



**ASTR**

**Filiala Iași**

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## **RAPORT DE ACTIVITATE pentru anul 2021**

### **I. Activități specifice în cadrul filialei**

#### **I.A. Participarea cu lucrări din partea membrilor filialei pentru manifestări și publicații ale ASTR**

1. **Lazăr C.**, Regenerative and anti-lock braking unified control of an electric vehicle, a XVI-a editie a Conferinței “Zilele Academiei de Științe Tehnice din România”, 21-22 octombrie
2. **Condurache D.**, Premiul ASTR 2021 Constantin C. Teodorescu pentru grupul de lucrări: *Algebre hipercomplexe în studiul cinematicii de ordin superior al sistemelor multicorp*; Springer-Nature 2019.
3. O. Mocănița; D. Chicet; I.Vida-Simiti; B. Istrate; **C. Munteanu**, Material compozit rezistent la foc din sfere de sticlă și silicat de sodium, *Conferința “Zilele Academiei de Științe Tehnice din România”* (ASTR), 21-22 octombrie 2021.

#### **I.B. Participarea în Comitete de program, sau Colective editoriale ale manifestărilor, respectiv publicațiilor ASTR**

- **A. Dima** - membru în Comitetul editorial *Journal of Engineering Sciences and Innovation* (JESI) - Chemical Engineering, Materials Science and Engineering, Natural Resources
- **M. Voicu** - membru în Comitetul editorial *Journal of Engineering Sciences and Innovation* (JESI) - Electrotechnics, Electronics, Energetics, Automation

#### **I.C. Organizarea și co-organizarea de manifestări științifice (sub egida ASTR)**

1. Al 9 -lea Workshop Internațional pentru Securitate Ocupațională și Ingineria Mediului IS - SSM 2021, 13 octombrie 2021, Iași - **C. Baci** organizator principal.
2. A 15-a ediție a Școlii internaționale EUROLAN în domeniul Limbajului Natural. Titlul Școlii: *Introduction To Linked Data For Linguistics* în perioada 8-12 februarie 2021. Site: <http://eurolan.info.uaic.ro/2021/index.html>. Școala a fost inclusă în planul de activități a proiectului COST Lexus Linguarium. - **D. Cristea** organizator principal.

3. Colocviul internațional “Lexicografia academică românească. Provocările informatizării”, ediția a X-a (online), Iași, 27–28 mai 2021, în colaborare cu Colectivul de lexicologie – lexicografie de la Institutul de Filologie Română „A. Philippide” și echipele proiectelor TAFOC și eRomLex. – **D. Cristea** coorganizator
4. Ediția a 16-a a *International Conference on Linguistic Resources and Tools for Natural Language Processing*, ediție desfășurată online, între 13-14 decembrie 2020. Instituțiile organizatoare: Institutul de Informatică Teoretică de la Filiala Iași a Academiei Române, Institutul de Cercetări în Inteligență Artificială “M. Drăgănescu” din București, Facultatea de Informatică din Universitatea “A. I. Cuza” Iași și Asociația Română de Lingvistică Computațională. Evenimentul s-a derulat sub auspiciile Academiei de Științe Tehnice din România. Site: <https://profs.info.uaic.ro/~consilr/2021/>. – **D. Cristea** coorganizator
5. Primul workshop al proiectului DeLORo, 14 dec., online. – **D. Cristea** coorganizator
6. A 15-a ediție a Simpozionului Internațional de *Semnale, Circuite și Sisteme*, ISSCS 2021, Iași 15-16 iulie 2021 (**L. Goras** organizator principal) – volum de lucrări indexat ISI Web of Science, IEEE Xplore.
7. A 25-a ediție a Conferinței Internaționale *System Theory, Control and Computing*, ICSTCC 2021, October, Sinaia (**M. Voicu** - presedinte, **O. Păstrăvanu**, **C. Lazăr** – co-organizatori) – volum de lucrări indexat ISI Web of Science, IEEE Xplore.

## II. Cercetare (publicații, brevete, proiecte)

### II.A. Cărți și capitole în cărți

1. A. Burlacu, **D. Condurache**, **C. Lazăr**, *Motion Parameterization and Control: Advances and Applications*, Matrix Rom, 2021, ISBN 978-606-25-0653-7
2. **D. Condurache** (2021) *Singularity-Free Extraction of a Dual Quaternion from Orthogonal Dual Tensor*. In: Lenarčič J., Siciliano B. (eds) *Advances in Robot Kinematics 2020*. ARK 2020. Springer Proceedings in Advanced Robotics, vol 15. Springer, Cham. [https://doi-org.am.e-nformation.ro/10.1007/978-3-030-50975-0\\_18](https://doi-org.am.e-nformation.ro/10.1007/978-3-030-50975-0_18)
3. **D. Condurache** (2021), *The Full-Body Kepler’s Problem in a Non-Inertial Reference Frame., A Dual Lie Algebra Approach*, AAS 20-660, July 2020, In book: *Advances in the Astronautical Sciences*, Edition: Vol 175, 2021, Chapter: AAS 20-660, Publisher: Univelt, Incorporated, P.O. Box 28130, San Diego, California 92198
4. **V. I. Popa** (editor) *Sustainability of Biomass through Bio-based Chemistry*, CRC Press, 2021, ISBN 978-0-367-36595, 304 p.
5. **V. I. Popa**, Chap.1 – Biomass and sustainability, p. 1-33 in **V. I. Popa** (editor) *Sustainability of Biomass through Bio-based Chemistry*, CRC Press, 2021, ISBN 978-0-367-36595.
6. **M. Voicu**, *Systems Theory with Engineering Applications*. Cambridge Scholars Publishing, Newcastle upon Tyne, 2021, ISBN 1-5275-7264-1, ISBN13 978-1-5275-7264-5; 250 p. format A4; <https://cambridgescholars.com/product/978-1-5275-7264-5>

### II.B. Articole în reviste

1. M. Agop, T.C. Petrescu, D. Filipeanu, C.E. Grigoraș-Ichim, A.I. Voda, A. Zala, L. Dobreci, **C. Baci**, D. Vasincu. *Toward Complex Systems Dynamics through Flow Regimes of Multifractional Fluids*, *Symmetry* 2021, 13(5), 754. IF: 2.713 (zona galbenă) <https://doi.org/10.3390/sym13050754> (ISI)
2. E.R. Baci, R. Cimpoșu, A. Vițalariu, **C. Baci**, N. Cimpoșu, A. Sodor, G. Zegan, A. Murariu. *Surface Analysis of 3D (SLM) Co–Cr–W Dental Metallic Materials*,

- Applied Sciences*, 2021, 11(1), 255. IF: 2.679 (zona galbenă)  
<https://doi.org/10.3390/app11010255> (ISI)
3. L. Himiniuc, M. Agop, V. Ghizdovat, M.A. Paun, V.A. Paun, **C. Baci**, V.P. Paun, B. Toma. A Drug Release Mechanism Controlled by Hydrophobic/Hydrophilic Balance of the Matrix. Theoretical and Experimental Perspectives, *Mater. Plast*, 2020, 57(4), 155-165. IF: 0.593 [https://www.researchgate.net/profile/Viorel-Puiu-Paun/publication/348285268\\_A\\_Drug\\_Release\\_Mechanism\\_Controlled\\_by\\_HydrophobicHydrophilic\\_Balance\\_of\\_the\\_Matrix\\_Theoretical\\_and\\_Experimental\\_Perspectives/inks/60082acb299bf14088aac723/A-Drug-Release-Mechani](https://www.researchgate.net/profile/Viorel-Puiu-Paun/publication/348285268_A_Drug_Release_Mechanism_Controlled_by_HydrophobicHydrophilic_Balance_of_the_Matrix_Theoretical_and_Experimental_Perspectives/inks/60082acb299bf14088aac723/A-Drug-Release-Mechani) (ISI)
  4. **Condurache, D.**; Șfartz, E., Exact Closed-Form Solutions of the Motion in Non-Inertial Reference Frames, Using the Properties of Lie Groups SO (3) and SE(3) *Symmetry* 2021, 1963(13):1-17, <http://dx.doi.org/10.3390/sym13101963> (ISI)
  5. **Condurache, D.**; David, A., A tensor closed-form solution of two-body problem in rotating reference frame, *Romanian Journal of Mechanics*, ISI, ISSN 2537 -5229, vol 6, nr 2 (July-December) 2021, pag. 31-45., Bucharest, 2021
  6. Monica Fira, Hariton-Nicolae Costin, **Liviu Goras**, On the Classification of ECG and EEG Signals with Various Degrees of Dimensionality Reduction, *Biosensors* 2021, 11(5), 161; <https://doi.org/10.3390/bios11050161> (ISI)
  7. **Liviu Goras**, CAS News From Romania, *IEEE Circuits and Systems Magazine* MCAS.2021.3118485, 12 November 2021, (ISI)
  8. Țiganasu A., **Lazar C.**, Caruntu C.F., Dosoitei C., Comparative Analysis of Advanced Cooperative Adaptive Cruise Control for Vehicular Cyber Physical Systems, *Journal of Control Engineering and Applied Informatics*, 23 (1), 2021 pp. 82-92, ISSN:1454-8658, WOS:000634893300009. (ISI)
  9. Ancas, AD., **Munteanu, C.**, Istrate, B., Profire, M., Turcanu, FE., The Influence of the Environment for Glass-Reinforced Plastic Composite Material Used for Ground Water Transport Pipes, *Materials*, Volume14, Issue12, Article Number3160, DOI10.3390/ma14123160, Published JUN 2021, (IF=3.623) (zona roșie) (ISI)
  10. Istrate, B., Rau, JV., **Munteanu, C.**, Antoniac, IV., Saceleanu, V., Properties and in vitro assessment of ZrO<sub>2</sub>-based coatings obtained by atmospheric plasma jet spraying on biodegradable Mg-Ca and Mg-Ca-Zr alloys, *Ceramics International*, Volume46, Issue10, Page15897-15906, Part B, DOI10.1016/j.ceramint.2020.03.138, Published JUL 2021, (IF=4.527) (zona roșie) (ISI)
  11. Metalnikov, P., Eliezer, D., Ben-Hamu, G., Tal-Gutelmacher, E., Gelbstein, Y., **Munteanu, C.**, Hydrogen embrittlement of electron beam melted Ti-6Al-4V, *Journal of Materials Research and Technology-JMR&T*, Volume9, Issue6, Page16126-16134, DOI10.1016/j.jmrt.2020.11.073, Published NOV-DEC 2020, (IF=5.039) (zona roșie) (ISI)
  12. Istrate, B., **Munteanu, C.**, Cimpoesu, R., Cimpoesu, N., Popescu, OD., Vlad, MD., Electrochemical and In Vitro Analysis of Mg-0.5Ca-xGd Biodegradable Alloys, *Applied Sciences - Basel*, Volume11, Issue3, Article Number981, DOI10.3390/app11030981, Published FEB 2021, (IF=2.679) (zona galbenă) (ISI)
  13. Ghiban, B., Pascu, NE., Antoniac, IV., Jiga, G., Milea, C., Petre, G., Gheorghe, C., **Munteanu, C.**, Istrate, B., Surface Characterization of Fracture in Polylactic Acid vs. PLA plus Particle (Cu, Al, Graphene) Insertions by 3D Fused Deposition Modeling Technology, *Coatings*, Volume11, Issue6, Article Number633, DOI10.3390/coatings11060633, Published JUN 2021, (IF=2.881) (zona galbenă) (ISI)
  14. Baltas, LS., Patachia, S., Ekincioglu, O., Ozkul, H., Croitoru, C., **Munteanu, C.**, Istrate, B., Tiorean, MH., Polymer-Cement Composites Glazing by Concentrated

- Solar Energy, *Coatings*, Volume11, Issue3, Article Number350, DOI10.3390/coatings11030350, Published MAR 2021, (IF=2.881) (zona galbenă) **(ISI)**
15. Radu, CD., Verestiuc, L., Ulea, E., Lipsa, FD., Vulpe, V., **Munteanu, C.**, Bulgariu, L., Pasca, S., Tamas, C., Ciuntu, BM., Ciocan, M., Sirbu, I., Gavrilas, E., Macareel, CV., Istrate, B., Evaluation of Keratin/Bacterial Cellulose Based Scaffolds as Potential Burned Wound Dressing, *Applied Sciences - Basel*, Volume11, Issue5, Article Number1995, DOI10.3390/app11051995, Published MAR 2021, (IF=2.679) (zona galbenă) **(ISI)**
  16. Baltatu, MS., Vizureanu, P., Sandu, AV., **Munteanu, C.**, Istrate, B., Microstructural Analysis and Tribological Behavior of Ti-Based Alloys with a Ceramic Layer Using the Thermal Spray Method, *Coatings*, Volume10, Issue12, Article Number1216, DOI10.3390/coatings10121216, Published DEC 2020, (IF=2.881) (zona galbenă) **(ISI)**
  17. Paleu, CC., **Munteanu, C.**, Istrate, B., Bhaumik, S., Vizureanu, P., Baltatu, MS., Paleu, V., Microstructural Analysis and Tribological Behavior of AMDRY 1371 (Mo-NiCrFeBSiC) Atmospheric Plasma Spray Deposited Thin Coatings, *Coatings*, (IF=2.881) (zona galbenă) **(ISI)**
  18. **Munteanu C.**, Paleu V., Istrate B., Dascălu A., Paleu C.C., Bhaumik S., Ancaș A.D., Tribological behavior and microstructural analysis of atmospheric plasma spray deposited thin coatings on cardan cross spindles, *Materials*, Volume 14, Issue 23, 2021, Article number 7322, 10.3390/ma14237322, (zona roșie) **(ISI)**
  19. **Munteanu C.**, Vlad D.M., Sindilar E.-V., Istrate B., Butnaru M., Pasca S.A., Nastasa R.O., Mihai I., Burlea S.-L., Novel Mg-0.5Ca-xMn biodegradable alloys intended for orthopedic application: An in vitro and in vivo study, *Materials*, Volume 14, Issue 23, 2021, Article number 7262, 10.3390/ma14237262, (zona roșie) **(ISI)**
  20. Istrate B., **Munteanu C.** Tribological aspects of some biodegradable magnesium alloys, *INCAS Bulletin Open Access* Volume 12, Issue 1, Pages 83 – 89, 2020
  21. Mahu G., **Munteanu C.**, Istrate B., Blanari I. Paleu C. ,Cotrut C.M. Evaluation of the corrosion resistance of some coating obtained by thermal spray in plasma jet, on the surface of some crankshafts made of C45 steel, *Revista de Chimie Open Access* Volume 71, Issue 10, Pages 211 – 223 November 2020
  22. Matcovschi M-H., Apetrii M., **Pastravanu O.**, **Voicu M.**, Invariant Sets With Arbitrary Convex Shapes In Linear System Dynamics. *Romanian Journal of Information Science and Technology*, Vol. 24, Nr. 4 (2021), 402–417, pp. 1453-8245 **(ISI)**
  23. **Valentin I.Popa**, Natural polyphenols as compounds with biological activity, *Studia UBB Chemia*, LXVI, 3 (89-96), 2021 DOI:10.24193/subbchem.2021.3.04 **(ISI)**
  24. Elena Ungureanu, Alina E. Trofin, Lucia C. Trinca, Adina M. Ariton, Ovidiu C.Ungureanu, Maria E.Fortuna, Doina C. Jitareanu and **Valentin I. Popa**, Studies on kinetics and adsorption equilibrium of lead and zinc ions from aqueous solutions on Sarkanda grass lignin, *Cellulose Chem. Technol.*, 55 (7-8), 939-948 (2021) **(ISI)**
  25. Ungureanu, D., **Taranu, N.**, Ghiga, D.A., Isopescu, D.N., Mihai, P., Cozmanciuc, R., Diagonal Tensile Test on Masonry Panels Strengthened with Textile-Reinforced Mortar, *Materials*, 22 (14), 2021, 7021, DOI: 10.3390/ma14227021. **(ISI)**
  26. Lupășteanu, V., Ungureanu, D., **Taranu, N.**, Isopescu, D.N., Lupășteanu, R., Mihai, P., Structural Response of Bonded Joints between FRP Composite Strips and Steel Plates, *Materials*, 14 (21), 2021, 6722, DOI: 10.3390/ma14216722. **(ISI)**

27. Kaddouri H., Cherradi T., Kourdou I., Rotaru A., **Taranu N.**, Barbuta M., Tensile behaviour of glass fibre reinforced cementitious matrix for masonry strengthening, *Romanian Journal of Materials*, 51 (4), 2021, 520-527.

## II.C. Articole în volum de conferințe

1. A.G. Albulescu, C. Bejinariu, I. Popescu, **C. Baci**, M.A. Bernevig-Sava. Why do the psycho-social conditions in the field of mining require changes to occupational health and safety legislation, MATEC Web of Conferences, 2020, 305, 00091. <https://doi.org/10.1051/mateconf/202030500091>
2. I. Popescu, N.M. Lohan, **C. Baci**, A.M. Cazac, E.R. Baci. The subjects of the offenses to the norms on safety and health at work and the social and organizational effects specific to companies conducting mining activities, MATEC Web of Conferences, 2020, 305, 00082. <https://doi.org/10.1051/mateconf/202030500082>
3. **Condurache D.**, Hypercomplex universal variables approach for the state transition matrix in the general keplerian relative orbital motion, 31ST AAS/AIAA *Spaceflight Mechanics Meeting*, Charlotte, North Carolina, USA, February 2021
4. **Condurache D.**, Dual Lie algebra representations of rigid body displacement and motion. An overview (I), 2021 AAS/AIAA *Astrodynamics Specialist Conference, Big Sky - Virtual*, USA, 9-11 august, 2021, Paper AAS 21-627
5. **Condurache D.**, The state transport and transition matrix in the general keplerian relative orbital motion, 72nd *International Astronautical Congress*, October 2021, IAF Dubai, United Arab Emirates, *Astrodynamics Symposium*, Paper ID: 63271
6. M. Fira and **L. Goras**, On the influence of feature selection with Laplacian Score in ECG signals classification, 2021 *International Symposium on Signals, Circuits and Systems (ISSCS)*, 2021, pp. 1-4, doi: 10.1109/ISSCS52333.2021.9497440.
7. M. Fira and **L. Goras**, Improving multiclass classification accuracy for ECG signals belonging to imbalanced databases, 2021 *International Symposium on Signals, Circuits and Systems (ISSCS)*, 2021, pp. 1-6, doi: 10.1109/ISSCS52333.2021.9497389.
8. R.-D. Florescu and **L. Goras**, On sensitivity functions and sensitivity points – A case study for a DC-DC Buck converter model, 2021 *International Symposium on Signals, Circuits and Systems (ISSCS)*, 2021, pp. 1-6, doi: 10.1109/ISSCS52333.2021.9497409.
9. **Liviu Goras**, Paul Ungureanu, Monica Fira, On Pattern Formation in a Class of Graph Neural Networks, 2021 *International Symposium on Signals, Circuits and Systems (ISSCS)*, 2021
10. Baci A., **Lazar C.**, Data Driven Control for Swing-up and Stabilization of an Inverted Pendulum, 19th *Mediterranean Conference on Control and Automation (MED)*, *IEEE Xplore*, Puglia, Italy, 22-25 June, 2021, pp. 1155-1160, DOI: [10.1109/MED51440.2021.9480190](https://doi.org/10.1109/MED51440.2021.9480190)
11. Baci A., **Lazar C.**, Position Control of a Mobile Inverted Pendulum System Using Model-Free Intelligent Controllers, 23rd *International Conference on Control Systems and Computer Science (CSCS)*, *IEEE Xplore*, Bucharest, 26-28 May, 2021, pp. 15-20, DOI: [10.1109/CSCS52396.2021.00010](https://doi.org/10.1109/CSCS52396.2021.00010)
12. Costin M., **Lazar C.**, Predictive Control of a Two-Input Two-Output Current System for Permanent Magnet Synchronous Machines, 25th *International Conference on Methods and Models in Automation and Robotics (MMAR)*, *IEEE Xplore* Miedzyzdroje, Poland, 23-26 August, 2021, pp. 7-12, DOI: [10.1109/MMAR49549.2021.9528476](https://doi.org/10.1109/MMAR49549.2021.9528476)
13. Costin M., **Lazar C.**, Predictive dq Current Control of an Induction Motor, 25th *International Conference on System Theory, Control and Computing (ICSTCC)*,

- IEEE Xplore**, Iasi, 20-23, October, 2021, pp. 637-642, DOI: [10.1109/ICSTCC52150.2021.9607241](https://doi.org/10.1109/ICSTCC52150.2021.9607241)
14. Baciu A., **Lazar C.**, Caruntu C.F., Iterative Feedback Tuning of Model-Free Controllers, *25th International Conference on System Theory, Control and Computing (ICSTCC)*, **IEEE Xplore**, Iasi, 20-23 October, 2021, pp. 467-472, DOI: [10.1109/ICSTCC52150.2021.9607213](https://doi.org/10.1109/ICSTCC52150.2021.9607213)
  15. Faktorova, D., Novy, F., Steigmann, R., Istrate, B., **Munteanu, C.**, Savin, A., Nondestructive Evaluation of Biodegradable Magnesium Alloys, *13th International Conference on Elektro (ELEKTRO 2020)*, Published DEC 2020, Document Type Proceedings Paper, Conference, Meeting 13th International ELEKTRO Conference (ELEKTRO), Location Taormina, ITALY, Date MAY 25-28, 2020
  16. Paleu, CC., Istrate, B., Paleu, V., **Munteanu, C.**, Technological and structural analysis of Al<sub>2</sub>O<sub>3</sub> 40TiO<sub>2</sub> coating deposited on a shaft sleeve of hydraulic pump, *International Conference on Tribology (ROTRIB'19)*, Book Series IOP Conference Series-Materials Science and Engineering, Volume 724, Article Number 012063, DOI 10.1088/1757-899X/724/1/012063, Published DEC 2020, Document Type Proceedings Paper, Conference, Meeting 14th International Conference on Tribology (ROTRIB), Location Tech Univ Cluj Napoca, Cluj Napoca, ROMANIA, Date SEP 19-21, 2019
  17. Savin, A., Novy, F., Craus, ML., Steigmann, R., Istrate, B., **Munteanu, C.**, Assessment of magnesium calcium alloys improved by rare earths addition for medical implants, *MODTECH International Conference - Modern Technologies in Industrial Engineering VIII.*, Book Series IOP Conference Series-Materials Science and Engineering., Volume 916., Article Number 012099., DOI 10.1088/1757-899X/916/1/012099., Published DEC 2020, Document Type Proceedings Paper., Conference., Meeting 8th International Conference on Modern Technologies in Industrial Engineering VIII (ModTech), Location ELECTR NETWORK, Date JUN 23-27, 2020
  18. Stescu, C., Chicet, D., Tufescu, A., Istrate, B., **Munteanu, C.**, Strugaru-Iacob, S., Contact stress simulation problem in case of thermal spray coatings, *MODTECH International Conference - Modern Technologies in Industrial Engineering VIII*, Book Series IOP Conference Series-Materials Science and Engineering, Volume 916, Article Number 012114, DOI 10.1088/1757-899X/916/1/012114, Published DEC 2020, Document Type Proceedings Paper, Conference, Meeting 8th International Conference on Modern Technologies in Industrial Engineering VIII (ModTech), Location ELECTR NETWORK, Date JUN 23-27, 2020
  19. Dascălu A., Istrate B., **Munteanu C.**, Paleu Cirlan C., Paleu V. Morphological and tribological studies of thermal plasma jet deposited coatings used in cardan joints, *IOP Conference Series: Materials Science and Engineering* Open Access Volume 997, Issue 124 December 2020 Article number 0120229th *International Conference on Advanced Concepts in Mechanical Engineering*, ACME 2020 Iasi, 4 June 2020 through 5 June 2020, Code 166006
  20. Lupescu S., **Munteanu C.**, Tufescu A., Istrate B., Basescu N. Contact stress simulation problem in case of the Mg alloys, *IOP Conference Series: Materials Science and Engineering* Open Access Volume 997, Issue 124 December 2020 Article number 0120249th *International Conference on Advanced Concepts in Mechanical Engineering*, ACME 2020 Iasi 4 June 2020 through 5 June 2020, Code 166006

21. Mocanita O., Chicet D.L., Rusu O., Istrate B., **Munteanu C.**, Expanded Foam Glass - An Application for Fire Resistant Multilayer Materials, *IOP Conference Series: Materials Science and Engineering* Open Access Volume 877, Issue 117 July 2020 Article number 0120382020 EUROINVENT *International Conference on Innovative Research*, ICIR 2020 Iasi21 May 2020 through 23 May 2020, Published DEC 2020, Code 161805
22. Gaiceanu, T., **Pastravanu, O.**, 2021, On CNN applied to speech-to-text-comparative analysis of different gradient based optimizers, *IEEE 15th International Symposium on Applied Computational Intelligence and Informatics* (SACI 2021), pp. 85-90, ISBN: 978-1-7281-9544-5.
23. **O. Pastravanu**, M.H. Matcovschi, 2021, Stability of switched linear systems with average dwell time – A result encompassing several prior approaches, *IEEE 23rd International Conference on Control Systems and Computer Science* (CSCS 2021), pp. 76–81, ISBN 978-1-6654-3939-8 ISSN: 2379-0482
24. Matcovschi, M-H., Apetrii M., **Pastravanu, O.-C.**, **Voicu, M.**,2021, Minkowski and Lyapunov Functions in Contractive Sets Characterization for Discrete-Time Linear Systems. Proceedings, *IEEE 25th International Conference on System Theory, Control and Computing* (ICSTCC 2021), pp. 227-233, ISBN 978-1-6654-1496-8
25. Zghibarcea, Ș., Ungureanu, D., **Țăranu, N.**, Hoha, D., Polcovnicu, R.A., Leizeriuc, T.A., Cold in-place recycling of aged and deteriorated asphalt and concrete pavements, *IOP Conf. Series: Materials Science and Engineering* 1182 (2021) 012084 doi: 10.1088/1757-899X/1182/1/012084.
26. Polcovnicu, R.A., **Țăranu, N.**, Ungureanu, D., Zghibarcea, Ș., Hudîșteanu, S.V., Modern manufacturing technology for modular photovoltaic panels: State-of-the-art and future trends, *IOP Conf. Series: Materials Science and Engineering* 1182 (2021) 012062 doi: 10.1088/1757-899X/1182/1/012062.
27. Zghibarcea, S., **Taranu, N.**, Ungureanu, D., Boboc, A., Boboc, V., Reinforcement methods designed to increase the residual life expectation of rigid pavements, *IOP Conf. Series: Materials Science and Engineering* 1138 (2021) 012046 doi: 10.1088/1757-899X/1138/1/012046.
28. Scutaru, M.C., **Țăranu, N.**, Ungureanu, D., Comisu, C.C., Boacă, G., Viability assessment of a mixed steel-concrete bridge structure, Bridge Maintenance, Safety, Management, Life-Cycle Sustainability and Innovations - *Proceedings of the 10th International Conference on Bridge Maintenance, Safety and Management*, IABMAS 2020, Sapporo 11-15 April 2021, 942 – 948, DOI 10.1201/9780429279119-126.
29. Taranu, G., Toma, I.O., **Țăranu, N.** Shake table test of a 1:2 scale historical unreinforced masonry building. *Proceedings of the 1st Croation Conference on Earthquake Engineering* 1CroCEE, 22-24 March 2021, Zagreb, Croatia, 895-892.
30. Toma, I.O., Ențuc, I.S., Petcu, O.A., **Taranu, N.**, Mathe, A.E., Taranu, G., Mihai P., Numerical investigations on the seismic performance of a scaled-down RC frame structure pre-and post-strengthening with composite membrane. *Proceedings of the 1st Croation Conference on Earthquake Engineering* 1CroCEE, 22-24 March 2021, Zagreb, Croatia, 1265-1264.
31. Toma I. O., Taranu, G., Mihai P., **Taranu, N.**, Budescu, M., Stratulat, M.S. Shake table tests to assess the behaviour of structural systems under seismic excitations. *Proceedings of the 1st Croation Conference on Earthquake Engineering* 1CroCEE, 22-24 March 2021, Zagreb, Croatia, 1265-1276.
32. Taranu, G., **Taranu, N.**, Toma, I.O., Shake table test of a structural model made of glass fiber reinforced mineral matrix composite. *Proceedings of the 1st Croation Conference on Earthquake Engineering* 1CroCEE, 22-24 March 2021, Zagreb, Croatia, 1277-1284

33. Sococol, I., Toma, I.O., Mihai, P., **Taranu, N.**, Budescu, M., An alternative approach to improve the capacity design concept for moment resisting reinforced concrete (RC) frame systems, *Proceedings of the 1st Croatia Conference on Earthquake Engineering* 1CroCEE, 22-24 March 2021, Zagreb, Croatia, 1285-1296.

## II.D. Brevete

1. Budescu M, Venghiac V, Isopescu D, Stascov M, **Taranu N.** (2021), Girder-pillar joint for dissipating energy generated by earthquakes used in metal structures as frameworks, has dissipating metallic units which are attached to metallic girder and metallic pillar by unit of some bolts, respectively, *Patent Number:RO134844-A2, Univ Iasi Tehnica Asachi Gheorghe*, Derwent Primary Accession Number: 2021-36329T, [www.isiwebknowledge.com](http://www.isiwebknowledge.com)

## II.E. Coordonări / Participări în proiecte de cercetare-dezvoltare

### D. Condurache

- Director proiect *Mediu colaborativ pentru dezvoltarea arhitecturilor cloud bazate pe OpenStack cu aplicații în CDI, POC/398/1/1/Dezvoltarea unor rețele de centre CD, coordonate la nivel national si racordate la rețele europene si internationale de profil si asigurarea accesului cercetatorilor la publicatii stiintifice si baze de date europene si internationale.* Cod SMIS 2014+124998, Valoare: 5.048.822,88 lei

### D. Cristea

- Îndrumarea colectivului de limbaj natural din cadrul Institutului de Informatică Teoretică al Academiei Române în realizarea a 2 teme de cercetare: •*Modele, resurse și tehnici de prelucrare a limbajului natural utilizate în studierea limbii române moderne și în diacronie* (cu finalizare în 15.06.2021) •*Studiul computațional al limbii române din perspectivă diacronică și sincronică.* (cu finalizare în 31.12.2021)
- Îndrumarea colectivului de la UAIC-FII în proiectul de cercetare *Resurse și tehnologii pentru dezvoltarea interfețelor om-mașină în limba română* (ReTeRom), în cadrul competiției PNCDI III, Programul 1 – Proiecte Complexe realizate în consorții CDI – 2017, în calitate de responsabil al proiectului component CoBiLiRo. Proiectul a fost coordonat de acad. Dan Tufiș – Institutul de Cercetări în Inteligență Artificială, Academia Română.
- Continuarea activității în calitate de coordonator în proiectul DeLORo (*Deep Learning for Old Romanian*), cu numărul de cod PN-III-P2-2.1-PED-2019-3952, numărul contractului 400PED, cu numele complet „Modele de inteligență artificială (*deep learning*) aplicate în analiza sintactico-semantică a limbii române vechi”, parteneri: Academia Română Filiala Iași și Universitatea București.
- Mentor în proiectul PN-III-P1-1.1-PD-2019-0660: *Computational Representation in Linguistic Big Data Processing*, coord. dr. Mihaela Onofrei – ARFI-IIT Iași.
- Mentor în proiectul PN-III-P1-1.1-PD-2019-0619: *Aplicații ale inteligenței artificiale în ameliorarea plantelor*, coord. dr. Iulian Gabur – Univ. Agronomică Iași.

### C. Munteanu

- Director Contract Internațional ”*Program in Materials, Additive and Manufacturing, and Multiscale materials Engineering*” (3ME), *Northeastern University din Boston – SUA Contract nr.W911NF2020024/2021 (subcontract 25212/2021 – 504141/2021) în valoare de 100.000 \$;*
- Membru Contract internațional transfrontalier – “*Improving the quality of solid biofuels produced from raw material collected from both sides of Prut river*” - 2soft / 1.2 / 44 BCS RO-MD, 2021 -2022;



- Director Proiect Național Complex „Obținerea și expertizarea unor noi materiale biocompatibile pentru aplicații medicale”, Contract Nr. 60PCCDI / 2018, PN-III-P1-1.2-PCCDI-2017-0239, 2018-2021, Valoarea totala proiect complex: 5.273.400 Lei;
- Director Contract Nr. 7294/2019 - 2022 ”’Cercetări științifice și aplicații practice pentru prototipurile C.En în domeniul stocării hidrogenului în materiale din sticlă”, C.En Ltd, Valoare contract (TUIASI) :125.000 Euro;
- Director Contract Nr. 19511/2018 - 2022 ”Analize structurale si compozitionale” S.C. Process Engineering SRL, Contract deschis pe durată nedeterminată. Valoare contract TUIASI/2021: 4429,94 Lei.

#### N. Țăranu

- Membru colectiv “Produce și tehnologii ecoinovatoare pentru eficiență energetică în construcții – EFECON”, cofinantare din Fondul European de Dezvoltare Regională prin Programul Operațional Competitivitate 2014-2022,

### III. Prezentări invitate / Comunicări

1. Daniel George Tanasievici<sup>1</sup>, Gabriela Caldarescu<sup>1\*</sup>, **Constantin Baciu**<sup>2</sup> and Elena Matcovschi<sup>2</sup>, The role of cognitive functions in the dynamics of work accidents, SESAM – Universitatea din Petroșani, 2021
2. **D. Condurache**, Higher-Order Accelerations Field with Multidual Algebra - Keynote Lecture, May 2021 „Acoustics and Vibration of Mechanical Structures“ International conference, MAY 28-29, 2021, TIMIȘOARA, ROMÂNIA
3. **D. Cristea**, C. Pădurariu, P. Rebeja, L.A. Scutelnicu, M. Onofrei-Plamadă, P.A. Crucianu, S.C. Bolea, D. Gîfu, G. Haja, E.I. Tamba, R. Vieru – Short-circuiting manual annotation in the process of building a corpus of old Cyrillic Romanian, *Simpozionul „Sisteme Inteligente și Aplicații”*, în cadrul „Zilelor Academice Ieșene”, Ediția a XXXVI-a, 22 octombrie 2021, Iași, Romania.
4. S.C. Bolea, **D. Cristea**, P.A. Crucianu, G. Dumitrescu, D. Gîfu, G. Haja, M. Onofrei, C. Pădurariu, P. Rebeja, L.A. Scutelnicu, E.I. Tamba, R. Vieru. Scrierile vechi românești în atenția cititorului de azi (DeLORo – Deep Learning for Old Romanian), at the *10th International Colloquium Romanian Academic Lexicography. The Challenges of Computerization*, May 27-28, 2021.
5. **D. Cristea**. Invited speaker in the ELRC Panel “Connecting Europe facility”, 29 September 2021 - Romania (online).
6. **D. Cristea**, P. Rebeja, C. Pădurariu, C. Bolea: Technologies and Resources for Language Processing. An European survey and the Iași Portal – invited presentation at the *Romanian AI Days*, online 24 Nov.
7. **D. Cristea**: Opening and closing speeches at the 16<sup>th</sup> international conference *Linguistic Resources and Tools for Processing Natural Language*, online 13 Dec.
8. **D. Cristea**, P. Rebeja, C. C. Pădurariu, M. Onofrei, A. Scutelnicu: Data Structure and Acquisition in DeLORo – a Technology for Deciphering Old Cyrillic-Romanian Documents, at the 16<sup>th</sup> international conference *Linguistic Resources and Tools for Processing Natural Language*, online 13 Dec.
9. **D. Cristea**: DeLORo – Deep Learning for Old Romanian. What next?, in the *1<sup>st</sup> DeLORo workshop, joined with ConsILR 2021*, 14 Dec. online.
10. Monica Fira, **Liviu Goraș** - Îmbunătățirea preciziei clasificării multiclase pentru semnalele ECG; repartiție neuniformă și uniformă a claselor, *Zilele Academice Ieșene” Ediția a XXXVI-a Simpozionul „Sisteme Inteligente și Aplicații”* On-line, 22 octombrie 2021

11. Monica Fira, **Liviu Goraș** - Selecția trăsăturilor cu Scorul Laplacian în clasificarea semnalelor ECG, *Zilele Academice Iașene*” Ediția a XXXVI-a Simpozionul „Sisteme Inteligente și Aplicații” On-line, 22 octombrie 2021
12. **Lazar C.**, Regenerative and anti-lock braking unified control of an electric vehicle, a XVI-a editie a Conferinței “Zilele Academiei de Științe Tehnice din România”, 21-22 octombrie
13. **C. Munteanu**, D.L. Chicet<sup>1</sup>, B.Istrate, M. Benchea , C. Paulin, I. Vida-Simiti, Evaluation of abrasive wear resistance of self – fluxing Ni-base coating by scratch testing, *Conferința: Trans și Interdisciplinaritate în Cercetarea Inginerească și Tehnologie* 20 MAI 2021
14. O. Mocănița; D. Chicet; I.Vida-Simiti; B. Istrate; **C. Munteanu**, Material compozit rezistent la foc din sfere de sticlă și silicat de sodium, *Conferința Zilele Academiei de Științe Tehnice din România (ASTR)*, 21-22 octombrie 2021.
15. **O. Pastravanu**, M.H. Matcovschi, **M. Voicu**, Condiții suficiente de stabilitate pentru sisteme liniare de comutație, cu durate medii pentru moduri, *Sesiunea de comunicări științifice a Institutului de Matematica “Octav Mayer” și a Comisiei de Automatica teoretică și Teoria controlului*, 28 mai 2021.
16. Mihaela Matcovschi, Marius Apetrii, **Octavian Păstrăvanu**, **Mihail Voicu**. Inecuația matriceală Lyapunov - proprietăți ale soluțiilor și extinderi conceptuale. *Sesiunea de comunicări științifice a Institutului de Matematica “Octav Mayer” și a Comisiei de Automatica teoretică și Teoria controlului*, 30 octombrie 2021. *Zilele academice iașene*, Academia Română, Filiala Iași,
17. **Valentin I. Popa**, Biorefining as a possibility to recover the compounds with biological activity Invited plenary lecture at *Scientific Conference of Doctoral Schools*, The Ninth Edition, Dunărea de Jos University, Galați, June 10<sup>th</sup>-11<sup>th</sup>, 2021
18. Elena Ungureanu, Carmencica Doina Jitareanu, Alina Trofin, O.C.Ungureanu, Adina-Mirela Ariton, Lucia Carmen Trinca and **Valentin I. Popa**, Aspects concerning the influence of some polymeric composites structure susceptible at biodegradation on the process of plant development, Paper presented at *Symposium on Life Science Today and Tomorrow*, organised by University of Life Sciences, Iași, October, 21-22, 2021

#### **IV. Activități editoriale – Membri în colective de redacție, comitete de program, referenți, recenzenți**

##### **N. D. Alexandru**

- Membru în Colectivul editorial al revistei “*Advances in Electrical and Computer Engineering*” și referent
- Membru în Technical Program Committee for *Advanced International Conference on Telecommunications AICT* 2021 (under the DataSys 2021 umbrella), May 30 - June 03, 2021, Valencia, Spain.
- Member in Technical Program Committee for ISEEE 2021, October 28-30, Galați, Romania
- Membru în International Program Committee of IFSA ARCI' 2021, Chamonix-Mont-Blanc, 3-5 February 2021.
- Membru în Technical Program Committee for IEEE BlackSeaCom 2021, May 24 - May 28, 2021 (Virtual Conference)
- Member in Technical Program Committee for ECAI 2021, July 1-2, Pitești, Romania
- Membru în Technical Program Committee for 3ICT2021 - *International Conference on Innovation and Intelligence for Informatics, Computing and Technologies (3ICT)*, 29-30 September 2021 - Bahrain, University of Bahrain

- Recenzent solicitat de de organizatorii Conferinței IEEE BlackSeaCom 2021, May24-28, Virtual Conference

#### **D. Condurache**

- Redactor șef - *Buletinul Institutului Politehnic din Iasi, seria Matematică, Mecanică Teoretică, Fizică*
- Topical editor - *Mechanical Sciences*
- Member of International Advisory Committee - *The Romanian Journal of Technical Sciences, seria Applied Mechanics*
- Member of the editorial team - *Parana Journal of Science and Education (PJSE)*, ISSN 2447-6153-
- Editorial board member - *Romanian Journal of Mechanics* ISSN 2537 -5229-
- Referent la revistele: *Heliyon, Acta Astronautica, Mathematical Problems in Engineering, Measurement, Journal of Mechanical Design, IEEE Robotics and Automation Letters, Astrophysics and Space Science, Advances in Space Research, Mathematical Methods in the Applied Sciences, Advances in Applied Clifford Algebras, Mechanism and Machine Theory, The Journal of the Franklin Institute, Celestial Mechanics and Dynamical Astronomy, The Journal of the Astronautical Sciences, Journal of Guidance Control and Dynamics, International Journal of Non-linear Mechanics, Meccanica, Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences* (40 de recenzii în anul 2021 conform <https://publons.com/researcher/1423702/daniel-condurache/>)

#### **D. Cristea**

- Organising Committee member at the 16th international conference *Linguistic Resources and Tools for Processing Natural Language* & the 1st DeLORo workshop, 13-14 Dec. 2021, Iași and online.
- Program Committee member for the track *Resource and Evaluation* at ACL-IJCNLP, Aug. 2021.
- Program Committee member at the 2nd international conference on *Advanced Natural Language Processing* (AdNLP 2021), July 24-25.
- Reviewer for the *International Journal of Speech Technology*.
- Program Committee member at EMNLP-CRAC.
- Reviewer for the *Romanian Journal of Information and Science Technology* of the Romanian Academy.
- Reviewer for the *Computer Science Journal of Moldova*.
- Reviewer for *Studies in Informatics and Control*, ISSN: 1220-1766.
- Chair at the international online workshop *Vernacular Bible(s): From Manuscript to the Digital Edition*, September 9.

#### **A. Dima**

- Membru în Colectivul editorial al revistei *ASTR Journal of Engineering Sciences and Innovation* (JESI).

#### **L. Goraș**

- Organizator principal al celei de a 15-a ediții a *Simpozionului Internațional de Semnale, Circuite și Sisteme*, ISSCS 2021, Iași 15-16 iulie 2021
- Membru în Colectivul editorial al revistei *International Journal of Neural Networks and Applications*
- Membru în Colectivul editorial al revistei *Acta Technica Napocensis (Electronics and Telecommunications)*
- Referent solicitat de revistele *IEEE Trans Circuits and Systems, IEEE Trans Biomedical Engineering, IEEE Journal of Solid State Circuits, Proceedings of the Romanian Academy, Series A*

- Recenzent solicitat de revista *Zentralblatt für Mathematik*
- Membru în comitetul editorial al IEEE CAS-Magazine

#### **C. Lazăr**

- Membru în Colectivul editorial al Revistei *The Annals of "Dunarea de Jos" University of Galati, Fascicle III: Electrotechnics, Electronics, Automatic Control, Informatics*
- Membru în Colectivul editorial al Revistei *Buletinul Institutului Politehnic din Iași, Electrotechnics, Energetics, Electronics Section*
- Membru în Comitetul de Program al Conferinței *25th International Conference on System Theory, Control and Computing (ICSTCC)*, October 20-23, 2021, Iași
- Referent solicitat de revista *Control Engineering and Applied Informatics*
- Referent solicitat de organizatorii conferințelor:
  - 2021 *European Control Conference*, June 29 – July 2, 2021, Rotterdam
  - 2021 *19th Mediterranean Conference on Control and Automation (MED)*, 22-25 June, 2021, Puglia, Italy
  - 2021 *23rd International Conference on Control Systems and Computer Science (CSCS)*, 26-28 May, 2021, Bucharest
  - 2021 *25th International Conference on System Theory, Control and Computing (ICSTCC)*, 20-23, October, 2021, Iasi,

#### **C. Munteanu**

- Guest Editor - Special Issue "Advance Materials for Multifunctional Applications", , *Materials*
- Guest Editor - Special Issue "Thermal Spray Coatings", *Coatings*
- Guest Editor - Special Issue "Biodegradable and Biocompatible Metallic Alloys", *Crystals*
- Recenzor de lucrări publicate în reviste internaționale ISI: *Materials, Crystals, Metals, Applied Surface Science, Sensors, Arabian Journal of Chemistry, Surface and Interfaces, Materials and Science & Engineering, Surface & Coatings Technology, Coatings, Journal of Textiles Materials.*

#### **O. Păstrăvanu**

- Membru în Colectivul editorial al revistei *Control Engineering and Applied Informatics*
- Membru în Colectivul editorial al revistei *Revista Română de Informatică și Automatică*
- Membru în Comitetul de program al conferinței *25th International Conference on System Theory, Control and Computing, ICSTCC 2021 (IEEE Xplore, ISI Clarivate)*
- Membru în Comitetul de program al conferinței *15th International Symposium on Applied Computational Intelligence SACI 2021 (IEEE Xplore, ISI Clarivate)*
- Member of Track 4 Technical program committee at *ETFA'2021, 26th IEEE International Conference on Emerging Technologies and Factory Automation, Västerås, Sweden (IEEE Xplore, ISI Clarivate)*
- Referent pentru lucrări expediate spre publicare la *IEEE Trans. Automatic Control; Computer Science Journal of Moldova, Mediterranean Conference on Control and Automation (MED 21)*, Puglia, Italia,
- Recenzent solicitat de revistele *Zentralblatt für Mathematik, Mathematical Reviews*

#### **V. I. Popa**

- Editor șef al revistei *Cellulose Chemistry and Technology* (revistă a Academiei Romane)

#### **N. Țăranu**

- Editor șef al revistei *Buletinul Institutului Politehnic din Iasi, Secția Construcții și Arhitectura.*

- Membru în Colectivul editorial al revistei *Annals of the Academy of Romanian Scientists Series on Engineering Sciences*.
- Member of the Scientific Committee of "The 8th edition of ModTech International Conference", 22-25 June, 2021, online edition.
- Member of the International Scientific Committee "XXI International Scientific Conference VSU'2021", *Construction and Architecture*, 14-16 October 2021, Sofia.
- Member of the Honorary Committee "Computational civil engineering", 27-29 May 2021, Iași.
- Member of the Academic Scientific Committee "1st Croatian Conference on Earthquake Engineering 1CroCee", 22-24 March 2021, Zagreb.
- Member of the Scientific Committee "CNM17: a XVII-a Conferință Națională de Construcții Metalice", 28-29 October 2021, Bucharest.

#### **M. Voicu**

- Membru în Colectivul editorial al revistei *Proceedings of the Romanian Academy Series A: Mathematics, Physics, Technical Sciences, Information Science*
- Membru în Colectivul editorial al revistei *Control Engineering and Applied Informatics* (CEAI)
- Membru în Colectivul editorial al revistei *Romanian Journal of Information Science and Technology* (ROMJIST)
- Membru în Colectivul editorial al revistei *ASTR Journal of Engineering Sciences and Innovation* (JESI).
- Membru în Colectivul editorial al revistei *Revista Română de Informatică și Automatică*
- Membru în Colectivul editorial al revistei *Transactions on Automatic Control and Computer Science, Univ. „Politehnica” din Timișoara*
- Membru în Colectivul editorial al revistei *Quality Assurance Review for Higher Education*, editată de ARACIS
- General Chair *25<sup>th</sup> IEEE International Conference on System Theory, Control and Computing*, October, 2021, desfășurată online, Romania; sponsorizată tehnic de IEEE Control Systems Society; inclusă în baza de date IEEE Xplore
- Referent pentru lucrări expediate spre publicare la revista *Studies in Informatics and Control* (ICI București), *Mediterranean Conference on Control and Automation* (MED 21), Puglia, Italia, *International Conference on Control Systems and Computer Science*, Universitatea Politehnica București.
- Recenzent solicitat de revistele *Zentralblatt für Mathematik*, *Mathematical Reviews*.

#### **Președinte,**

Prof. univ. dr. ing. Mihail Voicu  
m.c. al Academiei Române

#### **Secretar,**

Prof. univ. dr. ing. Octavian Păstrăvanu