

ROMANIAN ACADEMY



SISOM 2019 and Symposium of Acoustics

BUCHAREST, 16 - 17 May

INSTITUTE OF SOLID MECHANICS
and
ACADEMY OF TECHNICAL SCIENCES,
COMMISSION OF ACOUSTICS
OF ROMANIAN ACADEMY
MECHANICS DEPARTMENT, UNIVERSITY
POLITEHNICA OF BUCHAREST

SYMPOSIUM PROGRAM

First day: 16 May 2019; Invited papers

**“Luxemburg” room of conferences of Romanian Academy Building;
13, “Calea 13 Septembrie” street**

First part; Opening session:

Moderators: Tudor SIRETEANU, Dumitru STANOMIR, Ioan MAGHEȚI

9.00-9.30 Reception of the participants; Opening speech of manager IMSAR, Corresponding member of Romanian Academy, Prof. Dr. Tudor SIRETEANU

9.30-10.00 Polidor BRATU¹, Ovidiu VOICU², Nicolae IACOB², Adrian Ion CIOCODEIU², Ionel OPREA² (¹ Institutul de Cercetări pentru Echipamente și Tehnologii în Construcții – ICECON SA, ² Institutul de Mecanica Solidelor al Academiei Române – IMSAR), *Performance analysis of seismic isolation systems according to the complexity of rheological modeling*

10.00-10.30 Svetlana SEGĂRCEANU^{1,2}, Elena OLTEANU^{1,2}, Inge GAVĂȚ² (¹Beia Consult International, ²Department of applied Electronics and information engineering, Politehnica University of Bucharest) *Evaluation of Speech and Non-speech Classification Techniques for Environmental Sounds Recognition*

10.30-11.00 Tudor SIRETEANU¹, Ana Maria MITU¹, Bogdan CIORUȚA² (¹Institute of Solid Mechanics of the Romanian Academy, Bucharest, Romania, ² Technical University of Cluj-Napoca - North University Centre Baia Mare, Office of Information & Communication, Baia Mare), *Control of bilinear hysteresis with variable friction*

11.00-11.30 Luige VLADAREANU¹, Ruxandra VIDU², Mihaiela ILIESCU, Sergiu Boris CONONOVICI¹, Marcel MIGDALOVICI¹, Nicolae POP¹, Victor VLADAREANU¹, Alexandru I. GAL¹, Octavian D. MELINTE¹ (¹Institute of Solid Mechanics of the Romanian Academy, ²California Solar Energy Collaborative, University of California, Davis, USA,) *Real-time control system of the cooperative intelligent nano-micro manipulators platform for the design and characterization of semiconductor nanowires on the same layer*

11.30-12.00 Ligia MUNTEANU, Ciprian DRAGNE, Cristian RUGINĂ, Dan DUMITRIU, Marius IONESCU, Veturia CHIROIU (Institute of Solid Mechanics, Romanian Academy, Romania) *A review on the optimum design criteria in robotics*

12.00-12.30 ROHINI¹, M. VENKATACHALAM², DAFIK³, Said BROUMI⁴, Florentin SMARANDACHE⁵ (^{1,2}PG & Research Department of Mathematics, Kongunadu Arts and Science College, Tamil Nadu, India, ³University of Jember, CGANT-Research Group, Department of Mathematics Education, Indonesia, ⁴Laboratory of Information Processing, Faculty of Science Ben M'Sik, University Hassan II, Sidi Othman Casablanca, Morocco, ⁵Department of Mathematics, University of New Mexico, USA) *Single Valued Neutrosophic Irregular Vertex Coloring*

12.30-13.00 Coffee break

First day, 16 May 2019, Second part:

Moderators: Svetlana SEGĂRCEANU, Mariana STAN, Nicolae POP

13.00-13.30 Ionel STAREȚU (Transilvania University of Brasov), *The Grasp and Micro manipulation-Case study*

13.30-14.00 Mariana Cristina STAN (SC SONOBEL SRL) *Acoustic design of five cinema-halls in Satu Mare*

14.00-14.30 Marian-Valentin IORDACHE¹, Dan Alexandru IORDACHE² (¹University LeTourneau, Longview, Texas, USA, ²Romanian Academy of Scientists) *Simplified Control Systems Description of Some Mechanical Vehicles*

14.30-15.00 Sorin POPA (ICECON SA), *Performances of antiseismic devices embedded in earthquake exposed buildings*

15.00-15.30 Florin SILIVASTRU, Valentin NAVRAPESCU, Gabi ROSCA, Adrian NANU (University Politehnica of Bucharest) *Contribution for the development of a web server integrated into programmable logic controller for a heating system process viewing*

15.30-16.00 Ileana Nicoleta POPESCU¹, Ruxandra VIDU², Nicolae POP³ (¹Valahia University of Târgoviște, ²California Solar Energy Collaborative, University of California, Davis, USA, ³Institute of Solid Mechanics of the Romanian Academy, Bucharest, Romania) *Compressibility, densification mechanism and compaction behavior modeling of metallic or composite powders*

16.00-16.30 Mircea LUPU^{1,2} (¹Romanian Academy Scientists, ²Transilvania University of Brasov), *Modeling of plasma jets in magneto gas dynamics of aligned fields*

16.30-17.00 Bogdan CIORUȚA¹, Tudor SIRETEANU² (¹Tehnicl University of Cluj-Napoca North University Centre Baia Mare, Office of Information & Communication, Baia Mare, ²Institute of Solid Mechanics of the Romanian Academy), *Optimization of dynamic systems sequence control using variable dry friction*

17.00-17.30 Cornelia Florentina DOBRESCU (National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development) *Parametric correlations of dissipated energy and vibration mode at vibratory compactors for road structures*

17.30-18.00 Bogdan CIORUȚA¹, Adrian Ioan POP² (Tehnicl University of Cluj-Napoca - North University Centre Baia Mare, ¹Office of Information & Communication, Baia Mare, ²Faculty of Engineering, Baia Mare), *Representations of analogies between mechanical and electrical dynamic systems*

18.00-18.30 Luminița ANGHEL¹, Mariana Cristina STAN² (¹University of Civil Engineering, Bucharest, ²SC SONOBEL SRL) *The airborne noise level propagated from the technical floor to buildings "Expobusiness Park" Bucharest*

Second day: 17 May 2019

May, 17, 2019, Spl. Independentei, 313, University POLITEHNICA of Bucharest

Session: Technical Acoustics and Speech Technology– room BN 021

Moderators: Inge GAVĂT, Crăița CARP-CIOCĂRDIA, Andrei CRAIFĂLEANU

9.00-9.15 Inge GAVĂT¹, Svetlana SEGĂRCEANU^{1,2} (¹Department of Applied Electronics and Information Engineering, Politehnica University of Bucharest, ¹Beia Consult International) *Speech Technology Today*

9.15-9.30 Laurențiu CRISTEA (Techno Volt SRL, Bucharest) *Selection of technological parameters influencing the integrity of electronic components subjected to vibration, during their manufacturing process*

9.30-9.45 Marius DEACONU (National Research and Development Institute for Gas Turbines COMOTI) *Wing integrated microperforated panels used in reduction of the aircraft noise*

9.45-10.00 Luminita DRAGASANU, Marius DEACONU (National Research and Development Institute for Gas Turbines COMOTI) *Analyzing the effectiveness of acoustic barriers made from recycled materials*

10.00-10.15 Carmen Elisabeta Radu, Edward Raschitor, Viorel Popescu, Iosif Tempea (University Politehnica of Bucharest) *Comparative analysis of the possibility of antivibrating isolation of the parking lot and of the drive motor of the elevator*

10.15-10.30 Carp-Ciocardia Daniela-Craită, Safta Carmen-Anca (University Politehnica from Bucharest) *Bearing vibration monitoring using the envelope method*

10.30-10.45 Al. Marinescu¹, P. Al. Chirita¹, Nicolaie Orasanu², Carmen A. Safta² (¹INOE-IAP Bucharest , ²University Politehnica of Bucharest) *Assessment of vibration spectrum measured and analysis of a hydraulic gear pump in normal and cavitation operating mode*

10.45-11.00 Nicolaie Orășanu, Andrei Craifăleanu, Cristi Dragomirescu (Mechanics Department, University Politehnica from Bucharest) *Study regarding asymmetrical resonators*

11.00-11.30 Coffee break

11.30-11.45 Edward Raschitor, Carmen Elisabeta Radu, Viorel Popescu, Iosif Tempea (University Politehnica of Bucharest) *Evaluation of the own pulsation in case of free vibrations of an overground parking. Conditions of anti-seismic design. Seismic shock absorber model*

11.45-12.00 Toma Zaplaic, Mihnea Magheti, Victor Minchevici, Nicolae Enescu (University Politehnica of Bucharest) *External noise analysis for adequate insulation of the building facades*

12.00-12.15 Andrei Daniel CALIN, Nicolae ENESCU (Faculty of Biotechnical Systems Engineering, Mechanics Department, University Politehnica from Bucharest), *The simulation of the dynamic features of the powertrain using the finite element method*

12.15-12.30 Mihnea MAGHEȚI¹, Alina CREȚU² (¹Univ.Politehnica from Bucharest, ²Statul Major al Aviatiei) *Assessing the impact of the increase in air traffic on airport noise*

12.30-12.45 Catalin Persu¹, Nicolae Enescu², Ioan Magheti², I.A.Gingu¹, Gheorghe Gabriel¹

(¹INMA Bucharest, Romania, Department of Mechanics UPB-Bucharest) *Modal analysis of a tractor cabin for optimization of working and safety conditions*

12.45-13.00 Eduard-Marius CRACIUN (“Ovidius” University of Constanța) *Crack propagation in human bones*

13.00-13.15 Anamaria-Nadie EMIN (“Ovidius” University of Constanța) *Thermoelastic materials with voids*

Second day of Symposium; 17 May 2019; IMSAR Room; 15, C-tin MILLE street

Session: Mechanical Modeling and Experiment

Moderators: Veturia CHIROIU, Lucian CĂPITANU, Daniela BARAN

9.00-9.20 Lucian CĂPITANU¹, Liliana - Laura BĂDIȚĂ², Constantin ȚIGĂNEȘTEANU¹, Virgil FLORESCU³, Liviu Florin ISVORANU¹ (¹ Institute of Solid Mechanics of the Romanian Academy, Bucharest, Romania, ² National Institute of Research and Development for Mechatronics and Measurement Technique, Bucharest, Romania, ³University of Civil Engineering, Bucharest, Romania) *Fretting manifestations in total hip prosthesis*

9.20-9.40 Daniela BARAN¹, Mihaela PETRE² (¹ National Institute for Aerospace Research “Elie Carafoli”, Bucharest, Romania, ²Aerospace Consulting, Bucharest, Romania) *Comparative stress analysis of a lug*

9.40-10.00 Luciana MAJERCSIK (University Transilvania from Brasov, Romania) *On the use of intelligent materials in vibration control*

10.00-10.20 I. GIRIP¹, V. MOȘNEGUTU¹, R. IOAN^{1,2} (¹Institute of Solid Mechanics of the Romanian Academy, Bucharest, Romania, ²University Spiru Haret, Bucharest) *On the phenomenon of electromagnetically induced transparency and its applications*

10.20-10.40 Ciprian DRAGNE¹, Luciana MAJERCSIK², Cristian RUGINA¹, Iulian GIRIP¹, Daniel BALDOVIN¹ (¹Institute of Solid Mechanics of the Romanian Academy, Bucharest, Romania, ²University Transilvania from Brasov, Romania) *Updating and correlation of FEM with experimental data*

10.40-11.00 Iacob NICOLAE (Institute of Solid Mechanics of the Romanian Academy, Bucharest) *Static and dynamic analysis of diesel generator engine from the board of vessel*

11.00-11.20 Silviu NASTAC ("Dunarea de Jos" University of Galati, Research Centre for Mechanics of Machines and Technological Equipments, Engineering and Agronomy Faculty in Braila, Romania), *Comparative study between fractional derivative and rational-power dissipative component of vibration isolators*

11.20-11.40 Carmen DEBELEAC ("Dunarea de Jos" University of Galati, Research Centre for Mechanics of Machines and Technological Equipments, Engineering and Agronomy Faculty in Braila, Romania), *Comparative analysis between linear and nonlinear approaches of vibratory drum - terrain interactions related to optimal compaction degree*

11.40-12.00 Coffee break

ROBOTICS SESSION¹ (12:00 – 16:00) and WORK-SHOP on ROBOTICS² (9:30-18:30)

¹RA IMSAR Council room, ² IMSAR Robotics Lab.

Moderators: Sergiu Boris CONONOVICI, Luige VLADAREANU, Mihaiela ILIESCU

12.00-12.20 Nicolae POP¹, Luige VLADAREANU¹, Adrian I. POP^{1,2}, Eliza MASTAN^{1,3} (¹Romanian Academy, Department of Mechatronics, Institute of Solid Mechanics, Bucharest, ² Technical University of Cluj-Napoca - North University Center of Baia Mare, Romania, ³High School "Nemeth Laszlo" Baia Mare, Romania) *Motion control for mobile robots using the model predictive control*

12.20-12.40 M. PARIMALA¹, D. ARIVUOLI², R. UDHAYAKUMAR³, Florentin SMARANDACHE⁴ (¹Senior Assistant Professor, Department of Mathematics, Bannari Amman Institute of Technology, Anna University Sathyamangalam, Tamilnadu, India, ²Assistant Professor, Department of Mathematics, Kumaraguru College of Technology, Anna University Coimbatore, Tamilnadu, India, ³Assistant Professor, Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology (VIT University), India, ⁴Mathematics & Science Department, University of New Mexico, USA) *nIag -Compact Spaces and nIag -Lindelof Spaces in Nano Ideal Topological Spaces*

12.40-13.00 Marcel MIGDALOVICI¹, Luige VLADAREANU¹, Nicolae Pop¹, Victor VLADAREANU¹, Alexandru VLADEANU², Daniela BARAN³, Gabriela VLADEANU¹ (¹Institute of Solid Mechanics of the Romanian Academy, ²University of Civil Engineering from Bucharest, ³National Institute of Aerospace Research “Elie Carafoli”, Bucharest) *Algorithm for physical identification of walking robots critical position*

13.00-13.20 Ionel-Alexandru GAL¹, Luige VLADAREANU¹, Alexandra CIOCÎRLAN¹, Ana-Maria TRAVEDIU¹ (¹Institute of Solid Mechanics of the Romanian Academy) *Smart wireless sensors routing protocol development aimed for smart wireless robot networks*

13.20-13.40 Dan N. DUMITRIU, Octavian Daniel MELINTE, Marius IONESCU (Institute of Solid Mechanics of the Romanian Academy, Bucharest) *Neural networks kinematics guidance of LewanSoul LeArm 5R serial manipulator*

13.40-14.00 Alexandru VLADEANU¹, Marcel MIGDALOVICI², Gabriela VLADEANU² (¹Technical University of Civil Engineering from Bucharest, ²Institute of Solid Mechanics of the Romanian Academy) *Method of determining critical positions at walking robots*

14.00 -14.20 Ciprian DRAGNE (*Institute of Solid Mechanics of the Romanian Academy, Bucharest, Romania*) *Robotics design - inverse kinematics, directional kinematics*

14.20-14.40 Coffee break

14.40-15.00 Mihai RADULESCU¹, Victor VLADAREANU¹, Luige VLADAREANU¹, Emilian M. DOBRESCU², Doina MARIN¹, Ana-Maria TRAVEDIU¹ (¹Institute of Solid Mechanics of the Romanian Academy, ²Romanian Academy) *Real time rehabilitation robot control by artificial intelligence techniques using adaptive neuro-fuzzy inference systems.*

15.00 -15.20 Corina RADU (Frenț)¹, Luige VLADAREANU¹, Liviu UNGUREANU², Ileana DUGĂEȘESCU², Marian LAZĂR³ and Mihaiela ILIESCU^{1*} (¹Institute of Solid Mechanics, Romanian Academy, ²University Politehnica of Bucharest, ³National Institute of Materials Physics) *Study on Upper Limb Prosthesis*

15.20-15.40 Cristina NIȚU¹, Victor VLĂDĂREANU¹, Ana-Maria TRAVEDIU¹, Alexandra CIOCÎRLAN¹, Vlad - Alexandru GROSU² (¹Institute of Solid Mechanics of the Romanian Academy) *Education management machine learning model*

15.40-16.00 Marius PANDELEA, Luige VLADAREANU, Mihaiela ILIESCU, Vlad Alexandru GROSU (Institute of Solid Mechanics of the Romanian Academy) *Intelligent advanced control techniques of the anthropomorphic walking robot AWR in undefined and unstructured virtual environments.*

16.00-16.20 Dragos CĂPĂȚÎNĂ, Marius PANDELEA, Doina MARIN and Mihaiela ILIESCU* (Institute of Solid Mechanics of the Romanian Academy) *Vibration Compaction Process of Soils in Roads – Overview*

16.20-16.40 Mihai RADULESCU¹, Luige VLADAREANU¹, Alexandru GAL¹, Doina MARIN¹, Alexandra CIOCÎRLAN¹ (¹Institute of Solid Mechanics of the Romanian Academy) *3D Modeling Advanced Techniques in Virtual Reality of the mobile rescue robot developed on the Versatile Intelligent Portable Platform VIPRO.*

² *Workshop with open discussions, experiments, demonstrations, product exhibition, organized by MULTIMOND2 project number PN-III-P1-1.2-PCCDI2017-0637/33PCCDI/01.03.2018, SMOOTH project, H2020-MSCA-RISE-2016-734875/2016-2020, KEYTHROB project PN-III-P3-3.1-PM-RO-CN-2018-0144 / 2 BM / 2018, PNCDI III and “Joint Laboratory of Intelligent Rehabilitation Robot” collaborative research agreement between Romanian Academy by IMSAR, RO and Yanshan University, CN, project KY201501009/2016.*

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