aviation Hungary Kft.	www.diehl.com	Debrecen, Nyírbátor
DKV Debreceni Közlekedési Zrt.	www.dkv.hu	Debrecen
eCon Engineering Kft.	www.econengineering.com	Budapest
Electrolux Lehel Kft.	www.electrolux.hu	Nyíregyháza
Enterprise Communications Kft.	www.enterprise-group.hu/plm	Budapest
EuroSolid Kft.	www.eurosolid.hu	Budaörs
FAG Magyarország Ipari Kft.	www.schaeffler.hu	Debrecen
Flexi Force Hungary Kft.	www.flexiforce.hu	Debrecen
Haas Factory Outlet	www.haascnc.com	Leoben
Hoffmann Hungary Quality Tools Kft.	www.hoffmann-group.com	Budapest
Hoya Magyarország Zrt.	www.hoya.com	Mátészalka
igm Robotrendszerek Kft.	www.igm-group.com	Győr
Joyson Safety Systems Hungary Kft.	www.joysonsafety.com	Miskolc
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Manz Hungary Gépgyártó Kft.	www.manz.com	Debrecen
MSK Hungary Gépgyártó Bt.	www.msk.hu	Nyírbátor
NAGÉV RÁCS Kft.	www.nagev.hu	Hajdúböszörmény
NCT Ipari Elektronikai Kft.	www.nct.hu	Budapest
Robert Bosch Automotive Steering Kft.	www.bosch-automotive-steering.com	Eger, Maklár
S&T Consulting Hungary Kft.	www.snt.hu	Budaörs
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