

# CONFERENCE PROGRAM

THE 8<sup>th</sup> 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:



**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.

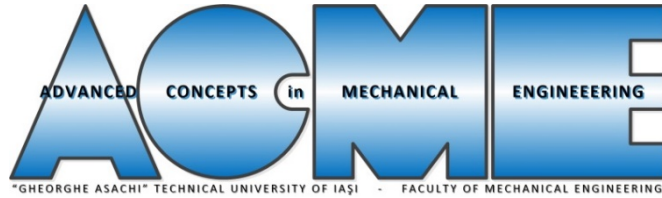
In 1937, by ministerial decree from the Department of National Education, the “Gheorghe Asachi” Polytechnic School is established within Faculty of Science. In the Electro-Technical Department, the following chairs were formed: Applied Mechanics, Strength of Materials and Machine Tools, Technology of 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<br>(Rector, Mayor, Conference President, Dean)   |
| 10:30 – 12:00 | Plenary Session <ol style="list-style-type: none"><li><b>1. <i>Virtual surgery for aortic diseases</i></b><br/><i>B Bou-Saïd – INSA Lyon</i></li><li><b>2. <i>Rehabilitation and Wellbeing: development of assistive mechatronic devices</i></b><br/><i>J Machado – University of Minho, Portugal</i></li><li><b>3. <i>Considerations regarding pressures distributions on leads of spur and helical gears</i></b><br/><i>S Crețu – Technical University of Iași, Romania</i></li></ol> |
| 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)<br>Poster Session ( <b>IMMR Dept., 1st floor</b> ) |
| 16:00 – 16:30 | Coffee Break   |
| 16:30 – 18:30 | Sections Session   |
| 19:00 – 24:00 | Conference Gala Dinner<br>( <b>Verdi</b> 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                             |

## CONFERENCE CHAIRMEN

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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	<b>Generation of the teeth precessional gears by plastic deformation</b> I Bostan, V Dulgheru and N Trifan	14.00 - 14.15	<b>S103</b>
2	01-23	<b>Development and validation of a CFD model used for vertical axis wind turbines simulations</b> V. Bostan, M. Guțu and I Rabei	14.15 - 14.30	
3	01-03	<b>Influence of roughness and wear on pressure distribution and stress state at wheel - rail contact</b> C I Bărbîntă and S Crețu	14.30 - 14.45	
4	01-04	<b>Tooth contact analysis of spur and helical gears with end relief profiles</b> S Cazan and S Crețu	14.45 - 15.00	
5	01-05	<b>Preliminary study for wood screws fatigue</b> I C Românu and I Muscă	15.00 - 15.15	
6	01-06	<b>Scalable Wind Turbine Blades nondestructive evaluation using different types of sensors</b> N Iftimie, R Steigmann, G S Dobrescu, N A Danila, A Savin, P D Bârsănescu and V Goanță	15.15 - 15.30	
7	01-07	<b>Evaluation of dielectric materials properties using microwave enhanced metamaterials sensor</b> 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	<b>Experimental Researches on Additivated Biodegradable Greases</b> I Rădulescu, A V Rădulescu, E I Johns and J Padgurskas	14.00 – 14.15	<b>M4</b>
2	01-09	<b>Experimental Researches of the Grease Durability via Microscopic Investigation</b> I Rădulescu, A V Rădulescu and F Vasiliu	14.15 - 14.30	
3	01-10	<b>Experimental proof of squeeze damping capacity of imbibed soft porous layers subjected to impact</b> P Turtoi, M D Pascovici, T Cicone, A N rotariu, C C Puica and M Istrate	14.30 - 14.45	
4	01-11	<b>Influence of TiO<sub>2</sub> as nano additive in rapeseed oil</b> G C Cristea, D Cazamir, D Dima, C Georgescu and L Deleanu	14.45 - 15.00	
5	01-12	<b>Influence of graphene as additive in soybean oil</b> G C Cristea, C Georgescu, D Dima and L Deleanu	15.00 - 15.15	
6	01-13	<b>Performances of automotive lubricants – tests on four ball machine</b> M I Nazare, V Paleu, S Bhaumik , G Ianuş and D N Olaru	15.15 - 15.30	
7	01-14	<b>Research on friction influence on the working process of agricultural machines for soil tillage</b> 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	<b>Finding the coefficient of rolling friction using a pericycloidal pendulum</b> S Alaci, F C Ciornei, C Bujoreanu, M C Ciornei and I L Acsinte	16.30 - 16.45	<b>M4</b>
2	01-16	<b>The effect of mass eccentricity upon tribological test results</b> F C Ciornei, S Alaci, C Dulucheanu, C Ciornei and M C Ciornei	16.45 - 17.00	
3	01-17	<b>Determining the coefficient of rolling friction using hypocycloidal oscillations</b> S T Siretean, S Alaci, I Muscă and F C Ciornei	17.00 - 17.15	
4	01-18	<b>Considerations on friction coefficient in a simple harmonic motion</b> 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	<b>Friction torque in a modified angular contact ball bearing operating at low axial loads</b> A Popescu, M I Nazare, and D N Olaru	9.00-9.15	<b>S103</b>
2	01-20	<b>Modeling of the friction forces in steel-polymer sliding tribosystems</b> 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	<b>Primary stability of uncemented acetabular liner of a total hip prosthesis using an axisymmetric finite element method based on computed tomography</b> L Capitanu, L L Badita, V Florescu	14.00 - 14.15	012
2	02-02	<b>Effect of deposition time on tribological and adhesion characteristics of niobium nitride thin films</b> V Merie, G Negrea, M Pustan, B Neamțu, Ș Crăciun	14.15 - 14.30	
3	02-04	<b>The influence of deposition time and testing temperature on mechanical proprieties of niobium nitride thin films</b> F M Șerdean, V V Merie, A V Crișan, C Bîrleanu, H G Crișan	14.30 - 14.45	
4	02-05	<b>Microstructure and wear behavior for self-fluxing alloy coatings reinforced by WC-Co</b> I L Conciatu, C R Ciubotariu, E R Secosan, D Frunzaverde, C V Campian	14.45 - 15.00	
5	02-03	<b>Evaluation of the surface profile obtained by abrasive jet machining</b> L Slatineanu, O Dodun, G Nagiț, M Coteață, L Tăbăcaru, I Beșliu-Băncescu	15.00 - 15.15	
6	02-12	<b>Type of deterioration in active rollers for hot rolling mill</b> F Tudose-Sandu-Ville, Ș Tudose-Sandu-Ville	15.15 - 15.30	
7	02-11	<b>Investigation on hydroxyapatite coatings formation on titanium surface</b> 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	<b>Experimental, microstructural and tribological studies of the system Mg-2Ca-5Y</b> S Lupescu, C Munteanu, B Istrate, D Luca, M Benchea, G Mahu	16.15 - 16.30	<b>012</b>
2	02-08	<b>Microstructural aspects at coating-substrate interface for some thermal sprayed layers on valve discs</b> M Panturu, D Chicet, C Munteanu, B Istrate, P Avram	16.30 - 16.45	
3	02-06	<b>Influence of Al<sub>2</sub>O<sub>3</sub> 13TiO<sub>2</sub> powder on a C45 steel using atmospheric plasma spray process</b> G Mahu, C Munteanu, B Istrate, M Benchea, S Lupescu	16.45 - 17.00	
4	02-09	<b>Fire-resistant behavior of some cellular materials treated with intumescent solutions</b> O Mocanita, D Chicet, C Munteanu, B Istrate, B Oprisan	17.00 - 17.15	
5	02-10	<b>Aspects regarding the influence of the processing regime on the surface quality of thermal sprayed coatings</b> C Stescu, D Chicet, C Munteanu, B Istrate, M Benchea, G N Basescu	17.15 - 17.30	
6	02-13	<b>Design and production of plastic parts for read-write didactic equipment using 3D printer</b> A Ciubară, Ș L Burlea, M Axinte, R Cimpoșu, D L Chicet, V Manole, G Burlea, N Cimpoșu	17.30 - 17.45	
7	02-14	<b>Heating to thermal shock of Cu-based SMA using a solar concentrator</b> C Tudora, M Abrudeanu, S Stanciu, D Anghel, G A Plaiășu, V Rizea, I Știrbu, N Cimpoșu, 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	<b>Numerical study on the influence of primary suspension damping upon the dynamic behaviour of railway vehicles</b> M. Dumitriu, M. A. Gheți	14.00 - 14.15	<b>M3</b>
2	03-18	<b>Wheel flat effect on wheel-rail dynamic forces</b> M. A. Spiroiu, C. I. Crăciun	14.15 - 14.30	
3	03-08	<b>Longitudinal dynamic force distribution for different hysteretic buffer characteristics</b> C. I. Crăciun, C. Cruceanu	14.30 - 14.45	
4	03-10	<b>Numerical study of the interaction between a moving oscillator and an infinite beam on elastic foundation with bilinear characteristic</b> T. Mazilu, I.C. Cruceanu	14.45 - 15.00	
5	03-04	<b>Dynamic behaviour of a railway vehicle running on jointed track</b> M.C. Leu	15.00 - 15.15	
6	03-21	<b>Numerical integration of the equation of motion of an oscillator with dry friction</b> 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	<b>Modelling cyber-physical systems: some issues and directions</b> J. Galvão, J. Machado, G. Prisacaru, D. Olaru, C. Bujoreanu	16.15 - 16.30	<b>M3</b>
2.	03-03	<b>Study of deflection behavior of 3D printed leaf springs</b> D. Besnea, C.I. Rizescu, D. Rizescu, D. Comeaga, R. Ciobanu, E. Moraru	16.30 - 16.45	
3.	03-07	<b>Method for controlling the hydraulic pump flow following an imposed frequency law for AC motors</b> M. Avram, A. Spânu, V. Sârbu	16.45 - 17.00	
4.	03-13	<b>Analysis of three wheeled electric vehicle with increasing stability on the road</b> A. Spânu, F. Stoenescu, M. Lorenzi, M. Avram	17.00 - 17.15	
5.	03-14	<b>Mechatronic system for car steering control</b> 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	<b>Influence of ball-seat contact on the noise emissions from common-rail pump outlet valve opening</b> N.D. Petrea, C. Bujoreanu, I.E. Rîpanu	09.30 - 09.45	<b>M3</b>
2	03-17	<b>Hydraulic systems used for pitch control of wind turbines</b> R.I. Pelin, P.D. Bârsănescu, I. Tița	09.45 – 10.00	
3	03-11	<b>A brain-computer interface based on the integration of NI myRIO development device and NeuroSky Mindwave headset</b> O.A. Rușanu, L. Cristea, M.C. Luculescu, P.A. Coffas	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	<b>Grapho-analytical kinematic analysis for plane cam mechanisms and follower with finite curvature</b> S Alaci, F C Ciornei, F Buium, IC Romanu ,and OT Rusu	14.00 - 14.15	<b>TMR-15</b>
2	04-02	<b>Analytical kinematics for direct coupled shafts using a point-surface contact</b> F C Ciornei, I Doroftei, S Alaci, G Prelipcean and C Dulucheanu	14.15 - 14.30	
3	04-03	<b>Quality indices of forces transmission to planar six bar mechanisms</b> C D Duca and F Buium	14.30 - 14.45	
4	04-04	<b>Effects of the Hob Tip Radius and Addendum Modification Coefficients on Tooth Bending Stress of Spur Gears under Dynamic Conditions</b> V Atanasiu, F Buium and D Leohchi	14.45 - 15.00	
5	04-05	<b>Novel control design algorithm for a PV sun tracking mechanism</b> A Marcu and C Alexandru	15.00 - 15.15	
6	04-06	<b>Centrifugal effect on shaft's release of chain transmissions</b> R Saulescu, L Jurj and R Velicu	15.15 - 15.30	
7	04-07	<b>Comparative analysis of 1DOF vs. 2DOF speed increasers for counter-rotating wind turbines</b> R Saulescu, M Neagoe and R Velicu	15.30 - 15.45	
8	04-08	<b>Virtual Reality Based Visualization and Training of a Quadcopter by using RC Remote Control Transmitter</b> 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	<b>A versatile apparatus for inverse and direct kinematic analysis of 3RRR planar parallel mechanisms</b> F Buium, D Leohchi, S Alaci and C Duca	16.30 - 16.45	TMR-15
10	04-10	<b>Rowing: the influence of the angle of inclination of the leg support on the force in the paddle</b> E Budescu, E. Merticaru and M Chirazi	16.45 - 17.00	
11	04-11	<b>A perspective on gear meshing quality based on transmission error analysis</b> M C Radu, L Andrei and G Andrei	17.00 - 17.15	
12	04-12	<b>Kinematic analysis of a new 6RSS parallel manipulator performing a certain working operation</b> L Milica , A Năstase and G Andrei	17.15 - 17.30	
13	04-13	<b>Bicycle transmissions</b> E Levarda	17.30 - 17.45	
14	04-14	<b>Compliant mechanism for ankle rehabilitation device. Part I: modeling and design</b> C M Racu (Cazacu) and I Doroftei	17.45 - 18.00	
15	04-15	<b>Compliant mechanism for ankle rehabilitation device. Part II: optimization and simulation results</b> 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	<b>Influence of friction in compression testing of a chromoplastic polymer</b> C Atanasiu, S Sorohan, F Baciu	14.00 - 14.15	Faculty Council Room
2	05-02	<b>Hull deflection in still water and in waves of a pipe layer barge</b> L Crudu, O Neculet, O Marcu	14.15 - 14.30	
3	05-03	<b>Structural analysis of classical guitar during the technological processing</b> MV Munteanu, MD Stanciu, IS Urucu, PG Duță	14.30 - 14.45	
4	05-04	<b>Modal analysis of small turbine blade made from glass fiber composites</b> MV Munteanu, MD Stanciu, SM Năstac, A Savin	14.45 - 15.00	
5	05-11	<b>Innovative thermal insulation panels with air channels</b> D Șova, MD Stanciu, E Belea, VV Bidu	15.00 - 15.15	
6	05-05	<b>Analytical Model of a Bulb Flat</b> E Oanță, V Hreniuc, P Brice	15.15 - 15.30	
7	05-06	<b>New Developments of the Computer Aided Analytical Definition of the Map-Wise Calculus Domains</b> 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	<b>Comparative analysis of stress state and fatigue behavior of two types of welded joints used for a HEM-beams structure</b> T Ene, D Nedelcu, V Cojocaru, DG Vela	16.15 - 16.30	<b>Faculty Council Room</b>
2	05-10	<b>Static, dynamic and fatigue analysis of a railway bridge with pedestrian area</b> T Ene, V Cojocaru, D Nedelcu	16.30 - 16.45	
3	05-18	<b>Investigation of limit state criteria for amorphous metals</b> DE Husaru, PD Bârsănescu	16.45 - 17.00	
4	05-12	<b>Determining the degradation in-service of mechanical characteristics of railroad tracks type "65 SB"</b> V Goanță, I Blanari, M Alexandrov	17.00 - 17.15	
5	05-13	<b>Determining the probability of failure for a diesel electric locomotive 060-DA using fault tree analysis</b> V Goanță, M Alexandrov, D Apostol, I Blanari	17.15 - 17.30	
6	05-14	<b>The reliability analysis for some subassemblies in the structure of 060-DA diesel-electric locomotive</b> M Alexandrov, V Goanță, M Mareș, D Apostol, I Blanari	17.30 - 17.45	
7	05-15	<b>Computerized diagnosis of electric diesel locomotive type 060 DA 2100 HP using the TATUNG TX-2000 WebPAd</b> M Alexandrov, I Blanari	17.45 - 18.00	
8	05-16	<b>Determining residual stresses in operating railroad tracks</b> I Blanari, V Goanță, M Mareș, B Leițoiu, M Alexandrov	18.00 - 18.15	
9	05-17	<b>Determination of Fracture Mechanics Parameters Using Simulation Based on Finite Element Analysis</b> C Dănilă, V Goanță	18.15 - 18.30	
10	05-19	<b>The numerical simulation of contact between rail-wheel using FEA</b> 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	<b>An experimental approach on fuelling a passenger car diesel engine with LPG</b> N C Nutu, C Pana, N Negurescu, A Cernat, D Fuiorescu and L Nemoianu	14.00 - 14.15	AR2
2	06-02	<b>On LPG use at diesel engine: pollutant emissions level and cycle variability aspects</b> L Nemoianu, C Pana, N Negurescu, A Cernat, D Fuiorescu and C Nutu	14.15 - 14.30	
3	06-03	<b>The use of animal fats in the diesel fuelled engine</b> A Nicolici, C Pana, N Negurescu, A Cernat and C Nutu	14.30 - 14.45	
4	06-04	<b>Effect of side stiffening plates on the stiffness of the bus structure</b> M D Iozsa, V C David and A M Manea	14.45 - 15.00	
5	06-05	<b>Wheels aerodynamics and impact on passenger vehicles drag coefficient</b> L Ilea and D Iozsa	15.00 - 15.15	
6	06-06	<b>Research on criteria selection for replacing air filters and consequences emphasis</b> M Toma and A Asimopolos	15.15 - 15.30	
7	06-07	<b>A study about how to use experimental design to increase the efficiency in a research project</b> G Cristea, D M Constantinescu, C Andreescu and M D Iozsa	15.30 - 15.45	
8	06-08	<b>About I-beam versus H-beam connecting rod design using Inventor Autodesk 2018</b> M Frățița, 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	<b>Monorail - an alternative solution for the urban transport in Romania</b> C I Crăciun, M A Spiroiu and B Voiculescu	16.30 - 16.45	AR2
2	06-10	<b>Analysis of the action of aerodynamic forces in the case of a passenger train</b> S Arsene, I Sebeşan	16.45 - 17.00	
3	06-11	<b>Dynamic pantograph behaviour on high-speed electric locomotives</b> G Popa, S Arsene and M A. Gheţi	17.00 - 17.15	
4	06-12	<b>Particulate matter emission characteristics for a compression ignition engine fueled with a blend of biodiesel and diesel</b> B M Jurchiş, N Burnete, N V Burnete and C D Iclodean	17.15 - 17.30	
5	06-13	<b>Influence of tire pressure on the braking distance when driving on snow and asphalt</b> A I Radu, D Trusca and G Toganel	17.30 - 17.45	
6	06-14	<b>Analytical study on a model to optimize the truck cab suspension</b> 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	<b>Analysis of the spark ignition engine performances by using a theoretical model</b> V Vornicu, T Ulian, E Rakosi, S Talif, G Manolache, L Gaiginschi	09.00 - 09.15	AR2
2	06-16	<b>The study of the performance improvement possibilities by using the principle of zonal cooling for the automotive engine</b> T Ulian, V Vornicu, E Rakosi, G Manolache, S Talif, I Agape	09.15 - 09.30	
3	06-17	<b>The exhaust gas temperature control through an adequate thermal management of the engine</b> C I Leahu, S Țărulescu and R Țărulescu	09.30 - 09.45	
4	06-18	<b>Casuistic analysis of the passenger's throw-off distance at car collision</b> A Șoica	09.45 - 10.00	
5	06-19	<b>Analysis of car-pedestrian accidents occurring at relative medium and high vehicle speed</b> N Ispas, M Năstăsoiu and R I Negrilă	10.00 - 10.15	
6	06-20	<b>A comparative study of smoke emissions between idling regimes and high load regimes for a standard diesel direct injection car</b> 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	<b>Regarding the evaluation of car stability during lateral slips</b> Helene Şuster and Mihaela Istrate	11.00 - 11.15	AR2
2	06-22	<b>Diagnosis of the diesel engine by analysing the oil sample used</b> C V Zaharia, R Niculescu, A Clenci, V Iorga	11.15 - 11.30	
3	06-23	<b>Identifying ways to reduce urban noise pollution by road noise prediction</b> A A Boroiu, A Boroiu and E Neagu	11.30 - 11.45	
4	06-24	<b>Proposals for the reorganization of road traffic in the central area of Pitesti municipality based on microsimulation-performed traffic analyses</b> 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	<b>Condensing boilers and variable speed pumps as a refurbishment option for heating systems in residential buildings - Energy and economic evaluation</b> K T Papakostas and F Pitsavou	14.00 - 14.15	<b>211</b>
2	07-16	<b>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</b> H Pop, V Apostol, V Bădescu, M H K Aboaltaboq, E Pop and D Taban	14.15 - 14.30	
3	07-21	<b>Optimized coupling analysis of internal combustion engine with organic Rankine cycle and mechanical compression refrigeration system</b> D Taban, A Dobrovicescu, V Apostol and H Pop	14.30 - 14.45	
4	07-24	<b>Emissions and performance of a single cylinder diesel engine using walnut-diesel blends</b> D Tutunea and A. Gruia	14.45 - 15.00	
5	07-15	<b>Numerical study on the movement of air inside the inner cavity of a hovercraft model</b> M S Pavăl, A Popescu, Th Popescu, D Zahariea and D E Husaru	15.00 - 15.15	
6	07-09	<b>Experimental investigation on flow quality in MF-TA1 wind tunnel</b> D E Husaru, Th Popescu, D Zahariea and M S Pavăl	15.15 - 15.30	
7	07-26	<b>Small-scale 10 kW wind turbine on-grid connected for power supply of two different consumers</b> D Zahariea, C M Husaru and D E Husaru	15.30 - 15.45	
8	07-27	<b>Small-scale 5.1 kW wind turbine on-grid connected for outdoor illumination of a small residential district</b> 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	<b>CFD prediction of combustion in a swirl combustor</b> F Popescu, R A Mahu, N A Antonescu and I V Ion	16.30 - 16.45	<b>211</b>
2	07-17	<b>Increasing the air source heat pump efficiency at low ambient temperature by using a two-phase ejector</b> V Popa, C L Popa	16.45 - 17.00	
3	07-18	<b>Study concerning the influence of refrigerant injection on the efficiency of a heat pump</b> V Popa, C L Popa	17.00 - 17.15	
4	07-08	<b>Heat transfer theoretical study of a single borehole system used to remove heat from the ground</b> B Horbaniuc, Gh Dumitraşcu and A Dumencu	17.15 - 17.30	
5	07-04	<b>Waffle structure optimization in terms of energy efficiency and spatial geometry for a single family house</b> A I Dumitraşcu, T M Hapurne, I Bliuc, C G Corduban and R M Nica	17.30 - 17.45	
6	07-05	<b>Assessing the energy performance of existing buildings based on measurement data. Case study</b> 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	<b>Efficiency of solar collectors – a review</b> A G Lupu, V M Homutescu, D T Bălănescu and A Popescu	09.00 - 09.15	<b>211</b>
2	07-11	<b>A review of solar photovoltaic systems cooling technologies</b> A G Lupu, V M Homutescu, D T Bălănescu and A Popescu	09.15 - 09.30	
3	07-20	<b>A 0D Representation of the Arterial Network Incorporating the Heart</b> A A Prodan, M M Prodan and M V Atanasiu	09.30 - 09.45	
4	07-22	<b>3D solid modelling and optimal design of a particular toroidal LPG storage tank</b> M Țălu, M Bică and Ș Țălu	09.45 - 10.00	
5	07-23	<b>The optimal design of a 3D pentagonal toroid with circular cross-section used in manufacturing of LPG storage tanks</b> M Țălu, M Bică and Ș Țălu	10.00 - 10.15	
6	07-12	<b>Natural convection near a vertical wall of constant mass flux and temperature situated in a mass stratified fluid</b> 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	<b>Experimental study on enhanced heat transfer by water spraying in the cooling air flow</b> D T Bălănescu, V M Homutescu and A G Lupu	09.00 - 09.15	<b>211</b>
2	07-02	<b>Micro gas and steam turbines power generation system for hybrid electric vehicles</b> D T Bălănescu, V M Homutescu and A Popescu	09.15 - 09.30	
3	07-03	<b>Effect of flue on Stationary States and Processes in the Cardio-Pulmonary System described in Quantum Biological Thermodynamics with Finite Speed</b> B Borcilă, S Petrescu, M Costea, R Bolohan, V Petrescu and G Botez	09.30 - 09.40	
4	07-06	<b>Physico-Mathematical Model for Theoretical One-Stage Heat-Driven Compressor</b> V M Homutescu, D T Bălănescu and A G Lupu	09.40 - 09.50	
5	07-07	<b>Adiabatic Behavior of the Vuilleumier Heat Pump</b> V M Homutescu, D T Bălănescu and A Popescu	09.50 - 10.00	
6	07-25	<b>Theoretical study on performance of a combined gas and steam turbine propulsion system for road transport</b> K Uzuneanu	10.00- 10.15	
7	07-13	<b>Performance Assessment of a Solar-Powered Adsorption Air Conditioning System</b> 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	<b>Study on the loading capacity of the tripod type couplings with external contacts</b> M T Lates and C C Gavrilă	14.00 - 18.00	IMMR Dept. 1 <sup>st</sup> floor
01-22	<b>Study on the friction in the tripod type couplings with external contacts</b> M T Lates		
03-01	<b>A hexapod robot for off-road applications</b> A. Cartal, T. Apostolescu, A. Petre		
03-02	<b>Additive Technologies for realization of microfluidic systems</b> D. Besnea, E. Dinu, M. Avram, A. Spanu, V. Constatin, I. Panait		
03-09	<b>Developing a new mobile robotic structure for Search and Rescue operations</b> A. Cartal, V. Gheorghe, A. Rotaru, D. Duminica, S. Petrache		
03-05	<b>Study and realization of prosthetic dental models by additive technologies</b> E. Moraru, O. Dontu, D. Besnea, V. Constantin		
03-16	<b>Simulation of the emotional states using a biomimetic structure</b> M. Ionescu, I. Borcoși, N.G. Bîzdoacă		
03-12	<b>The control of an inverted pendulum system based on simple and adaptive fuzzy regulators</b> G. Gîlcă, M. Ionescu, N.G. Bîzdoacă, I. Diaconu		
04-16	<b>Mechanisms with Bevel Internal Gears Having a Small Difference in Numbers of Teeth</b> O Crivoi and I Doroftei		
04-17	<b>Aspects Concerning the Efficiency of the Planetary Mechanisms with Internal Gears Having a Small Difference in Numbers of Teeth</b> O. Crivoi, I. Doroftei		
04-18	<b>An Overview on the Applications of Mechanisms in Architecture. Part I: deployable Structures</b> I A Doroftei, C Bujoreanu and I Doroftei		
04-19	<b>An Overview on the Applications of Mechanisms in Architecture. Part II: Kinetic Facades</b> I A Doroftei, C Bujoreanu and I Doroftei		
05-20	<b>Failure surfaces morphology for specimens with stress concentrators using scanning electron microscopy</b> A David, A-M Comanici, B Istrate, C Munteanu and P D Barsanescu		

## ORGANIZING COMMITTEE

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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)

