

**CONFERENCE REPORT: XXVIII-th ANNUAL SYMPOSIUM OF  
THE INSTITUTE OF SOLID MECHANICS SISOM 2017 AND  
SYMPOSIUM OF ACOUSTICS, BUCHAREST, MAY 18-19, 2017**

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The XXVIII-th Annual Symposium of the Institute of Solid Mechanics SISOM 2017 and Symposium of Acoustics was held in Bucharest, from 18 to 19 May 2017. The general website of this symposium is:

[http://www.imsar.ro/html/\\_sisom.html](http://www.imsar.ro/html/_sisom.html)

This XXVIII-th Annual Symposium of the Institute of Solid Mechanics SISOM 2017 and Symposium of Acoustics was organized by the Institute of Solid Mechanics of the Romanian Academy (IMS-AR, [www.imsar.ro](http://www.imsar.ro)), in cooperation with the Commission of Acoustics of the Romanian Academy and with the Academy of Technical Sciences of Romania ([www.astr.ro](http://www.astr.ro)).

The organizers of SISOM 2017 gratefully acknowledge the following sponsors: the National Authority for Scientific Research (ANCS), Mediamira Publishing House from Cluj-Napoca, the General Association of Romanian Engineers (AGIR) and VTC SRL company (Engineering and Industrial Technologies, Engineering & Dealer – ABB).

The Scientific Committee of SISOM 2017 gathers local and international chairmen, as follows:

- Dr. Tudor SIRETEANU – Corresponding Member of the Romanian Academy, Director of IMS-AR, Bucharest;
- Acad. Dorel BANABIC – Fellow of the Romanian Academy, President of the Section of Technical Sciences of the Romanian Academy;
- Prof. Radu MUNTEANU – Technical University of Cluj-Napoca;
- Dr. Luige VLĂDĂREANU – IMS-AR, Bucharest;
- Prof. Hongnian YU, Bournemouth University, UK;
- Prof. Florentin Smarandache, University of New Mexico, USA.

The Scientific Committee is completed by the following vice-chairmen:

- Dr. Veturia CHIROIU – Honorary Member of the Academy of Technical Sciences of Romania (ASTR), IMS-AR, Bucharest;
- Prof. Ioan MAGHETI – University Politehnica of Bucharest (UPB);
- Prof. Iulian TABARA – UPB;
- Prof. Doina FRUNZĂVERDE – University “Eftimie Murgu” of Reșița;

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- Prof. Adrian OLARU – UPB.

The full Scientific Committee can be found on the symposium website:

[http://www.imsar.ro/html/\\_sisom.html](http://www.imsar.ro/html/_sisom.html)

The Organizing Committee of XXVIII-th Annual Symposium of the Institute of Solid Mechanics SISOM 2017 and Symposium of Acoustics comprises the following staff from the Institute of Solid Mechanics of the Romanian Academy: Dr. Marcel MIGDALOVICI (organising committee chief), Prof. Nicolae POP, Dr. Cristian RUGINĂ, Dr. Victor VLĂDĂREANU, Dr. Octavian MELINTE, Dr. Alexandru GAL, Eng. Gabriela VLĂDEANU.

The sessions of the XXVIII-th Annual Symposium of the Institute of Solid Mechanics SISOM 2017 and Symposium of Acoustics were organized as follows:

- Opening/plenary session;
- Session 1: Mechanical Modeling and Experiment, Wear investigations of materials, Biomechanics;
- Session 2: Robotics;
- Session 3: Technical Acoustics and Vibration, Speech Technology.

The opening/plenary session took place on May 18<sup>th</sup>, 2017, in the “Luxemburg” room of conferences of Romanian Academy Building, Calea 13 Septembrie, no. 13, Bucharest. The first part of the opening/plenary session was moderated by Tudor Sireteanu (IMS-AR), Dumitru Stanomir (UPB) and Ioan Magheți (UPB), comprising the following plenary papers:

- Tudor Sireteanu<sup>1</sup>, Stefanov Dimitar<sup>2</sup>, Ana-Maria Mitu<sup>1</sup>, Gh. Ghiță<sup>1</sup>, Nicolae Pop<sup>1</sup> (<sup>1</sup>IMS-AR, Department of Dynamic Systems, <sup>2</sup>Bulgarian Academy of Sciences), *Systems for vibration control and seismic protection with variable dry friction*;
- Mariana Cristina Stan<sup>1</sup>, Luminita Anghel<sup>2</sup> (<sup>1</sup>SC Sonobel SRL, <sup>2</sup>Technical University of Civil Engineering Bucharest), *Technical solutions for increasing acoustic comfort in an open space office*.
- Dan Alexandru Iordache<sup>1</sup>, Radu Nicolae Dobrescu<sup>1,2</sup> (<sup>1</sup>UPB, Physics Department, <sup>2</sup>Academy of Romanian Scientists), *Study of the information concept and of the information quality*;

The second part of the opening/plenary session was moderated by Mihai Valentin Predoi (UPB), Inge Gavăț (UPB), Nicolae Pop (IMS-AR), comprising the following plenary papers:

- Ionel Starețu, Cătălin Moldovan (Transilvania University of Brașov), *Bending sensors used to command a virtual anthropomorphic gripper for robots*;
- Mihai Valentin Predoi (UPB, Department of Mechanics), *Ultrasonic guided waves used to assess plate bonding quality*;
- Lucian Petrache, Viorel Anghel, Ștefan Sorohan (UPB, Strength of Materials Department), *Analysis using FEM of the axial – torsion buckling of a thin walled beam having cruciform profile*;

- Sorin Popa<sup>1,2</sup> (<sup>1</sup>IMS-AR, <sup>2</sup>ICECON S.A., Bucharest), *Analysis of the seismic damping capacity of the elastomeric isolators corresponding to the discrete changes of physical mechanical properties of the constitutive elements*;
- Adriana Stuparu (IMS-AR), *The evaluation of dynamic disturbances on one piston engine*;
- Mariana Cristina Stan (SC Sonobel SRL), *Architectural acoustics parameters*;
- Mircea Lupu<sup>1,2</sup> (<sup>1</sup>Transilvania University of Braşov, <sup>2</sup>Academy of Romanian Scientists), *Studies and applications of absolute stability and control of the nonlinear dynamical systems*;
- Bogdan Cioruţa<sup>1</sup>, Tudor Sireteanu<sup>2</sup>, Nicolae Pop<sup>2</sup> (<sup>1</sup>North University Centre of Baia Mare – Tehnical University of Cluj-Napoca, Faculty of Engineering, <sup>2</sup>IMS-AR), *A smooth friction model for dynamical systems*.

Session 1 of SISOM 2017, entitled “*Mechanical Modeling and Experiment, Wear Investigations of Materials, Biomechanics*”, took place on May 19<sup>th</sup>, 2017, in the IMS-AR building, 15 Constantin Mille street, Bucharest. This session 1 was moderated by Veturia Chiroiu (IMS-AR), Lucian Căpitanu (IMS-AR), Ion Bulac (University of Piteşti, Romania), comprising a number of 11 scientific papers, presented by researchers with various affiliations: Institute of Solid Mechanics of the Romanian Academy (IMS-AR, Bucharest), National Institute of Research and Development in Mechatronics and Measurement Technique (INCDMTM, Bucharest), Technical University of Civil Engineering Bucharest, University of Piteşti, National Institute for Aerospace Research “Elie Carafoli” (INCAS, Bucharest), Aerospace Consulting (Bucharest).

Session 2 of SISOM 2017 was dedicated to “*Robotics*”, taking place on May 19<sup>th</sup>, 2017, in the same IMS-AR building, 15 Constantin Mille street, Bucharest. This “*Robotics*” session was moderated by Luige Vlădăreanu, Mihaiela Iliescu and Barbu Valentin, comprising a number of 15 scientific papers. Researchers from numerous national and international institutions interacted during this “*Robotics*” session: Institute of Solid Mechanics of the Romanian Academy (IMS-AR, Bucharest, Romania), Parallel Robot and Mechatronic System Laboratory of Hebei Province & Key Laboratory of Advanced Forging & Stamping Technology and Science of Ministry of Education, Yanshan University (Qinhuangdao, Hebei Sheng, China), Laboratory of Information Processing, University Hassan II (Casablanca, Morocco), Ecole Royale Navale (Casablanca, Morocco), University of New Mexico (USA), Department of Mathematics, University of Punjab (Lahore, Pakistan), National Institute of Materials Physics (Măgurele, Romania), University “Politehnica” of Bucharest, Technical University of Civil Engineering Bucharest, National Institute for Aerospace Research “Elie Carafoli” (INCAS, Bucharest), North University Centre of Baia Mare – Tehnical University of Cluj-Napoca, Institute of Mathematics and Computer Science, Academy of Sciences of Republic of Moldova (Chişinău), CORNER SRL.

This “*Robotics*” Session 2 of SISOM 2017 was accompanied by a specialized Workshop, with open discussions, experiments, demonstrations, product exhibition, organized by the consortium of PN-II-PT-PCCA-2013-4-2009 project (VIPRO project: “Versatile robot platform, intelligent, portable with systems control over adaptive networks for rescue robots”), contract no. 009/2014, funded by the Romanian National Authority for Scientific Research and Innovation, CNCS/CCCDI – UEFISCDI.

Finally, Session 3 of the XXVIII-th Annual Symposium of the Institute of Solid Mechanics SISOM 2017 and Symposium of Acoustics was dedicated to “*Technical Acoustics and Vibration, Speech Technology*”, being moderated by Crăița Carp-Ciocardia, Inge Gavăț and Andrei Craifăleanu. This Session 3 took place on May 19<sup>th</sup>, 2017, at the University Politehnica of Bucharest, room BN 021, 313 Splaiul Independenței, Bucharest. A number of 13 scientific papers were presented, by authors affiliated to: University Politehnica of Bucharest, Military Technical Academy (Bucharest), “Dunărea de Jos” University of Galați (Romania), CEPSTRA Group SRL (Bucharest), Technical College “Dinicu Golescu” (Bucharest), etc.

Abstracts and full papers presented at the XXVIII-th Annual Symposium of the Institute of Solid Mechanics SISOM 2017 and Symposium of Acoustics, as well as at the previous editions of this symposium (starting with SISOM 2000), are available online on the symposium website:

[http://www.imsar.ro/html/\\_sisom.html](http://www.imsar.ro/html/_sisom.html)

The organizers invite you to participate to the following editions of this traditional symposium, which takes place in Bucharest, in May each year.

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