

CONFERENCE PROGRAM

THE 8th INTERNATIONAL CONFERENCE ON
ADVANCED CONCEPTS IN MECHANICAL ENGINEERING
* FACULTY OF MECHANICAL ENGINEERING – 70 YEARS ANNIVERSARY *

ACME2018

JUNE 7 – 8, 2018
IAȘI, ROMANIA

Organized by:



FACULTY of MECHANICAL ENGINEERING

THE "GHEORGHE ASACHI" TECHNICAL UNIVERSITY OF IASI

and



AMIS - FACULTY OF MECHANICAL ENGINEERING ALUMNI ORGANIZATION

Under the aegis of:

ROMANIAN MINISTRY OF NATIONAL EDUCATION AND SCIENTIFIC RESEARCH

ROMANIAN ACADEMY OF TECHNICAL SCIENCES

ACADEMY OF ROMANIAN SCIENTISTS

In partnership with:

SIAR - SOCIETY OF AUTOMOTIVE ENGINEERS OF ROMANIA

ARoTMM - ROMANIAN ASSOCIATION FOR MECHANISMS AND MACHINE SCIENCE

SROMECA - ROMANIAN ASSOCIATION OF MECHATRONICS

Sponsors:



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EURO TECHSYS





First applications related to the field of Mechanical Engineering are included in the engineering school (in Romanian language) founded by Gheorghe Asachi in 1813 and further developed into the University of Iasi, starting with 1860.

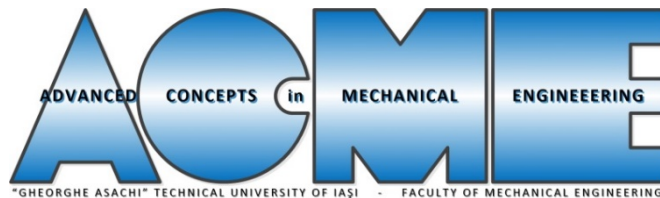
In 1937, by ministerial decree from the Department of National Education, the “Gheorghe Asachi” Polytechnic School is established within Faculty of Science. In the Electro-Technical Department, the following chairs were formed: Applied Mechanics, Strength of Materials and Machine Tools, Technology of Materials, and Thermal Machines.

In October 25, 1948, by Decree no. 263.327 signed by ministry Gh. Vasilichi, the “Gheorghe Asachi” Polytechnic Institute is founded. It included the Faculty of Mechanical Engineering, with four departments: Applied Thermodynamics, Applied Hydraulics, Work Machines and Aero-Naval Constructions. Later on, the departments were renamed as Thermal Machines, Textile Machines, Railroad Vehicles, and Agricultural Mechanics.

In 1990, the Mechanical Engineering curricula were revised and strengthened, in order to provide a broader program of studies. New branches and specializations were recognized, and the educational programs in Mechanical Engineering are now structured on three levels: Bachelor, Master of Science and PhD.

Nowadays, the basic training for Mechanical Engineering is ensured through fundamental knowledge courses (Mathematics, Physics, Chemistry, Theoretical Mechanics), general knowledge courses (Technical Drawing, Machine Design, Strength of Materials, Materials Technology, Computer Design, Thermodynamics and Thermal Systems), as well as through specialization courses in Automotive, Thermal Systems, Machines and Equipments for Agriculture and Food Industry, Mechatronics and Robotics.

These courses enable our students to become excellent specialists, being able to coordinate technical processes in mechanical engineering industry, to elaborate, design and manufacture specific components for mechanical systems.



CONFERENCE PROGRAM OUTLINE

Thursday, June 7, 2018

Conference Hall of the "Gheorghe Asachi" Technical University in Iasi

- | | |
|---------------|---|
| 09:00 – 10:00 | Participants registration |
| 10:00 – 10:30 | Welcome, Opening Addresses (Rector, Mayor, Conference President, Dean) |
| 10:30 – 12:00 | Plenary Session <ol style="list-style-type: none"> 1. <i>Virtual surgery for aortic diseases</i> <i>B Bou-Saïd – INSA Lyon</i> 2. <i>Rehabilitation and Wellbeing: development of assistive mechatronic devices</i> <i>J Machado – University of Minho, Portugal</i> 3. <i>Considerations regarding pressures distributions on leads of spur and helical gears</i> <i>S Crețu – Technical University of Iași, Romania</i> |
| 12:00 – 12:30 | AVAI prototype presentation |
| 12:30 – 14:00 | Lunch Break |

Faculty of Mechanical Engineering (Main Building and UTTex)

- | | |
|---------------|--|
| 14:00 – 16:00 | Sections Session (for location, see detailed program) Poster Session (IMMR Dept., 1st floor) |
| 16:00 – 16:30 | Coffee Break |
| 16:30 – 18:30 | Sections Session |
| 19:00 – 24:00 | Conference Gala Dinner (Verdi Room at Palas Conference Center) |

Friday, June 8, 2018

- | | |
|---------------|-----------------------------------|
| 09:00 – 10:30 | Sections Session (where required) |
| 10:30 – 11:00 | Coffee Break |
| 11:00 – 12:30 | Sections Session (where required) |
| 12:30 – 12:45 | Conference Closing Ceremony |
| 12:45 – 14:30 | Lunch |

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Session ACME-01-01: Machine Design

Thursday, 7 June, 2018

Chairmen: *Prof. Valeriu DULGHERU and Prof. Spiridon CREȚU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|-------------|
| 1 | 01-02 | Generation of the teeth precessional gears by plastic deformation I Bostan, V Dulgheru and N Trifan | 14.00 - 14.15 | S103 |
| 2 | 01-23 | Development and validation of a CFD model used for vertical axis wind turbines simulations V. Bostan, M. Guțu and I Rabei | 14.15 - 14.30 | |
| 3 | 01-03 | Influence of roughness and wear on pressure distribution and stress state at wheel - rail contact C I Bărbîntă and S Crețu | 14.30 - 14.45 | |
| 4 | 01-04 | Tooth contact analysis of spur and helical gears with end relief profiles S Cazan and S Crețu | 14.45 - 15.00 | |
| 5 | 01-05 | Preliminary study for wood screws fatigue I C Românu and I Muscă | 15.00 - 15.15 | |
| 6 | 01-06 | Scalable Wind Turbine Blades nondestructive evaluation using different types of sensors N Iftimie, R Steigmann, G S Dobrescu, N A Danila, A Savin, P D Bărsănescu and V Goanță | 15.15 - 15.30 | |
| 7 | 01-07 | Evaluation of dielectric materials properties using microwave enhanced metamaterials sensor N Iftimie , D Faktorová , P Fabo, A Savin , R Steigmann | 15.30 - 15.45 | |

COFFEE BREAK: 15.45 – 16.15

Session ACME-01-02: Tribology

Thursday, 7 June, 2018

Chairmen: *Prof. Lorena DELEANU and Prof. Alexandru RĂDULESCU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|-----------|
| 1 | 01-08 | Experimental Researches on Additivated Biodegradable Greases I Rădulescu, A V Rădulescu, E I Johns and J Padgurskas | 14.00 – 14.15 | M4 |
| 2 | 01-09 | Experimental Researches of the Grease Durability via Microscopic Investigation I Rădulescu, A V Rădulescu and F Vasiliu | 14.15 - 14.30 | |
| 3 | 01-10 | Experimental proof of squeeze damping capacity of imbibed soft porous layers subjected to impact P Turtoi, M D Pascovici, T Cicone, A N rotariu, C C Puica and M Istrate | 14.30 - 14.45 | |
| 4 | 01-11 | Influence of TiO₂ as nano additive in rapeseed oil G C Cristea, D Cazamir, D Dima, C Georgescu and L Deleanu | 14.45 - 15.00 | |
| 5 | 01-12 | Influence of graphene as additive in soybean oil G C Cristea, C Georgescu, D Dima and L Deleanu | 15.00 - 15.15 | |
| 6 | 01-13 | Performances of automotive lubricants – tests on four ball machine M I Nazare, V Paleu, S Bhaumik , G Ianuş and D N Olaru | 15.15 - 15.30 | |
| 7 | 01-14 | Research on friction influence on the working process of agricultural machines for soil tillage P Cardei, L Vlăduţoiu, G Chişiu, A Tudor, C Sorica, M Gheres, G Gheorghe and S Muraru | 15.30 - 15.45 | |

COFFEE BREAK: 15.45 – 16.30

Session ACME-01-03: Tribology

Thursday, 7 June, 2018

Chairmen: *Prof. Stelian ALACI and Prof. Dumitru OLARU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|-----------|
| 1 | 01-15 | Finding the coefficient of rolling friction using a pericycloidal pendulum S Alaci, F C Ciornei, C Bujoreanu, M C Ciornei and I L Acsinte | 16.30 - 16.45 | M4 |
| 2 | 01-16 | The effect of mass eccentricity upon tribological test results F C Ciornei, S Alaci, C Dulucheanu, C Ciornei and M C Ciornei | 16.45 - 17.00 | |
| 3 | 01-17 | Determining the coefficient of rolling friction using hypocycloidal oscillations S T Siretean, S Alaci, I Muscă and F C Ciornei | 17.00 - 17.15 | |
| 4 | 01-18 | Considerations on friction coefficient in a simple harmonic motion L Irimescu and S Alaci | 17.15 - 17.30 | |

Session ACME-01-04: Tribology

Friday, 8 June, 2018

Chairmen: *Prof. Benyebka BOU-SAÏD and Prof. Dumitru OLARU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|-----------|-------------|
| 1 | 01-19 | Friction torque in a modified angular contact ball bearing operating at low axial loads A Popescu, M I Nazare, and D N Olaru | 9.00-9.15 | S103 |
| 2 | 01-20 | Modeling of the friction forces in steel-polymer sliding tribosystems M C Oprisan, V Carlescu, D Pica, and D N Olaru | 9.15-9.30 | |

Session ACME-02-01: Materials and Surface Engineering

Thursday, 7 June, 2018

Chairmen: *Prof. Constantin BACIU and Prof. Corneliu MUNTEANU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|------|
| 1 | 02-01 | Primary stability of uncemented acetabular liner of a total hip prosthesis using an axisymmetric finite element method based on computed tomography L Capitanu, L L Badita, V Florescu | 14.00 - 14.15 | 012 |
| 2 | 02-02 | Effect of deposition time on tribological and adhesion characteristics of niobium nitride thin films V Merie, G Negrea, M Pustan, B Neamțu, Ș Crăciun | 14.15 - 14.30 | |
| 3 | 02-04 | The influence of deposition time and testing temperature on mechanical proprieties of niobium nitride thin films F M Șerdean, V V Merie, A V Crișan, C Bîrleanu, H G Crișan | 14.30 - 14.45 | |
| 4 | 02-05 | Microstructure and wear behavior for self-fluxing alloy coatings reinforced by WC-Co I L Conciatu, C R Ciubotariu, E R Secosan, D Frunzaverde, C V Campian | 14.45 - 15.00 | |
| 5 | 02-03 | Evaluation of the surface profile obtained by abrasive jet machining L Slatineanu, O Dodun, G Nagîț, M Coteață, L Tăbăcaru, I Beșliu-Băncescu | 15.00 - 15.15 | |
| 6 | 02-12 | Type of deterioration in active rollers for hot rolling mill F Tudose-Sandu-Ville, Ș Tudose-Sandu-Ville | 15.15 - 15.30 | |
| 7 | 02-11 | Investigation on hydroxyapatite coatings formation on titanium surface G Ciobanu, M Harja | 15.30 - 15.45 | |

COFFEE BREAK: 15.45 – 16.15

Session ACME-02-02: Materials and Surface Engineering

Thursday, 7 June, 2018

Chairmen: *Prof. Costică BEJINARIU and Prof. Bogdan ISTRATE*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|------|
| 1 | 02-07 | Experimental, microstructural and tribological studies of the system Mg-2Ca-5Y S Lupescu, C Munteanu, B Istrate, D Luca, M Benchea, G Mahu | 16.15 - 16.30 | 012 |
| 2 | 02-08 | Microstructural aspects at coating-substrate interface for some thermal sprayed layers on valve discs M Panturu, D Chicet, C Munteanu, B Istrate, P Avram | 16.30 - 16.45 | |
| 3 | 02-06 | Influence of Al₂O₃ 13TiO₂ powder on a C45 steel using atmospheric plasma spray process G Mahu, C Munteanu, B Istrate, M Benchea, S Lupescu | 16.45 - 17.00 | |
| 4 | 02-09 | Fire-resistant behavior of some cellular materials treated with intumescent solutions O Mocanita, D Chicet, C Munteanu, B Istrate, B Oprisan | 17.00 - 17.15 | |
| 5 | 02-10 | Aspects regarding the influence of the processing regime on the surface quality of thermal sprayed coatings C Stescu, D Chicet, C Munteanu, B Istrate, M Benchea, G N Basescu | 17.15 - 17.30 | |
| 6 | 02-13 | Design and production of plastic parts for read-write didactic equipment using 3D printer A Ciubară, Ș L Burlea, M Axinte, R Cimpoeșu, D L Chicet, V Manole, G Burlea, N Cimpoeșu | 17.30 - 17.45 | |
| 7 | 02-14 | Heating to thermal shock of Cu-based SMA using a solar concentrator C Tudora, M Abrudeanu, S Stanciu, D Anghel, G A Plaiiașu, V Rizea, I Știrbu, N Cimpoeșu, B Anton Prisacariu | 17.45 - 18.00 | |

Session ACME-03-01: Mechatronics. CAD. Mechanical Vibrations

Thursday, 7 June, 2018

Chairmen: *Prof. Jose MACHADO and Prof. Alina SPÂNU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|-----------|
| 1 | 03-15 | Numerical study on the influence of primary suspension damping upon the dynamic behaviour of railway vehicles M. Dumitriu, M. A. Gheți | 14.00 - 14.15 | M3 |
| 2 | 03-18 | Wheel flat effect on wheel-rail dynamic forces M. A. Spiroiu, C. I. Crăciun | 14.15 - 14.30 | |
| 3 | 03-08 | Longitudinal dynamic force distribution for different hysteretic buffer characteristics C. I. Crăciun, C. Cruceanu | 14.30 - 14.45 | |
| 4 | 03-10 | Numerical study of the interaction between a moving oscillator and an infinite beam on elastic foundation with bilinear characteristic T. Mazilu, I.C. Cruceanu | 14.45 - 15.00 | |
| 5 | 03-04 | Dynamic behaviour of a railway vehicle running on jointed track M.C. Leu | 15.00 - 15.15 | |
| 6 | 03-21 | Numerical integration of the equation of motion of an oscillator with dry friction V. M. Dinu | 15.15 - 15.30 | |

COFFEE BREAK: 15.45 – 16.15

Session ACME-03-02: Mechatronics. CAD. Mechanical Vibrations

Thursday, 7 June, 2018

Chairmen: *Prof. Carmen BUJOREANU and Prof. Daniel BESNEA*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|-----------|
| 1. | 03-19 | Modelling cyber-physical systems: some issues and directions J. Galvão, J. Machado, G. Prisacaru, D. Olaru, C. Bujoreanu | 16.15 - 16.30 | M3 |
| 2. | 03-03 | Study of deflection behavior of 3D printed leaf springs D. Besnea, C.I. Rizescu, D. Rizescu, D. Comeaga, R. Ciobanu, E. Moraru | 16.30 - 16.45 | |
| 3. | 03-07 | Method for controlling the hydraulic pump flow following an imposed frequency law for AC motors M. Avram, A. Spânu, V. Sârbu | 16.45 - 17.00 | |
| 4. | 03-13 | Analysis of three wheeled electric vehicle with increasing stability on the road A. Spânu, F. Stoenescu, M. Lorenzi, M. Avram | 17.00 - 17.15 | |
| 5. | 03-14 | Mechatronic system for car steering control A. Spânu, D. Besnea | 17.15 - 17.30 | |

Session ACME-03-03: Mechatronics. CAD. Mechanical Vibrations

Friday, 8 June, 2018

Chairmen: *Prof. Mihai AVRAM and Prof. Gheorghe PRISĂCARU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|-----------|
| 1 | 03-20 | Influence of ball-seat contact on the noise emissions from common-rail pump outlet valve opening N.D. Petrea, C. Bujoreanu, I.E. Rîpanu | 09.30 - 09.45 | M3 |
| 2 | 03-17 | Hydraulic systems used for pitch control of wind turbines R.I. Pelin, P.D. Bârsănescu, I. Tița | 09.45 – 10.00 | |
| 3 | 03-11 | A brain-computer interface based on the integration of NI myRIO development device and NeuroSky Mindwave headset O.A. Rușanu, L. Cristea, M.C. Luculescu, P.A. Cofas | 10.00 – 10.15 | |

Session ACME-04-01: Theory of Mechanisms and Machinery. Robotics

Thursday, 7 June, 2018

Chairmen: *Prof. Cezar DUCA, Prof. Virgil ATANASIU and Prof. Stelian ALACI*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|--------|
| 1 | 04-01 | Grapho-analytical kinematic analysis for plane cam mechanisms and follower with finite curvature S Alaci, F C Ciornei, F Buium, IC Romanu ,and OT Rusu | 14.00 - 14.15 | TMR-15 |
| 2 | 04-02 | Analytical kinematics for direct coupled shafts using a point-surface contact F C Ciornei, I Doroftei, S Alaci, G Prelipcean and C Dulucceanu | 14.15 - 14.30 | |
| 3 | 04-03 | Quality indices of forces transmission to planar six bar mechanisms C D Duca and F Buium | 14.30 - 14.45 | |
| 4 | 04-04 | Effects of the Hob Tip Radius and Addendum Modification Coefficients on Tooth Bending Stress of Spur Gears under Dynamic Conditions V Atanasiu, F Buium and D Leohchi | 14.45 - 15.00 | |
| 5 | 04-05 | Novel control design algorithm for a PV sun tracking mechanism A Marcu and C Alexandru | 15.00 - 15.15 | |
| 6 | 04-06 | Centrifugal effect on shaft's release of chain transmissions R Saulescu, L Jurj and R Velicu | 15.15 - 15.30 | |
| 7 | 04-07 | Comparative analysis of 1DOF vs. 2DOF speed increasers for counter-rotating wind turbines R Saulescu, M Neagoe and R Velicu | 15.30 - 15.45 | |
| 8 | 04-08 | Virtual Reality Based Visualization and Training of a Quadcopter by using RC Remote Control Transmitter Komal SA Khuwaja, B S Chowdhry, K F Khuwaja, I C Tarca, V O Mihalca and R C Tarca | 15.45 - 16.00 | |

COFFEE BREAK: 16.00 – 16.30

Session ACME-04-02: Theory of Mechanisms and Machinery. Robotics

Thursday, 7 June, 2018

Chairmen: *Prof. Cezar DUCA, Prof. Virgil ATANASIU and Prof. Stelian ALACI*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|--------|
| 9 | 04-09 | A versatile apparatus for inverse and direct kinematic analysis of 3RRR planar parallel mechanisms F Buium, D Leohchi, S Alaci and C Duca | 16.30 - 16.45 | TMR-15 |
| 10 | 04-10 | Rowing: the influence of the angle of inclination of the leg support on the force in the paddle E Budescu, E. Merticaru and M Chirazi | 16.45 - 17.00 | |
| 11 | 04-11 | A perspective on gear meshing quality based on transmission error analysis M C Radu, L Andrei and G Andrei | 17.00 - 17.15 | |
| 12 | 04-12 | Kinematic analysis of a new 6RSS parallel manipulator performing a certain working operation L Milica , A Năstase and G Andrei | 17.15 - 17.30 | |
| 13 | 04-13 | Bicycle transmissions E Levarda | 17.30 - 17.45 | |
| 14 | 04-14 | Compliant mechanism for ankle rehabilitation device. Part I: modeling and design C M Racu (Cazacu) and I Doroftei | 17.45 - 18.00 | |
| 15 | 04-15 | Compliant mechanism for ankle rehabilitation device. Part II: optimization and simulation results C M Racu (Cazacu) and I. Doroftei | 18.00 - 18.15 | |

Session ACME-05-01: Mechanics of Deformable Bodies

Thursday, 7 June, 2018

Chairmen: *Prof. Costică ATANASIU and Prof. Paul Doru BÂRSĂNESCU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|-----------------------------|
| 1 | 05-01 | Influence of friction in compression testing of a chromoplastic polymer C Atanasiu, S Sorohan, F Baci | 14.00 - 14.15 | Faculty Council Room |
| 2 | 05-02 | Hull deflection in still water and in waves of a pipe layer barge L Crudu, O Neculet, O Marcu | 14.15 - 14.30 | |
| 3 | 05-03 | Structural analysis of classical guitar during the technological processing MV Munteanu, MD Stanciu, IS Urucu, PG Duță | 14.30 - 14.45 | |
| 4 | 05-04 | Modal analysis of small turbine blade made from glass fiber composites MV Munteanu, MD Stanciu, SM Năstac, A Savin | 14.45 - 15.00 | |
| 5 | 05-11 | Innovative thermal insulation panels with air channels D Șova, MD Stanciu, E Belea, VV Bidu | 15.00 - 15.15 | |
| 6 | 05-05 | Analytical Model of a Bulb Flat E Oanță, V Hreniuc, P Brice | 15.15 - 15.30 | |
| 7 | 05-06 | New Developments of the Computer Aided Analytical Definition of the Map-Wise Calculus Domains E Oanță, A Raicu and C Panait | 15.30 - 15.45 | |

COFFEE BREAK: 15.45 – 16.15

Session ACME-05-02: Mechanics of Deformable Bodies

Thursday, 7 June, 2018

Chairmen: *Prof. Costică ATANASIU and Prof. Paul Doru BÂRSĂNESCU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|-----------------------------|
| 1 | 05-09 | Comparative analysis of stress state and fatigue behavior of two types of welded joints used for a HEM-beams structure T Ene, D Nedelcu, V Cojocaru, DG Vela | 16.15 - 16.30 | Faculty Council Room |
| 2 | 05-10 | Static, dynamic and fatigue analysis of a railway bridge with pedestrian area T Ene, V Cojocaru, D Nedelcu | 16.30 - 16.45 | |
| 3 | 05-18 | Investigation of limit state criteria for amorphous metals DE Husaru, PD Bârsănescu | 16.45 - 17.00 | |
| 4 | 05-12 | Determining the degradation in-service of mechanical characteristics of railroad tracks type "65 SB" V Goanță, I Blanari, M Alexandrov | 17.00 - 17.15 | |
| 5 | 05-13 | Determining the probability of failure for a diesel electric locomotive 060-DA using fault tree analysis V Goanță, M Alexandrov, D Apostol, I Blanari | 17.15 - 17.30 | |
| 6 | 05-14 | The reliability analysis for some subassemblies in the structure of 060-DA diesel-electric locomotive M Alexandrov, V Goanță, M Mareș, D Apostol, I Blanari | 17.30 - 17.45 | |
| 7 | 05-15 | Computerized diagnosis of electric diesel locomotive type 060 DA 2100 HP using the TATUNG TX-2000 WebPAd M Alexandrov, I Blanari | 17.45 - 18.00 | |
| 8 | 05-16 | Determining residual stresses in operating railroad tracks I Blanari, V Goanță, M Mareș, B Leițoiu, M Alexandrov | 18.00 - 18.15 | |
| 9 | 05-17 | Determination of Fracture Mechanics Parameters Using Simulation Based on Finite Element Analysis C Dănilă, V Goanță | 18.15 - 18.30 | |
| 10 | 05-19 | The numerical simulation of contact between rail-wheel using FEA I Blanari, V Goanță, M Alexandrov | 18.30 - 18.45 | |

**Session ACME-06-01: Automotives. Engine and Transmission.
Road Safety**

Thursday, 7 June, 2018

Chairmen: *Prof. Ion PREDA and Prof. Edward RAKOSI*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|------------|
| 1 | 06-01 | An experimental approach on fuelling a passenger car diesel engine with LPG N C Nutu, C Pana, N Negurescu, A Cernat, D Fuioreescu and L Nemoianu | 14.00 - 14.15 | AR2 |
| 2 | 06-02 | On LPG use at diesel engine: pollutant emissions level and cycle variability aspects L Nemoianu, C Pana, N Negurescu, A Cernat, D Fuioreescu and C Nutu | 14.15 - 14.30 | |
| 3 | 06-03 | The use of animal fats in the diesel fuelled engine A Nicolici, C Pana, N Negurescu, A Cernat and C Nutu | 14.30 - 14.45 | |
| 4 | 06-04 | Effect of side stiffening plates on the stiffness of the bus structure M D Iozsa, V C David and A M Manea | 14.45 - 15.00 | |
| 5 | 06-05 | Wheels aerodynamics and impact on passenger vehicles drag coefficient L Ilea and D Iozsa | 15.00 - 15.15 | |
| 6 | 06-06 | Research on criteria selection for replacing air filters and consequences emphasis M Toma and A Asimopolos | 15.15 - 15.30 | |
| 7 | 06-07 | A study about how to use experimental design to increase the efficiency in a research project G Cristea, D M Constantinescu, C Andreescu and M D Iozsa | 15.30 - 15.45 | |
| 8 | 06-08 | About I-beam versus H-beam connecting rod design using Inventor Autodesk 2018 M Frătița, K Uzuneanu and D T Bălănescu | 15.45 – 16.00 | |

COFFEE BREAK: 16.00 – 16.30

**Session ACME-06-02: Automotives. Engine and Transmission.
Road Safety**

Thursday, 7 June, 2018

Chairmen: *Prof. Ion PREDA and Prof. Edward RAKOSI*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|------------|
| 1 | 06-09 | Monorail - an alternative solution for the urban transport in Romania C I Crăciun, M A Spiroiu and B Voiculescu | 16.30 - 16.45 | AR2 |
| 2 | 06-10 | Analysis of the action of aerodynamic forces in the case of a passenger train S Arsene, I Sebeșan | 16.45 - 17.00 | |
| 3 | 06-11 | Dynamic pantograph behaviour on high-speed electric locomotives G Popa, S Arsene and M A. Gheți | 17.00 - 17.15 | |
| 4 | 06-12 | Particulate matter emission characteristics for a compression ignition engine fueled with a blend of biodiesel and diesel B M Jurchiș, N Burnete, N V Burnete and C D Iclodean | 17.15 - 17.30 | |
| 5 | 06-13 | Influence of tire pressure on the braking distance when driving on snow and asphalt A I Radu, D Trusca and G Toganel | 17.30 - 17.45 | |
| 6 | 06-14 | Analytical study on a model to optimize the truck cab suspension C Stan and D Iozsa | 17.45 - 18.00 | |

Session ACME-06-03: Automotives. Engine and Transmission.

Road Safety

Friday, 8 June, 2018

Chairmen: *Prof. Gheorghe-Alexandru RADU, DHC and Prof. Radu GAIGINSCHI*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|------|
| 1 | 06-15 | Analysis of the spark ignition engine performances by using a theoretical model V Vornicu, T Ulian, E Rakosi, S Talif, G Manolache, L Gaiginschi | 09.00 - 09.15 | AR2 |
| 2 | 06-16 | The study of the performance improvement possibilities by using the principle of zonal cooling for the automotive engine T Ulian, V Vornicu, E Rakosi, G Manolache, S Talif, I Agape | 09.15 - 09.30 | |
| 3 | 06-17 | The exhaust gas temperature control through an adequate thermal management of the engine C I Leahu, S Țărulescu and R Țărulescu | 09.30 - 09.45 | |
| 4 | 06-18 | Casuistic analysis of the passenger's throw-off distance at car collision A Șoica | 09.45 - 10.00 | |
| 5 | 06-19 | Analysis of car-pedestrian accidents occurring at relative medium and high vehicle speed N Ispas, M Năstăsoiu and R I Negrilă | 10.00 - 10.15 | |
| 6 | 06-20 | A comparative study of smoke emissions between idling regimes and high load regimes for a standard diesel direct injection car S M Burciu and G Coman | 10.15 - 10.30 | |

COFFEE BREAK: 10.30 – 11.00

Session ACME-06-04: Automotives. Engine and Transmission.

Road Safety

Friday, 8 June, 2018

Chairmen: *Prof. Gheorghe-Alexandru RADU, DHC and Prof. Radu GAIGINSCHI*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|------|
| 1 | 06-21 | Regarding the evaluation of car stability during lateral slips Helene Șuster and Mihaela Istrate | 11.00 - 11.15 | AR2 |
| 2 | 06-22 | Diagnosis of the diesel engine by analysing the oil sample used C V Zaharia, R Niculescu, A Clenci, V Iorga | 11.15 - 11.30 | |
| 3 | 06-23 | Identifying ways to reduce urban noise pollution by road noise prediction A A BoroIU, A BoroIU and E Neagu | 11.30 - 11.45 | |
| 4 | 06-24 | Proposals for the reorganization of road traffic in the central area of Pitesti municipality based on microsimulation-performed traffic analyses A A BoroIU, E Neagu, A BoroIU and I Vieru | 11.45 - 12.00 | |

Session ACME-07-01: Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems

Thursday, 7 June, 2018

Chairmen: *Prof. Konstantinos PAPAKOSTAS* and *Prof. Carmen-Ema PANAITE*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|------|
| 1 | 07-14 | Condensing boilers and variable speed pumps as a refurbishment option for heating systems in residential buildings - Energy and economic evaluation K T Papakostas and F Pitsavou | 14.00 - 14.15 | 211 |
| 2 | 07-16 | Working fluid selection procedure for Organic Rankine Cycle system used for waste heat recovery from an internal combustion engine that drives a stationary electric generator H Pop, V Apostol, V Bădescu, M H K Aboaltaboq, E Pop and D Taban | 14.15 - 14.30 | |
| 3 | 07-21 | Optimized coupling analysis of internal combustion engine with organic Rankine cycle and mechanical compression refrigeration system D Taban, A Dobrovicescu, V Apostol and H Pop | 14.30 - 14.45 | |
| 4 | 07-24 | Emissions and performance of a single cylinder diesel engine using walnut-diesel blends D Tutunea and A. Gruia | 14.45 - 15.00 | |
| 5 | 07-15 | Numerical study on the movement of air inside the inner cavity of a hovercraft model M S Pavăl, A Popescu, Th Popescu, D Zahariea and D E Husaru | 15.00 - 15.15 | |
| 6 | 07-09 | Experimental investigation on flow quality in MF-TA1 wind tunnel D E Husaru, Th Popescu, D Zahariea and M S Pavăl | 15.15 - 15.30 | |
| 7 | 07-26 | Small-scale 10 kW wind turbine on-grid connected for power supply of two different consumers D Zahariea, C M Husaru and D E Husaru | 15.30 - 15.45 | |
| 8 | 07-27 | Small-scale 5.1 kW wind turbine on-grid connected for outdoor illumination of a small residential district D Zahariea, M V Zotic and M S Pavăl | 15.45 - 16.00 | |

COFFEE BREAK: 16.00 – 16.30

Session ACME-07-02: Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems

Thursday, 7 June, 2018

Chairmen: *Prof. Viorel POPA and Prof. Aristotel POPESCU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|------|
| 1 | 07-19 | CFD prediction of combustion in a swirl combustor F Popescu, R A Mahu, N A Antonescu and I V Ion | 16.30 - 16.45 | 211 |
| 2 | 07-17 | Increasing the air source heat pump efficiency at low ambient temperature by using a two-phase ejector V Popa, C L Popa | 16.45 - 17.00 | |
| 3 | 07-18 | Study concerning the influence of refrigerant injection on the efficiency of a heat pump V Popa, C L Popa | 17.00 - 17.15 | |
| 4 | 07-08 | Heat transfer theoretical study of a single borehole system used to remove heat from the ground B Horbaniuc, Gh Dumitraşcu and A Dumencu | 17.15 - 17.30 | |
| 5 | 07-04 | Waffle structure optimization in terms of energy efficiency and spatial geometry for a single family house A I Dumitraşcu, T M Hapurne, I Bliuc, C G Corduban and R M Nica | 17.30 - 17.45 | |
| 6 | 07-05 | Assessing the energy performance of existing buildings based on measurement data. Case study A I Dumitraşcu, T M Hapurne, A L Kadhim-Abid and I Bliuc | 17.45 - 18.00 | |

Session ACME-07-03: Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems

Friday, 8 June 2018

Chairmen: *Prof. Mihai Marius PRODAN* and *Prof. Marius-Vasile ATANASIU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|---|---------------|------------|
| 1 | 07-10 | Efficiency of solar collectors – a review A G Lupu, V M Homutescu, D T Bălănescu and A Popescu | 09.00 - 09.15 | 211 |
| 2 | 07-11 | A review of solar photovoltaic systems cooling technologies A G Lupu, V M Homutescu, D T Bălănescu and A Popescu | 09.15 - 09.30 | |
| 3 | 07-20 | A 0D Representation of the Arterial Network Incorporating the Heart A A Prodan, M M Prodan and M V Atanasiu | 09.30 - 09.45 | |
| 4 | 07-22 | 3D solid modelling and optimal design of a particular toroidal LPG storage tank M Țălu, M Bică and Ș Țălu | 09.45 - 10.00 | |
| 5 | 07-23 | The optimal design of a 3D pentagonal toroid with circular cross-section used in manufacturing of LPG storage tanks M Țălu, M Bică and Ș Țălu | 10.00 - 10.15 | |
| 6 | 07-12 | Natural convection near a vertical wall of constant mass flux and temperature situated in a mass stratified fluid M Neagu | 10.15 - 10.30 | |

COFFEE BREAK: 10.30 – 11.00

Session ACME-07-04: Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems

Friday, 8 June 2018

Chairmen: *Prof. Vlad-Mario HOMUTESCU and Prof. Dan-Teodor BĂLĂNESCU*

| No. | ACME code | Title of the papers and authors | Hours | Room |
|-----|-----------|--|---------------|------|
| 1 | 07-01 | Experimental study on enhanced heat transfer by water spraying in the cooling air flow D T Bălănescu, V M Homutescu and A G Lupu | 09.00 - 09.15 | 211 |
| 2 | 07-02 | Micro gas and steam turbines power generation system for hybrid electric vehicles D T Bălănescu, V M Homutescu and A Popescu | 09.15 - 09.30 | |
| 3 | 07-03 | Effect of flue on Stationary States and Processes in the Cardio-Pulmonary System described in Quantum Biological Thermodynamics with Finite Speed B Borcilă, S Petrescu, M Costea, R Bolohan, V Petrescu and G Botez | 09.30 - 09.40 | |
| 4 | 07-06 | Physico-Mathematical Model for Theoretical One-Stage Heat-Driven Compressor V M Homutescu, D T Bălănescu and A G Lupu | 09.40 - 09.50 | |
| 5 | 07-07 | Adiabatic Behavior of the Vuilleumier Heat Pump V M Homutescu, D T Bălănescu and A Popescu | 09.50 - 10.00 | |
| 6 | 07-25 | Theoretical study on performance of a combined gas and steam turbine propulsion system for road transport K Uzuneanu | 10.00- 10.15 | |
| 7 | 07-13 | Performance Assessment of a Solar-Powered Adsorption Air Conditioning System C E Panaite, A Popescu, V M Homutescu and K Uzuneanu | 10.15 - 10.30 | |

ACME Poster Session

Thursday, 7 June, 2018

| ACME code | Title of the papers and authors | Hours | Room |
|-----------|--|---------------|--|
| 01-21 | Study on the loading capacity of the tripod type couplings with external contacts M T Lates and C C Gavrilă | 14.00 - 18.00 | IMMR Dept. 1st floor |
| 01-22 | Study on the friction in the tripod type couplings with external contacts M T Lates | | |
| 03-01 | A hexapod robot for off-road applications A. Cartal, T. Apostolescu, A. Petre | | |
| 03-02 | Additive Technologies for realization of microfluidic systems D. Besnea, E. Dinu, M. Avram, A. Spanu, V. Constatin, I. Panait | | |
| 03-09 | Developing a new mobile robotic structure for Search and Rescue operations A. Cartal, V. Gheorghe, A. Rotaru, D. Duminica, S. Petrache | | |
| 03-05 | Study and realization of prosthetic dental models by additive technologies E. Moraru, O. Dontu, D. Besnea, V. Constantin | | |
| 03-16 | Simulation of the emotional states using a biomimetic structure M. Ionescu, I. Borcoși, N.G. Bîzdoacă | | |
| 03-12 | The control of an inverted pendulum system based on simple and adaptive fuzzy regulators G. Gîlcă, M. Ionescu, N.G. Bîzdoacă, I. Diaconu | | |
| 04-16 | Mechanisms with Bevel Internal Gears Having a Small Difference in Numbers of Teeth O Crivoi and I Doroftei | | |
| 04-17 | Aspects Concerning the Efficiency of the Planetary Mechanisms with Internal Gears Having a Small Difference in Numbers of Teeth O. Crivoi, I. Doroftei | | |
| 04-18 | An Overview on the Applications of Mechanisms in Architecture. Part I: deployable Structures I A Doroftei, C Bujoreanu and I Doroftei | | |
| 04-19 | An Overview on the Applications of Mechanisms in Architecture. Part II: Kinetic Facades I A Doroftei, C Bujoreanu and I Doroftei | | |
| 05-20 | Failure surfaces morphology for specimens with stress concentrators using scanning electron microscopy A David, A-M Comanici, B Istrate, C Munteanu and P D Barsanescu | | |

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TOPICS:

- Machine Design. Tribology (Section 1)
- Materials and Surface Engineering (Section 2)
- Mechatronics. CAD. Mechanical Vibrations (Section 3)
- Theory of Mechanisms and Machinery. Robotics (Section 4)
- Mechanics of Deformable Bodies (Section 5)
- Automotives. Engine and Transmission. Road Safety (Section 6)
- Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems (Section 7)

