



„Dunărea de Jos”  
University of Galați



Romanian  
Tribology  
Association (ART)

under the aegis of



ROMANIAN MINISTRY OF NATIONAL  
EDUCATION AND SCIENTIFIC RESEARCH

# **ROTRIB'16**

The 13<sup>th</sup> International Conference on Tribology

September 22-24, 2016 – Galați, ROMANIA

## ***PROGRAM***



# ROTRIB'16

The 13<sup>th</sup> International Conference on Tribology  
September 22-24, 2016 – Galați, ROMANIA

Conference ROTRIB'16 is the 13<sup>th</sup> in a series of international scientific events on TRIBOLOGY organised in Romania. The general objective of this conference is to contribute and demonstrate fundamentals, applications and experiences in the field of Tribology. The conference will provide an interdisciplinary forum for discussion, networking and initiating collaborations among specialists, about materials and Tribology and their application to product design and reliability. The exchange of ideas, theories, developments, innovations, improved methods and future trends is a key goal of this conference, by bringing together specialists from industry and academia, leading and young researchers, from various engineering and science fields.

Papers presented at ROTRIB 2016 are included in following topics:

*Friction and Wear*

*Contact Mechanics*

*Micro and nanotribology*

*Lubrication*

*Lubricants*

*Tribochemistry and tribocorrosion*

*Tribology of machine elements*

*Tribology in manufacturing processes*

*Surface metrology, surface engineering, coatings*

*Condition monitoring*

These topics will be discussed in sessions and two satellite symposia, VAREHD 2016 and DIPRE 2016. The official language of Conference ROTRIB'16 for presenting and writing the papers is English.

We received an excellent number of submissions from which, after a thorough peer reviewing process, 75 scientific contributions were accepted for presentation and publication. The authors of the accepted papers were invited to present their work in the Conference and we are pleased to welcome 110 participants from 9 countries.

The Conference program is enriched significantly by plenary presentations of renowned experts in their respective domains: Distinguished Professor. dr. Minel Braun (USA), Professor dr. Michel Fillon (France) and Emeritus Professor dr. Mircea D. Pascovici (Romania).

Conference ROTRIB'16 is organized by "Dunarea de Jos" University of Galati and Romanian Tribology Association, under the aegis of Ministry of National Education and Scientific Research of Romania. The Conference will be held in Galati, ROMANIA at the Natural Sciences Museum Complex, September 22 – 24, 2016.

After 38 years from the first Romanian Conference on Tribology, "Tribotehnica", Galati, 1978, we will organise ROTRIB'16 again in Galati, in the year of the 50th anniversary celebration of Tribology. Unfortunately, in this jubilee year for Tribology, Professor Peter Jost (the "father" of Tribology and President of International Tribology Council) and Professor Branko Ivkovic (former President of Serbian Tribology Association and Balkan Tribology Association) passed away.

The Conference is financially supported by "Dunarea de Jos" University of Galati, Romanian Tribology Association, Romanian Ministry of National Education and Scientific Research and our sponsors, which will participate in ROTRIB'16 with company profile presentations or product exhibition.

We would like to express our gratitude to the authors for submitting their work. We would like to thank to all those who have contributed, in one way or another, to the succes of the Conference. We are grateful to the Scientific Committee members, as well as to the external reviewers for their volunteer hard work of reading and discussing the submissions. We would like to express our thanks to the members of the Organizing Committee for their technical and non-technical support.

It was a great pleasure for us to organise this Conference and we hope that Conference ROTRIB'16 will stimulate future developments and innovations in the field of tribology.

We wish to all participants a successful conference and pleasant time in Galati, on the border of the Danube.

Organising Committee  
Galati, September, 2016

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Prof.Dr. Nicolae UNGUREANU

# TECHNICAL PROGRAM

|                                                     |
|-----------------------------------------------------|
| <b>DAY 1 - SEPTEMBER 22, 2016</b>                   |
| 8:00-9:30 PARTICIPANTS REGISTRATION, WELCOME COFFEE |

| SCHEDULE    |             | ROOM 1          |                                             |
|-------------|-------------|-----------------|---------------------------------------------|
| 09:30-12:30 | 9:30-10:00  | Plenary session | Opening Ceremony                            |
|             | 10:00-10:40 |                 | PLEN 1                                      |
|             | 10:40-11:20 |                 | PLEN 2                                      |
|             | 11:20-12:00 |                 | PLEN 3                                      |
|             | 12:00-12:30 |                 | PLEN 4 <a href="#">Company presentation</a> |
| 12:30-14:00 | LUNCH       |                 |                                             |

| SCHEDULE    |             | Topic     | Room 1      |  | Topic                                | Room 2      |
|-------------|-------------|-----------|-------------|--|--------------------------------------|-------------|
| 14:00-16:00 | 14:00-14:20 | <b>FW</b> | <b>FW 1</b> |  | <a href="#">Company presentation</a> |             |
|             | 14:20-14:40 |           | <b>FW 2</b> |  | <b>SE</b>                            | <b>SE 1</b> |
|             | 14:40-15:00 |           | <b>FW 3</b> |  |                                      | <b>SE 2</b> |
|             | 15:00-15:20 |           | <b>FW 4</b> |  |                                      | <b>SE 3</b> |
|             | 15:20-15:40 |           | <b>FW 5</b> |  |                                      | <b>SE 4</b> |
|             | 15:40-16:00 |           | <b>FW 6</b> |  |                                      | <b>SE 5</b> |

|             |              |
|-------------|--------------|
| 16:00-16.10 | COFFEE BREAK |
|-------------|--------------|

|             |                                                                       |    |       |      |        |
|-------------|-----------------------------------------------------------------------|----|-------|------|--------|
| 16.10-18.10 | 16.10-16:30                                                           | FW | FW 7  | ConM | ConM 1 |
|             | 16:30-16.50                                                           |    | FW 8  |      | ConM 2 |
|             | 16.50-17.10                                                           |    | FW 9  |      | ConM 3 |
|             | 17.10-17:30                                                           |    | FW 10 |      | ConM 4 |
|             | 17:30-17.50                                                           |    | FW 11 | M&N  | M&N 1  |
|             | 17.50-18.10                                                           |    | FW 12 | M&N  | M&N 2  |
| 19:00       | COFERENCE GALA DINNER<br>Restaurant Flow, near Hotel ”Faleza by Vega” |    |       |      |        |

**DAY 2 - SEPTEMBER 23, 2016**

| SCHEDULE    |                  | ROOM 1                    |         | ROOM 2                      |            | ROOM 3               |        |
|-------------|------------------|---------------------------|---------|-----------------------------|------------|----------------------|--------|
|             |                  | TOPI<br>C                 | PAPERS  | TOPIC                       | PAPE<br>RS | TOPIC                | PAPERS |
| 9:00-11:20  | 9:00-9:20        | FW                        | FW 13   | TME                         | TME 1      | Ln                   | Ln 1   |
|             | 9:20-9:40        |                           | FW 14   |                             |            |                      | Ln 2   |
|             | 9:40-10:00       |                           | FW 15   |                             |            |                      | Ln 3   |
|             | 10:00-10:20      |                           | FW 16   |                             |            |                      | Ln 4   |
|             | 10:20-10:40      |                           | FW 17   |                             |            |                      | Ln 5   |
|             | 10:40-11:00      |                           | FW 18   |                             |            |                      | Ln 6   |
|             | 11:00-11:20      | Company presentation      |         |                             |            |                      | TME 6  |
| 11:20-11:35 | COFFEE BREAK     |                           |         |                             |            |                      |        |
| 11:35-13:00 | 11:35-12:00      | Plenary session<br>ROOM 1 |         | PLEN 5                      |            |                      |        |
|             | 12:00-12:15      |                           |         | PLEN 6 Company presentation |            |                      |        |
|             | 12:15-12:30      |                           |         | PLEN 7 Company presentation |            |                      |        |
|             | 12:30-13:00      |                           |         | PLEN 8 Company presentation |            |                      |        |
| 13:00-14:20 | LUNCH            |                           |         |                             |            |                      |        |
| 14:20-16:20 | 14:20-14:40      | CMech                     | CMech 1 | TME                         | TME 7      | Company presentation |        |
|             | 14:40-15:00      |                           | CMech 2 |                             | TME 8      | Company presentation |        |
|             | 15:00-15:20      |                           | CMech 3 |                             | TME 9      | Ln                   | Ln 7   |
|             | 15:20-15:40      |                           | CMech 4 | TMP                         | TMP 1      |                      | Ln 8   |
|             | 15:40-16:00      |                           | CMech 5 |                             | TMP 2      | Lts                  | Lts 1  |
|             | 16:00-16:20      |                           |         | Lts 2                       |            |                      |        |
| 16:20-16:35 | COFFEE BREAK     |                           |         |                             |            |                      |        |
| 16:35-18:15 | 16:35-16:55      | FW                        | FW 19   | SE                          | SE 6       | TT                   | TT 1   |
|             | 16:55-17:15      |                           | FW 20   |                             | SE 7       |                      | TT 2   |
|             | 17:15-17:35      |                           | FW 21   |                             | SE 8       |                      | TT 3   |
|             | 17:35-17:55      |                           | FW 22   |                             | SE 9       |                      | TT 4   |
|             | 17:55-18:15      |                           | FW 23   |                             | SE 10      |                      |        |
| 18:15-18:30 | Closing Ceremony |                           |         |                             |            |                      |        |

**DAY 3 – SEPTEMBER 24, 2016**

CONFERENCE TRIP, Danube Delta

|                                   |                                           |                                                                                                                                                                                          |
|-----------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SEPTEMBER 22, 2016 – DAY 1</b> |                                           | <b>09:30-10:00</b>                                                                                                                                                                       |
| 08:00-09:30                       | Participants Registration, welcome coffee |                                                                                                                                                                                          |
| 9:30-10:00                        | Opening Addresses                         |                                                                                                                                                                                          |
| <b>PLENARY SESSION</b>            |                                           | <b>10:00-12:30</b>                                                                                                                                                                       |
|                                   |                                           | <b>ROOM 1</b>                                                                                                                                                                            |
| 10:00-10:40                       | PLEN 1                                    | Distinguished Professor. dr. <b>Minel Braun</b> (USA): Two-way coupled Reynolds, Rayleigh-Plesset-Scriven and energy equations for fully transient cavitation and heat transfer modeling |
| 10:40-11:20                       | PLEN 2                                    | Professor dr. <b>Michel Fillon</b> (France): Influence of thermal effects and solid deformations on the performance of hydrodynamic tilting-pad bearings,                                |
| 11:20-12:00                       | PLEN 3                                    | Emeritus Professor dr. <b>Mircea D. Pascovici</b> (Romania): Tribology worldwide and in our country: yesterday, today and tomorrow                                                       |
| 12:00-12:30                       | PLEN 4                                    | Company presentation: <b>Etansari Grafex SRL</b> (Romania)                                                                                                                               |
| 12:30-14:00                       | <b>LUNCH</b>                              |                                                                                                                                                                                          |

| SEPTEMBER 22, 2016 – DAY 1                                                                            |                        | 14:00-16:00                                                                                                                                                                                                                                                                                                                          | ROOM 1 |
|-------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| FRICTION AND WEAR (FW)                                                                                |                        |                                                                                                                                                                                                                                                                                                                                      |        |
| Chairman: Prof.dr. Sergey Fedorov (Russia)<br>Co-chairman: Assoc. prof.dr. Emilia Assenova (Bulgaria) |                        |                                                                                                                                                                                                                                                                                                                                      |        |
| 14:00-14:20                                                                                           | FW 1                   | Structural-energetic regularities of tribocontact evolution,<br><i>S. Fedorov,</i><br><i>RUSSIA</i>                                                                                                                                                                                                                                  |        |
| 14:20-14:40                                                                                           | FW 2                   | Abrasive wear of high velocity oxygen fuel (HVOF) superalloy coatings under vibration load,<br><i>M. Kandeve, B. Ivanova, D. Karastoyanov, T. Grozdanova and E. Assenova,</i><br><i>BULGARIA</i>                                                                                                                                     |        |
| 14:40-15:00                                                                                           | FW 3                   | Experimental research on energy losses through friction in order to increase lifetime of hydraulic cylinders,<br><i>C Cristescu, R Radoi, C Dumitrescu and L Dumitrescu</i><br><i>ROMANIA</i>                                                                                                                                        |        |
| 15:00-15:20                                                                                           | FW 4                   | Coating multilayer material with improved tribological properties obtained by magnetron sputtering – technological aspects,<br><i>A. O. Mateescu and G. Mateescu</i><br><i>ROMANIA</i>                                                                                                                                               |        |
| 15:20-15:40                                                                                           | FW 5                   | Study on friction behaviour of brake shoe materials for mining hoist,<br><i>M. Ungureanu, N. S. Ungureanu and I Craciun,</i><br><i>ROMANIA</i>                                                                                                                                                                                       |        |
| 15:40-16:00                                                                                           | FW 6                   | A comparative study on tribological behavior between metal and polymeric composites used to repair bronze made parts in dry reciprocating sliding tests,<br><i>Virgil Iliuta, Minodora Ripa, Juliana Javorova, Gabriel Andrei,</i><br><i>ROMANIA, BULGARIA</i>                                                                       |        |
| 16:00-16:10                                                                                           | Coffee break           |                                                                                                                                                                                                                                                                                                                                      |        |
| SEPTEMBER 22, 2016 – DAY 1                                                                            |                        | 16:10-18:10                                                                                                                                                                                                                                                                                                                          | ROOM 1 |
| FRICTION AND WEAR (FW)                                                                                |                        |                                                                                                                                                                                                                                                                                                                                      |        |
| Chairman: Prof.dr. Traian Cicone (Romania)<br>Co-chairman: Prof.dr. Lorena Deleanu (Romania)          |                        |                                                                                                                                                                                                                                                                                                                                      |        |
| 16.10-16:30                                                                                           | FW 7                   | The adhesion and hysteresis effect in friction skin with artificial materials,<br><i>K. A. Subhi, A. Tudor, E. K. Hussein and H. S. Wahad</i><br><i>IRAQ, ROMANIA</i>                                                                                                                                                                |        |
| 16:30-16.50                                                                                           | FW 8                   | The effect of friction in coulombian damper,<br><i>H. S. Wahad, A. Tudor, M. Vlase, N. Cerbu and K. A. Subhi</i><br><i>IRAQ, ROMANIA</i>                                                                                                                                                                                             |        |
| 16.50-17.10                                                                                           | FW 9                   | Tribological properties of the disc brake friction couple materials in the range of small and very small speeds,<br><i>N. A. Stoica, A. M. Petrescu, A. Tudor and A. Predescu</i><br><i>ROMANIA</i>                                                                                                                                  |        |
| 17.10-17:30                                                                                           | FW 10                  | Tribological characteristics of the copper layer deposit on the electronic circuit boards and of the soldering alloy SAC 307 deposit on the copper-PCB assembly,<br><i>A M Petrescu, A Tudor, G Chi iu, N A Stoica and U Cihak Bayr</i><br>Department of Machine Elements and Tribology, University “Politehnica” Bucharest, Romania |        |
| 17:30-17.50                                                                                           | FW 11                  | The effects of mechanical properties and sintering duration on the wear behavior of silicon nitride<br><i>A Brusilová, P Švec, Z Gábrišová and M Pokusová</i><br><i>SLOVAKIA</i>                                                                                                                                                     |        |
| 17.50-18.10                                                                                           | FW 12                  | Aspects of the tribological behavior of powders recycled from rapid steel treated sub-zero,<br><i>S. Radu and M. Ciobanu</i><br><i>ROMANIA</i>                                                                                                                                                                                       |        |
| 19:00                                                                                                 | CONFERENCE GALA DINNER |                                                                                                                                                                                                                                                                                                                                      |        |

|                                                                                                     |                                                         |                                                                                                                                                                                                                                                                          |               |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>SEPTEMBER 22, 2016 – DAY 1</b>                                                                   |                                                         | <b>14:00-16:00</b>                                                                                                                                                                                                                                                       | <b>ROOM 2</b> |
| <b>SURFACE METROLOGY, SURFACE ENGINEERING AND COATINGS (SE)</b>                                     |                                                         |                                                                                                                                                                                                                                                                          |               |
| Chairman: Prof.dr. Gencaga Purcek (Turkey)<br>Co-chairman: Prof.dr. Minodora Ripa (Romania)         |                                                         |                                                                                                                                                                                                                                                                          |               |
| 14:00-14:20                                                                                         | Company presentation: <b>MECRO SYSTEM SRL (Romania)</b> |                                                                                                                                                                                                                                                                          |               |
| 14:20-14:40                                                                                         | SE 1                                                    | Determination of residual stresses and natural frequencies of roll-tensioned disc by a dynamic simulation of the rolling process,<br><i>G. Skordaris, K.-D. Bouzakis and D. Tasoulas,</i><br><b>GREECE</b>                                                               |               |
| 14:40-15:00                                                                                         | SE 2                                                    | Increasing in the wear resistance of injection molds made of 1.2343 steel using Ti/TiN/TiCN/nc-TiCN:a-C/nc-TiC:a-C/a-C nanocomposite coating,<br><i>V. Rupetsov, G. Mishev, S. Dishliev, V. Kopanov, V. Chitanov, L. Kolaklieva and C. Pashinski,</i><br><b>BULGARIA</b> |               |
| 15:00-15:20                                                                                         | SE 3                                                    | A method for determining the thickness of tribological performing thin layers formed by selective transfer,<br><i>F. Ilie, G. Chisuiu, G. Ipate,</i><br><b>ROMANIA</b>                                                                                                   |               |
| 15:20-15:40                                                                                         | SE 4                                                    | Wear behaviour of plasma and thermal oxidized Ti-15Mo and Ti-6Al-4V,<br><i>I. Hacisalioglu, F. Yildiz, A. Alsaran and G. Purcek,</i><br><b>TURKEY</b>                                                                                                                    |               |
| 15:40-16:00                                                                                         | SE 5                                                    | Improvement the wear behavior of low carbon steels by friction stir processing,<br><i>D. M. Sekban, S. M. Aktarer, H. Yanar, A. Alsaran and G. Purcek,</i><br><b>TURKEY</b>                                                                                              |               |
| 16:00-16:10                                                                                         | <b>Coffee break</b>                                     |                                                                                                                                                                                                                                                                          |               |
| <b>SEPTEMBER 22, 2016 – DAY 1</b>                                                                   |                                                         | <b>16:10-18:10</b>                                                                                                                                                                                                                                                       | <b>ROOM 2</b> |
| <b>CONDITION MONITORING (ConM) and MICRO AND NANOTRIBOLOGY (M&amp;N)</b>                            |                                                         |                                                                                                                                                                                                                                                                          |               |
| Chairman: Prof. Gabriel Andrei (Romania)<br>Co-chairman: Assoc. prof.dr. Emilia Assenova (Bulgaria) |                                                         |                                                                                                                                                                                                                                                                          |               |
| 16.10-16:30                                                                                         | ConM 1                                                  | Conformity assessment of the measurement accuracy in testing laboratories using a software application,<br><i>A. Dini</i><br><b>ROMANIA</b>                                                                                                                              |               |
| 16:30-16:50                                                                                         | ConM 2                                                  | Optimization of continuous triboelectrification process for polymeric materials in dry contact,<br><i>Y. E. Prawatya, M. B.Neagoe, T. Zeghloul and L. Dascalescu,</i><br><b>FRANCE</b>                                                                                   |               |
| 16.50-17.10                                                                                         | ConM 3                                                  | Functioning condition monitoring of industrial equipment,<br><i>N. S. Ungureanu, A. Petrovan, M. Ungureanu and M. Alexandrescu</i><br><b>ROMANIA</b>                                                                                                                     |               |
| 17.10-17:30                                                                                         | ConM 4                                                  | Some considerations on noise monitoring for air handling equipments,<br><i>C. Bujoreanu and M. Benchea</i><br><b>ROMANIA</b>                                                                                                                                             |               |
| 17:30-17.50                                                                                         | M&N 1                                                   | Investigation on the contact behaviour of MEMS micromembrane with serpentine hinges,<br><i>M. Pustan, C. Birleanu, C. Dudescu and F. Rusu,</i><br><b>ROMANIA</b>                                                                                                         |               |
| 17.50-18.10                                                                                         | M&N 2                                                   | Analysis of the bending stiffness and adhesion effect in RF-MEMS structures,<br><i>C. Birleanu, M. Pustan, C. Dudescu, V. Merie and I. Pintea,</i><br><b>ROMANIA</b>                                                                                                     |               |
| 19:00                                                                                               | <b>CONFERENCE GALA DINNER</b>                           |                                                                                                                                                                                                                                                                          |               |



| SEPTEMBER 23, 2016 – DAY 2                                                                            |                                                                                            | 09:00-11:20                                                                                                                                                                                                  | ROOM 1 |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| FRICTION AND WEAR (FW)                                                                                |                                                                                            |                                                                                                                                                                                                              |        |
| Chairman: Prof.dr. Nicolae Napoleon Antonescu (Romania)<br>Co-chairman: Prof.dr. Yusuf Şahin (Turkey) |                                                                                            |                                                                                                                                                                                                              |        |
| 9:00-9:20                                                                                             | FW 13                                                                                      | The dynamic behavior of sliding tribosystems in unstable operating conditions,<br><i>A. Postaru, Ghe. Postaru, V. Ceban, C. Spânu and P. Stoicev,</i><br><i>REP. MOLDOVA, ROMANIA</i>                        |        |
| 9:20-9:40                                                                                             | FW 14                                                                                      | Micro-scratching tests of a rolled aluminium alloy AA2024-T351 thick plate using a diamond micro-blade,<br><i>E. Pirva, A. Tudor, A. Gavrus, G. Chisui, N. Stoica and A. Predescu,</i><br><i>ROMANIA</i>     |        |
| 9:40-10:00                                                                                            | FW 15                                                                                      | Tribological behaviour of unidirectional carbon fibre-reinforced epoxy composites,<br><i>Y. ahin and P. DeBaets,</i><br><i>TURKEY</i>                                                                        |        |
| 10:00-10:20                                                                                           | FW 16                                                                                      | Analysis of progressive cavity pumps specific wear processes using Finnie models,<br><i>M Popescu, A I Popovici, F N Petrescu and N N Antonescu,</i><br><i>ROMANIA</i>                                       |        |
| 10:20-14:00                                                                                           | FW 17                                                                                      | Analysis of progressive cavity pumps specific wear processes using Bitter and Hutchings models<br><i>A I Popovici, M Popescu, N N Antonescu and F N Petrescu,</i><br><i>ROMANIA</i>                          |        |
| 10:40-11:00                                                                                           | FW 18                                                                                      | The effect of transport velocity upon spin torque,<br><i>S. Alaci, F. C .Ciornei, D. Amarandei, L. Irimescu, I. C. Romanu and M. A. Rotar</i><br><i>ROMANIA</i>                                              |        |
| 11:00-11:20                                                                                           | <a href="#">Company presentation: TTZH Tribologie &amp; Hochtechnologie GmbH (Germany)</a> |                                                                                                                                                                                                              |        |
| 11.20-11:35                                                                                           | Coffee break                                                                               |                                                                                                                                                                                                              |        |
| SEPTEMBER 23, 2016 – DAY 2                                                                            |                                                                                            | 11:35-13:00                                                                                                                                                                                                  | ROOM 1 |
| PLENARY SESSION                                                                                       |                                                                                            |                                                                                                                                                                                                              |        |
| Chairman: Prof. Traian Cicone (Romania)                                                               |                                                                                            |                                                                                                                                                                                                              |        |
| 11:35-12:00                                                                                           | PLEN 5                                                                                     | Emeritus Prof.dr. Jean Frene (France): Tribology: from antiquity until today                                                                                                                                 |        |
| 12:00-12:15                                                                                           | PLEN 6                                                                                     | <a href="#">Company presentation: Techno Volt SRL (Romania)</a>                                                                                                                                              |        |
| 12:15-12:30                                                                                           | PLEN 7                                                                                     | <a href="#">Company presentation: Nanomechanics, Inc. (SUA)</a>                                                                                                                                              |        |
| 12:30-13:00                                                                                           | PLEN 8                                                                                     | <a href="#">Company presentation: GAMAX Kft (Hungary)</a>                                                                                                                                                    |        |
| 13:00-14:20                                                                                           | LUNCH                                                                                      |                                                                                                                                                                                                              |        |
| SEPTEMBER 23, 2016 – DAY 2                                                                            |                                                                                            | 14:20-16:20                                                                                                                                                                                                  | ROOM 1 |
| CONTACT MECHANICS (CMech)                                                                             |                                                                                            |                                                                                                                                                                                                              |        |
| Chairman: Prof.dr. Spiridon Creţu (Romania)<br>Co-chairman: Prof.dr. Sevasti Mitsi (Greece)           |                                                                                            |                                                                                                                                                                                                              |        |
| 14:20-14:40                                                                                           | CMech 1                                                                                    | Cylindrical roller bearings with profiled contacting surfaces,<br><i>S. S. Creţu,</i><br><i>ROMANIA</i>                                                                                                      |        |
| 14:40-15:00                                                                                           | CMech 2                                                                                    | Triboelectrical charge generated by frictional sliding contact between polymeric materials,<br><i>T. Zeghloul, M. B Neagoe, Y. E. Prawatya and L. Dascalescu,</i><br><i>FRANCE</i>                           |        |
| 15:00-15:20                                                                                           | CMech 3                                                                                    | Influence of surface roughness on the tribo-electric process for a sliding contact between polymeric plate materials,<br><i>M. B. Neagoe, Y. E. Prawatya, T. Zeghloul and L. Dascalescu</i><br><i>FRANCE</i> |        |
| 15:20-15:40                                                                                           | CMech 4                                                                                    | Influence of tooth profile on the noncircular gear tooth contact,<br><i>A. Cristescu, L. Andrei and B. Cristescu,</i><br><i>ROMANIA</i>                                                                      |        |
| 15:40-16:00                                                                                           | CMech 5                                                                                    | Dynamic analysis of six-bar mechanical press for deep drawing,<br><i>S. Mitsi, I. Tsiafis and K. D. Bouzakis</i><br><i>GREECE</i>                                                                            |        |
| 16:20-16:35                                                                                           | Coffee break                                                                               |                                                                                                                                                                                                              |        |



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| <b>SEPTEMBER 23, 2016 – DAY 2</b>                                                                    |       | <b>16:35-18:15</b>                                                                                                                                                               | <b>ROOM 1</b> |
| <b>FRICTION AND WEAR (FW)</b>                                                                        |       |                                                                                                                                                                                  |               |
| Chairman: Prof.dr. Andrei Tudor (Romania)<br>Co-chairman: Assoc. prof.dr. Aleksandar Vencel (Serbia) |       |                                                                                                                                                                                  |               |
| 16:35-16:55                                                                                          | FW 19 | Experimental studies regarding wear processes through dry friction of the superficial layer for an unconventional treated steel,<br><i>C. P. Papadatu,</i><br>ROMANIA            |               |
| 16:55-17:15                                                                                          | FW 20 | A study regarding friction behaviour of lysine and isoleucine modified epoxy matrix,<br><i>I. B. Ian, R. Bosoanc , A. C p in , I. Graur, V. Bria and C. Ungureanu</i><br>ROMANIA |               |
| 17:15-17:35                                                                                          | FW 21 | Comparative study regarding friction coefficient for three epoxy resins,<br><i>Georgel Mihiu, Ionu Mihalache, Iulia Graur, Claudia Ungureanu and Vasile Bria</i><br>ROMANIA      |               |
| 17:35-17:55                                                                                          | FW 22 | A study of friction wear behaviour of nano-ferite modified epoxy resins,<br><i>C. Muntenita, C. Eni, I. Graur, C. Ungureanu and M. Bodor,</i><br>ROMANIA                         |               |
| 17:55-18:15                                                                                          | FW 23 | Epoxy resin wear estimation for several dry erosion agents,<br><i>Igor ROMAN, Sorin CIORTAN, Iulian BIRSAN,</i><br>ROMANIA                                                       |               |

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| 18:15-18:30 | <b>Closing Ceremony</b> |
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| <b>SEPTEMBER 23, 2016 – DAY 2</b>                                                                      |       | <b>09:00-11:20</b>                                                                                                                                                                                               | <b>ROOM 2</b> |
| <b>TRIBOLOGY OF MACHINE ELEMENTS (TME)</b>                                                             |       |                                                                                                                                                                                                                  |               |
| Chairman: Prof.dr. Mircea Pascovici (Romania)<br>Co-chairman: Prof.dr. Razvan George Ripeanu (Romania) |       |                                                                                                                                                                                                                  |               |
| 9:00-9:20                                                                                              | TME 1 | Experimental analysis of axial and radial stress distribution in soft materials used for petrochemical valve stem sealing package,<br><i>R. G. Ripeanu, A. Ispas and D. Ispas</i><br>ROMANIA                     |               |
| 9:20-9:40                                                                                              | TME 2 | Geometric modelling of the contact point between the bushing and sprocket in chain drives,<br><i>R. Saulescu, R. Velicu and M. Lates,</i><br>ROMANIA                                                             |               |
| 9:40-10:00                                                                                             | TME 3 | Experimental study on guide friction contribution in global power loss of a tooth chain transmission<br><i>R. Velicu, R. Papuc, C. C. Gavrilă and S. Popa</i><br>ROMANIA                                         |               |
| 10:00-10:20                                                                                            | TME 4 | Influence of the cage on the friction torque in low loaded thrust ball bearing operating in lubricated conditions,<br><i>D. Olaru, M. R. Balan, A. Tufescu and V. Carlescu</i><br>ROMANIA                        |               |
| 10:20-10:40                                                                                            | TME 5 | Studies on Tribological Behavior of Aluminum Nitride-Coated Steel,<br><i>G. C. Ionescu, I. Nae, R. G. Ripeanu, A. Dină and G. Stan</i><br>ROMANIA                                                                |               |
| 10:40-11:00                                                                                            | TME 6 | Correlations of the instantaneous carrying force and pressure distribution in the case of the narrow sliding radial bearing under hard shocks,<br><i>I. M. Alexandrescu, R. Coteiu and D. Darab ,</i><br>ROMANIA |               |

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| 11:20-11:35 | <b>Coffee break</b> |
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| <b>SEPTEMBER 23, 2016 – DAY 2</b>   |  | <b>11:35-13:00</b> | <b>ROOM 1</b> |
| <b>PLENARY SESSION (see page 7)</b> |  |                    |               |

|             |              |
|-------------|--------------|
| 13:00-14:20 | <b>LUNCH</b> |
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| SEPTEMBER 23, 2016 – DAY 2                                                                                             |                  | 14:20-16:20                                                                                                                                                                           | ROOM 2 |
|------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| TRIBOLOGY OF MACHINE ELEMENTS (TME) TRIBOLOGY OF MACHINE ELEMENTS (TME) & TRIBOLOGY IN MANUFACTURING PROCESSES (TMP)   |                  |                                                                                                                                                                                       |        |
| Chairman: Assoc. prof.dr. Aleksandar Vencel (Serbia)<br>Co-chairman: Assoc. prof.dr. Adrian Catalin Drumeanu (Romania) |                  |                                                                                                                                                                                       |        |
| 14:20-14:40                                                                                                            | TME 7            | Fault tree analysis of most common rolling bearing tribological failures,<br><i>A. Vencel, V. Gaši and B. Stojanovi</i> ,<br>SERBIA                                                   |        |
| 14:40-15:00                                                                                                            | TME 8            | Penetration tests to study the mechanical tribological properties of chisel type knife,<br><i>L. Vl du oi, G. Chi iu, T. Andrei, A. Predescu, C. Muraru and V. Vl du</i> ,<br>ROMANIA |        |
| 15:00-15:20                                                                                                            | TME 9            | Theoretical and experimental analysis of the lubricating system of a high speed multiplier,<br><i>V. G. Marian, R. F. Miric and T. Prisecaru</i> ,<br>ROMANIA                         |        |
| 15:20-15:40                                                                                                            | TMP 1            | Tribo-thermal fatigue of the steel used for the forging die construction,<br><i>A. C. Drumeanu</i> ,<br>ROMANIA                                                                       |        |
| 15:40-16:00                                                                                                            | TMP 2            | Numerical investigation of the effect of friction conditions to increase die life,<br><i>M. O. Mutlu, C. G. Guleryuz and Z. Parlar</i> ,<br>TURKEY                                    |        |
| 16:20-16:35                                                                                                            | Coffee break     |                                                                                                                                                                                       |        |
| SEPTEMBER 23, 2016 – DAY 2                                                                                             |                  | 16:35-18:15                                                                                                                                                                           | ROOM 2 |
| SURFACE METROLOGY, SURFACE ENGINEERING AND COATINGS (SE)                                                               |                  |                                                                                                                                                                                       |        |
| Chairman: Prof.dr. Nikolaos Vaxevanidis (Greece)<br>Co-chairman: Prof.dr. Mihaela Buciumeanu (Romania)                 |                  |                                                                                                                                                                                       |        |
| 16:35-16:55                                                                                                            | SE 6             | Effect of friction stir processing on tribological properties of Al-Si alloys,<br><i>S. M. Aktarer, D. M. Sekban, H. Yanar and G. Purçek</i> ,<br>TURKEY                              |        |
| 16:55-17:15                                                                                                            | SE 7             | Study on surface finish of AISI 2080 steel based on the Taguchi method,<br><i>S. Yalcinkaya and Y. ahin</i> ,<br>TURKEY                                                               |        |
| 17:15-17:35                                                                                                            | SE 8             | Wear resistance of WC/Co HVOF-coatings and galvanic Cr coatings modified by diamond nanoparticles,<br><i>M. Kandeve, T. Grozdanova, D. Karastoyanov and E. Assenova</i> ,<br>BULGARIA |        |
| 17:35-17:55                                                                                                            | SE 9             | HVOF sprayed WC-CoCr coatings on aluminum: tensile and tribological properties,<br><i>A. Koutsomichalis, M. Vardavoulis and N. Vaxevanidis</i> ,<br>GREECE                            |        |
| 17:55-18:15                                                                                                            | SE 10            | Evaluating lubricating capacity of vegetal oils using Abbott-Firestone curve,<br><i>C. Georgescu, G. C. Cristea, C. Dima and L. Deleanu</i> ,<br>ROMANIA                              |        |
| 18:15-18:30                                                                                                            | Closing Ceremony |                                                                                                                                                                                       |        |
| SEPTEMBER 23, 2016 – DAY 2                                                                                             |                  | 09:00-11:20                                                                                                                                                                           | ROOM 3 |
| LUBRICATION (Ln)                                                                                                       |                  |                                                                                                                                                                                       |        |
| Chairman: Prof.dr. Michel Fillon (France)<br>Co-chairman: Prof.dr. Benyebka Bou-Saïd (France)                          |                  |                                                                                                                                                                                       |        |
| 9:00-9:20                                                                                                              | Ln 1             | The behaviour of lubricated EHD contacts subjected to vibrations,<br><i>X. Zhang and R. P. Glovnea</i> ,<br>UNITED KINGDOM                                                            |        |
| 9:20-9:40                                                                                                              | Ln 2             | Performance evolution of fully and partially textured hydrodynamic journal bearings lubricated with two lubricants,<br><i>N. Tala-ighil and M. Fillon</i> ,<br>FRANCE                 |        |
| 9:40-10:00                                                                                                             | Ln 3             | Saturated porous layers squeezed between parallel disks in enclosed cells,<br><i>I. C. Melciu, T. Cicone and M. D. Pascovici</i> ,<br>ROMANIA                                         |        |
| 10:00-10:20                                                                                                            | Ln 4             | Down to the roughness scale assessment of piston-ring/liner contacts,<br><i>H. M. Checo, A. Jaramillo, R. F. Ausas, M. Jai and G. C. Buscaglia</i> ,<br>FRANCE                        |        |

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|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 10:20-14:00                                                                                                 | Ln 5                                             | The effect of lubricant supply and frequency upon the behaviour of EHD films subjected to vibrations,<br><i>R. Glovnea, X. Zhang and J. Sugimura,</i><br><i>UNITED KINGDOM</i>                                                                 |        |
| 10:40-11:00                                                                                                 | Ln 6                                             | Tribological study of an aerodynamic thrust bearing in the supersonic regime,<br><i>F. Dupuy, B. Bou-Saïd and M. Garcia,</i><br><i>FRANCE</i>                                                                                                  |        |
| 11:00-11:20                                                                                                 | Ln 7                                             | A finite element solution of the Reynolds equation of lubrication with film discontinuities: application to helical groove seals,<br><i>M. Jarray, D. Souchet, Y. Henry and A. Fatu</i><br><i>FRANCE</i>                                       |        |
| 11.20-11:35                                                                                                 | Coffee break                                     |                                                                                                                                                                                                                                                |        |
| SEPTEMBER 23, 2016 – DAY 2                                                                                  |                                                  | 11:35-13:00                                                                                                                                                                                                                                    | ROOM 1 |
| PLENARY SESSION (see page 7)                                                                                |                                                  |                                                                                                                                                                                                                                                |        |
| 13:00-14:20                                                                                                 | LUNCH                                            |                                                                                                                                                                                                                                                |        |
| SEPTEMBER 23, 2016 – DAY 2                                                                                  |                                                  | 14:20-16:20                                                                                                                                                                                                                                    | ROOM 3 |
| LUBRICATION (Ln) and LUBRICANTS (Lts)                                                                       |                                                  |                                                                                                                                                                                                                                                |        |
| Chairman: Prof.dr. Alexandru Radulescu (Romania)<br>Co-chairman: Assoc.prof.dr. Juliana Javorova (Bulgaria) |                                                  |                                                                                                                                                                                                                                                |        |
| 14:20-14:40                                                                                                 | Company presentation: TOTAL ROMANIA SA (Romania) |                                                                                                                                                                                                                                                |        |
| 14:40-15:00                                                                                                 | Company presentation: SARTOROM (Romania)         |                                                                                                                                                                                                                                                |        |
| 15:00-15:20                                                                                                 | Ln 8                                             | Analysis of squeeze film process between non-parallel circular surfaces,<br><i>A.V. Radulescu and I. Radulescu,</i><br><i>ROMANIA</i>                                                                                                          |        |
| 15:20-15:40                                                                                                 | Ln 9                                             | Effects of fluid inertia and bearing flexibility on the performance of finite length journal bearing,<br><i>J. Javorova and V. Alexandrov,</i><br><i>BULGARIA</i>                                                                              |        |
| 15:40-16:00                                                                                                 | Lts 1                                            | Method and device for measurement of dynamic viscosity,<br><i>F. C. Ciornei, S. Alaci, D. Amarandei, L. Irimescu, I. C. Romanu and L. I. Acsinte,</i><br><i>ROMANIA</i>                                                                        |        |
| 16:00-16:20                                                                                                 | Lts 2                                            | Some considerations concerning four-ball machine testing of the polyacrylamide solutions,<br><i>A. C. Drumeanu,</i><br><i>ROMANIA</i>                                                                                                          |        |
| 16:20-16:35                                                                                                 | Coffee break                                     |                                                                                                                                                                                                                                                |        |
| SEPTEMBER 23, 2016 – DAY 2                                                                                  |                                                  | 16:35-18:15                                                                                                                                                                                                                                    | ROOM 3 |
| TRIBOCHEMISTRY AND TRIBOCORROSION (TT)                                                                      |                                                  |                                                                                                                                                                                                                                                |        |
| Chairman: Prof.dr. J.-P. Celis (Belgium)<br>Co-chairman: Prof.dr. L. Benea (Romania)                        |                                                  |                                                                                                                                                                                                                                                |        |
| 16:35-16:55                                                                                                 | TT 1                                             | Design and technology parameters influence on durability for heat exchangers tube to tubesheet joints,<br><i>R. G. Ripeanu</i><br><i>ROMANIA</i>                                                                                               |        |
| 16:55-17:15                                                                                                 | TT 2                                             | Bio and nanomaterials in tribocorrosion systems,<br><i>L. Benea</i><br><i>ROMANIA</i>                                                                                                                                                          |        |
| 17:15-17:35                                                                                                 | TT 3                                             | Porous TiO2-ZrO2 thin film formed by electrochemical technique to improve the biocompatibility of titanium alloy in physiological environment,<br><i>L Benea, E D n il , P Ponthiaux</i><br><i>ROMANIA, FRANCE</i>                             |        |
| 17:35-17:55                                                                                                 | TT 4                                             | Improving tribocorrosion behaviour by electro-codeposition of TiC nano-dispersed particles with nickel as hybrid layers for energy applications,<br><i>L. Benea, E. D n il , P. Ponthiaux, J.-P. Celis,</i><br><i>ROMANIA, FRANCE, BELGIUM</i> |        |
| 18:15-18:30                                                                                                 | Closing Ceremony                                 |                                                                                                                                                                                                                                                |        |

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