

Nr. Înreg.
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**RAPORT PRIVIND ACTIVITATEA DESFASURATA IN INSTITUTUL DE
CERCETARE- DEZVOLTARE - INOVARE IN STIINTE TEHNICE SI NATURALE IN
ANUL 2016**

În anul 2016 ICDISTN conform unei Hotărâri de Senat a cuprins doar 2 centre de Cercetare și anume: Centrul de Cercetare în Științe Tehnice și Naturale și Centrul de Cercetare Sisteme Inteligente.

În cadrul centrelor s-au derulat activități de cercetare intense în cadrul proiectelor aflate în derulare astfel :

A. Centrul de Cercetare în Științe Tehnice și Naturale

Proiecte în derulare:

- 1) PN-II-PT-PCCA-2013-4-0191 Interactomica galactozaminoglicanilor în matricea extracelulară prin spectrometrie de masă avansată, (Valoare proiect: 1.450.000 RON). Iulie 2014-septembrie 2017-
- 2) PN-II-RU-TE-2014-4-1370, Contract 334/01.10.2015 având titlul "Tehnologii ecologice de tratare a materialelor textile celulozice, lignocelulozice și amestecuri ale acestora".
- 3) Contract: 28 PTE/2016, Cod Depunere: PN-III-P2-2.1-PTE-2016-0217, iTOP.
- 4) Premierea rezultatelor cercetării în Universitatea Aurel Vlaicu Arad, martie 2016, 20 lucrări ISI.
- 5) PI, Bridge Grant PN-III-P2-2.1-BG-2016-0297 (Contract 48BG/2016), ANCS-UEFISCDI: Optomechatronic choppers with rotational discs and shafts with windows for metrological, biomedical, and laser manufacturing applications (OP-CHOP) (102k€), Oct. 2016-Oct. 2018; <http://3om-group-optomechatronics.ro/bg297/>
- 6) Responsible for Partner, Transfer to Industry Grant PN-III-P2-2.1-PTE-2016-0181 (Contract 24PTE / 2016), ANCS-UEFISCDI: Handheld scanning probes with 1D and 2D galvoscaners for biomedical and industrial investigations using Optical Coherence Tomography (OCT) (1D2D-GS-OCT), PI: M. Vlasici – SC Inteliform SRL Timisoara (435k€), Oct. 2016-Oct. 2018; <http://3om-group-optomechatronics.ro/ptep181/>
- 7) Responsible for the Physics Work Package (1/4), Grant POC-A1-A1.1.3-E-2015, funded by the European Union (through European Regional Development Funds Structural Operational Program “Competitiveness” Priority axis 1, Operation 1.1.4. Contract Number 30/2016): *New nano-ARCHITECTURES OF BIOLOGICAL INSPIRATION OF CELULAR TYPE (NanoArt Bio Cell)*, PI: Prof. V. Beiu (2M€), Aug. 2016 - Aug. 2020;
- 8) PI, PARTNERSHIP Grant PN-II-PT-PCCA-2011-3.2-1682 (Contract 22/2012) ANCS-UEFISCDI Optical Coherence Tomography (OCT) systems with handheld and endoscope probes for real-time investigations in material studies and for in vivo medical imaging (5 institutions, 36 researchers), July 2012-Dec. 2016 (950k€); 16 journal papers in ISI WoS, ΣIF=30.822; <http://3om-group-optomechatronics.ro/pp1682/>.
- 9) PI, Grant PN-III-P1-1.1-MCD-2016-0077, ANCS-UEFISCDI to support the visit of Dr. G. Dobre (Univ. of Kent, Canterbury, UK) to UAV Arad (~1.3k€), [link](#), Nov. 2016; Travel grant.
- 10) PI, Support from ANCS to participate at the International Conference “Diaspora in Scientific Research and Higher Education in Romania,” Timisoara 2016; Travel grant.

Noi propuneri de proiecte:

- 1) Proiect câștigat, necontractat. Competitie cooperare bilaterala Romania – Franta (Programul de Acțiuni Integrate Brancusi) - Valorificarea subproduselor de vinificație - aplicații pentru tratamentul apelor reziduale (FOODVALUE) – parteneriat cu University of Perpignan Via Domitia Biosensors Analysis Environment, International Centre of Biodynamics, Bucharest
- 2) Proiect depus, nefinanțat. M-ERA NET - Nanocellulose-based conductive fibres for textile energy storage devices (CELLTEX).
- 3) PN-III-P2-2.1-PED-2016-1074, „Optimizarea procesului de injectare a pieselor din mase plastice cu conținut de material polimeric recuperat (MPR) prin utilizarea programelor de modelare matematică (optimizare). Proiect necâștigat.

Brevete

- 1) EP2703555 - Functionalization process of cellulosic textile materials (fibres, yarns, fabrics and knitted fabrics) such as:cotton, hemp, flax, ramie, nettle, etc., and different mixtures of such fibres SIRGHIE C, BOTAR A
- 2) Retting procedure for bast plants such as:flax, hemp, jute, etc. EP 2703527 SÎRGHIE C, RADU D G, MUNTEANU F D, PAG A, DOCHIA M, TOMESCU D.
- 3) Duma V.-F., Nicolov M. F, Mnerie C., Szantho L., Optical modulator with rotation movement, Romanian Patent RO 126505/2016;

Articole ISI

1. Florina Copaciu, Ocsana Opreș, Ülo Niinemets, Lucian Copolovici, Toxic influence of key organic soil pollutants on the total flavonoid content in wheat leaves, *Water Air and Soil Pollution*, 2016, 227, 196 (I.F. = 1.685).
2. Ildikó Lung, Maria-Loredana Soran, Ocsana Opreș, Mihail Radu Cătălin Trușcă, Ülo Niinemets, Lucian Copolovici, Induction of stress volatiles and changes in essential oil content and composition upon microwave exposure in the aromatic plant *Ocimum basilicum*, *Science of the Total Environment*, 2016, 569, 489-495 (I.F. = 3.976).
3. Kaia Kask, Astrid Kännaste, Eero Talts, Lucian Copolovici, Ülo Niinemets, How specialized volatiles respond to chronic, and short-term physiological and shock heat stress in *Brassica nigra*, *Plant Cell and Environment*, 2016, 39, 2027-2042 (I.F. = 6.169).
4. Pasi Yli-Pirilä, Lucian Copolovici, Astrid Kannaste, Steffen Noe, James Blande, Santtu Mikkonen, Tero Klemola, Juha Pulkkinen, Annele Virtanen, Ari Laaksonen, Jorma Joutsensaari, Ülo Niinemets, Jarmo Holopainen, Herbivory by an outbreaking moth increases emissions of biogenic volatiles and leads to enhanced secondary organic aerosol formation capacity, *Environmental Science & Technology*, 2016, 50, 11501-11510 DOI: 10.1021/acs.est.6b02800 (I.F. = 5.393).
5. Cristian Rus, Ersilia Alexa, Renata Sumalan, Atena Galuscan, Adina Dumitrache, Ilinca M. Imbrea, Ioan Sarac, Andreea Pag, Georgeta Pop, Antifungal activity and Chemical Composition of *Origanum Vulgare L.* Essential Oil, *Revista de Chimie*, 67(11), pp. 2287-2290 (2016). IF=0.311
6. Maries, G. R. E.; Chira, D.; Novac, O.; Sirghie, C.; Chambre, D. R.; Tomescu, D., The Influence of the Processing Temperature by Injection and of Subsequent Pressure on Some

- Mechanical Properties of HDPE, PMMA, PC plus FABS, Through Methods of Determining the Flexural Properties. *Materiale Plastice* 53, (3), 458-464.
7. M. Sarbu, A.C. Robu, R.M. Ghiulai, Ž. Vukelić, D.E. Clemmer, A.D. Zamfir, Electrospray ionization ion mobility mass spectrometry of human brain gangliosides, *Anal. Chem.* 88, 5166-5178, 2016.
 8. A.C. Robu, Ž. Vukelić, C. Schiopu, C. Florina, A.D. Zamfir, Mass spectrometry of gangliosides in extracranial tumors: application to adrenal neuroblastoma, *Anal. Biochem.* 509, 1-11, 2016.
 9. A. Cata, M.N. Stefanut, R. Pop, C. Tanasie, C. Mosoarca, A.D. Zamfir, Evaluation of Antioxidant Activities of some small fruits containing anthocyanins using electrochemical and chemical methods, *Croat. Chem. Acta.* 89, 37-48, 2016.
 10. A.D. Zamfir, Applications of capillary electrophoresis electrospray ionization mass spectrometry in glycosaminoglycan analysis, *Electrophoresis* 37, 973-986, 2016.
 11. Cogliati A., Canavesi C.*, Hayes A., Tankam P., Duma V.-F., Santhanam A., Thompson K. P., and Rolland J. P., MEMS-based handheld scanning probe with pre-shaped input signals for distortion-free images in Gabor-Domain Optical Coherence Microscopy, *Optics Express* 24(12), 13365-13374 (2016); ISSN 1094-4087; ISI IF 3.148/2015; <http://dx.doi.org/10.1364/OE.24.013365> - also selected & published in *Virtual J. for Biomedical Optics* 11(7), ISSN 1931-1532 (2016); OPEN ACCESS; Q1
 12. Craciunescu E., Sinescu C.*, Negrutiu M. L., Pop D. M., Lauer H.-C., Rominu M., Hutiu Gh., Bunoiu M., Duma V.-F.*, and Antoniac I., Shear Bond Strength Tests of Zirconia Veneering Ceramics after Chipping Repair, *J. of Adhesion Science and Technology* 30(6), 666-676 (2016); ISSN 0169-4243; ISI IF 0.863/2015; <http://dx.doi.org/10.1080/01694243.2015.1117304>; Q4

ISI proceedings

- 1) Anca Mot, Dana Copolovici, Emilian Matosa, Ghiocel Mot, Lucian Copolovici, The chemical composition and pharmaceutical usage of Hawthorn (*Crataegus monogyna* L.) extracts, *European Biotechnology Conference*, 5-7 May 2016, published in: *Journal of Biotechnology*, 231, S59-S59.
- 2) Mihaela Dochia, Cecilia Sîrghie, Monica Pustianu, *Part II. Study regarding the influence of bioscouring treatment on 60 % cotton + 40 % cottonised flax materials followed by a whitening treatment using alternative methods*, *Analele Universităţii din Oradea, Fascicola Textile&Pielarie*, 2016, vol XVII, p. 91-117, P-ISSN: 1843-813X.
- 3) Monica Pustianu, Cecilia Sîrghie, Gabriela Böhm-Révész, Mihaela Dochia, *Part I. study regarding the optimization of the bioscouring treatment in ultrasound on 60 % cotton + 40 % cottonised flax materials*, *Analele Universităţii din Oradea, Fascicola Textile&Pielarie*, 2016, vol XVII, p. 89-111, P-ISSN: 1843-813X.
- 4) M. Dochia, S. Gavrilaş, M. Pustianu, D. Tomescu, D.M. Copolovici, Comparative study regarding the influence of the complexing agents EDTA and sodium citrate on the 50% flax-50% cotton fabrics during the bioscouring treatment, 16th International Multidisciplinary Scientific Geoconference SGEM 2016, Book 6, Nano, Bio and Green-Technologies for a Sustainable Future, Conference Proceedings, Volume III, 2016, ISBN 978-619-7105-79-7, ISSN 1314-2704, DOI 10.5593/sgem2016HB63, 223-230, lucrare în curs de indexare.
- 5) Beiu R.*, Mnerie C. A., Duma V.-F., Analysis of Curved Shape Micro-mirrors For On-Chip Communication, *Proc. SPIE*, Vol. 10010, 100101Y, SPIE 8th Intl' Conference Advanced Topics in Optoelectronics, Microelectronics and Nanotechnologies (ATOM-N), Constanta (Romania), Aug. 25-28, 2016; <http://dx.doi.org/10.1117/12.2246019>

- 6) Sinescu C., Duma V.-F.*, Canjau S., Dobre G., Demian D., Cernat R., Negrutiu M. L., Todea C., Topala F. I., Hutiu Gh., Bradu A., Podoleanu A. Gh., Dentistry investigations of teeth and dental prostheses using OCT, *Proc. SPIE*, Vol. 9887, 98870B, J. Popp, V. V. Tuchin, D. L. Matthews, F. S. Pavone, Eds., *SPIE Photonics Europe (Biophotonics: Photonic Solutions for Better Health Care V)*, Brussels (Belgium), Apr. 27, 2016; <http://dx.doi.org/10.1117/12.2227443>
- 7) Stan A.-T., Cojocariu A.-C., Antal A. A., Topala F., Sinescu C., Negrutiu M. L., Duma V.-F., and Podoleanu A. Gh., Marginal integrity evaluation of dental composite using optical coherence tomography, *Proc. SPIE*, Vol. 9670, 967012, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry - European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM, May 7-9, 2015)*, ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest (Romania), 2016; doi: [10.1117/12.2192855](https://doi.org/10.1117/12.2192855)
- 8) Zaharia C., Gabor A., Topala F. I., Negrutiu M. L., Sinescu C., Duma V.-F., Podoleanu A. Gh., OCT Evaluation of Zirconia Fixed Partial Prosthesis Processed with a Conventional CAD/CAM Technology, *Proc. SPIE*, Vol. 9670, 967010, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry - European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM, May 7-9, 2015)*, ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest (Romania), 2016; doi: [10.1117/12.2192980](https://doi.org/10.1117/12.2192980)
- 9) Pribac V., Todea C., Duma V.-F.*, Low-Level Laser Therapy (LLLT) for periodontal pockets. A preliminary study, *Proc. SPIE*, Vol. 9670, 96700K, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry - European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM, May 7-9, 2015)*, ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest 2016; doi: [10.1117/12.2192010](https://doi.org/10.1117/12.2192010)
- 10) Marcauteanu C., Sinescu C., Negrutiu M. L., Stoica E. T., Duma V.-F., Bradu A., Podoleanu A. Gh., Evaluation of Tizian overlays by means of a swept source optical coherence tomography system, *Proc. SPIE*, Vol. 9670, 96700X, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry - European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM, May 7-9, 2015)*, ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest (Romania), 2016; doi: [10.1117/12.2191905](https://doi.org/10.1117/12.2191905)
- 11) Stoica E. T., Marcauteanu C., Sinescu C., Negrutiu M. L., Duma V.-F., Bradu A., Podoleanu A. Gh., All ceramic “table tops” analyzed using swept source optical coherence tomography, *Proc. SPIE*, Vol. 9670, 967011, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry - European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM, May 7-9, 2015)*, ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest (Romania), 2016; doi: [10.1117/12.2191909](https://doi.org/10.1117/12.2191909)
- 12) Dughir C., Popovschi A. M., Cojocariu, A. C., Topala F. I., Negrutiu M. L., Sinescu C., de Sabata A., Duma V.-F.*, Complete Denture Base Assessment using Holograms for Dimensional Alterations after Different Activation Methods, *Proc. SPIE*, Vol. 9670, 967013, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry-European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM)*, May 7-9, 2015, ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest 2016; doi: [10.1117/12.2191886](https://doi.org/10.1117/12.2191886)
- 13) Negrutiu M. L.*, Sinescu C., Craciunescu E. L., Topala F. I., Cojocariu A. C., Duma V.-F., and Podoleanu A. Gh., Assessment of Dental Plaque by Optoelectronic Methods, *Proc. SPIE*, Vol. 9670, 96700W, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry - European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM)*, May 7-9, 2015), ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest (Romania), 2016; doi: [10.1117/12.2191640](https://doi.org/10.1117/12.2191640)
- 14) Duma V.-F.*, Demian D., Sinescu C., Negrutiu M. L., Cernat R., Topala F. I., Hutiu Gh., Bradu A., Podoleanu A. Gh., Handheld scanning probes for OCT: Developments, applications and perspectives, *Proc. SPIE*, Vol. 9670, 96700V, Todea C., Podoleanu A., Duma V.-F., Eds., *5th World Federation of Lasers in Dentistry-European Division (WFLD-*

- ED) & 6th Intl Conference Lasers in Medicine (ICLM), May 7-9, 2015, ISSN 0277-786X, ISBN 978-1-62841-893-4, Bucharest 2016, *Invited Paper*; doi: [10.1117/12.2178590](https://doi.org/10.1117/12.2178590)
- 15) Gabor A.*, Jivanescu A., Zaharia C., Hategan S., Topala F. I., Negrutiu M. L., Sinescu C., Duma V.-F., Podoleanu A. Gh., OCT evaluation of single ceramic crowns made with conventional and chair-side CAD/CAM technology, *Proc. SPIE*, Vol. 9670, 96700Z, Todea C., Podoleanu A., Duma V.-F., Eds., 5th World Federation of Lasers in Dentistry - European Division (WFLD-ED) & 6th Intl Conference Lasers in Medicine (ICLM, May 7-9, 2015), ISSN 1605-7422, Bucharest (Romania), 2016; doi: [10.1117/12.2191907](https://doi.org/10.1117/12.2191907)

Capitol de carte

- 1) Lucian Copolovici, Ulo Niinemets, *Environmental impacts on plant volatile emission*, in: *Deciphering chemical language of plant communication*, James D. Blande, R. Glinwood Ed., Springer, New York, pp. 35-59, 2016, ISBN 978-3-319-33498-1.
- 2) Popescu L., Robu A.C., Zamfir A.D., Sustainable nanosystem development for mass spectrometry. Applications in proteomics and glycomics, în: *Sustainable Nanosystems Development, Properties, and Applications*, Ed. IGI Global, Hershey, PA, USA, ISSN:2327-5448, pp. 535-568, 2016.
- 3) Todea C., Podoleanu A. Gh., and Duma V.-F. (Eds.), *Proceedings of SPIE [ISI]*, Vol. 9670 - PROGRESS IN BIOMEDICAL OPTICS AND IMAGING 16(62), 5th Congress of the World Federation of Lasers in Dentistry-European Division (WFLD-ED) & 6th Intl Conference on Lasers in Medicine: High-end Medicine Based on Laser and Biotechnologies, Bucharest (Romania), May 7-9, 2015 (SPIE Press, Bellingham, WA, USA, 2016), ISSN 1605-7422, ISBN 9781628418934, 300 pages; 37 papers (ISI Accession Number: WOS); <http://spie.org/Publications/Proceedings/Volume/9670>

Teze de doctorat

Alexandru Cristian Tomescu, "Studii privind proprietatile antifungice, antimicrobiene si antioxidante a uleiurilor esentiale din plante medicinale (familia Lamiaceae), Universitatea de Stiinte Agricole și Medicina Veterinară a Banatului din Timișoara, Conducator stiintific Prof. Dr. Georgeta Pop.

Conferinte:

1. Lucian Copolovici, Ülo Niinemets, Environment affects the plants but the environment could be influenced by compounds emitted by plants?, 11th International Conference ELSEDIMA "Environmental Legislation, Safety Engineering and Disaster Management" Building Disaster Resilience in a Changing World, 26-28 May, 2016, Cluj-Napoca, Romania
2. Monica Taschina, Lucian Copolovici, The influence of acetaminophen on physiological characteristics and volatile organic compounds in *Phaseolus vulgaris*, 11th International Conference ELSEDIMA "Environmental Legislation, Safety Engineering and Disaster Management" Building Disaster Resilience in a Changing World, 26-28 May, 2016, Cluj-Napoca, Romania
3. Dennis N. Iosif, Lucian Copolovici, Dana M. Copolovici, Anthropogenic Aromatic Hydrocarbons in Arad Atmosphere, 11th International Conference ELSEDIMA "Environmental Legislation, Safety Engineering and Disaster Management" Building Disaster Resilience in a Changing World, 26-28 May, 2016, Cluj-Napoca, Romania
4. Dana M. Copolovici and Lucian Copolovici, Volatile Organic Compounds Emission from Cars Indoor and Their Implication to Human Health, 11th International Conference ELSEDIMA "Environmental Legislation, Safety Engineering and Disaster Management" Building Disaster Resilience in a Changing World, 26-28 May, 2016, Cluj-Napoca, Romania

5. Lucian Copolovici and Ulo Niinemets, Environmental effect on emission of volatile organic compounds from plants, *Agriculture for Life, Life for Agriculture*, June 9 - 11, 2016, Bucharest, Romania
6. Dana Copolovici, Dana Radu, Georgeta Pop, Lucian Copolovici, Chemical analysis and antimicrobial activity of *Lavandula officinalis* L. essential oils, *Agriculture for Life, Life for Agriculture*, June 9 - 11, 2016, Bucharest, Romania
7. Lucian Copolovici and Ulo Niinemets, Increasing of CO₂ concentration: good or bad effect on the environment? The XXXIV-th Romanian Chemistry Conference, 4 -7 octombrie, Calimanesti-Caciulata, 2016.
8. Dana M. Copolovici, Denissa A. Pop, Alina M. Ban, Lucian Copolovici, Chemical analysis of italian and portuguese cheese, The XXXIV-th Romanian Chemistry Conference, 4 -7 octombrie, Calimanesti-Caciulata, 2016.
9. Lucian Copolovici, Ulo Niinemets, New insights into volatile organic compounds emissions and climate change, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
10. Denissa A. Pop, Alina Ban, Lucian Copolovici, Dana Copolovici, Chromatographic analysis of some food products, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
11. Adina Bodescu, Daniel Tomescu, Andreea Pag, Lucian Copolovici, The influence of drought on Timis County forest, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
12. Lucian Copolovici, Dumitru Condrat, Nicolae Dinca, Thermochemical data obtained by quantum chemical calculation for identification by differential mass spectrometry of some biologically active compounds from lavender oil, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
13. Dumitru Condrat, Dana Copolovici, Lucian Copolovici, Analysis of anthocyanidins in *Crataegus monogyna* and *Rosa canina* ethanolic extracts, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
14. Dennis N. Iosif, Lucian Copolovici, Dana Copolovici, Determination of atmospheric pollutants in Arad city, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
15. Simona Gavrilas, Ana-Mihaela Dochia, Monica Pustianu, Daniel Tomescu, calcium spectrophotometric determination from flax-cotton fabrics after bioscouring treatment, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
16. Dorina Chambre, Adina-Maria Bodescu, Cecilia Sirghie, Iolanda Tolan, Petru Budrugaec, Non-isothermal decomposition kinetics of oxo-diperoxo-molybdenum(VI)-potassium oxalate, *6th International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania
17. Treatment optimization for bioscouring in ultrasound of cotton/cottonised hemp blended fabrics. Pustianu Monica^{1,2}, Dochia Mihaela², Sirghie Cecilia², Gavrilas Simona³, Tomescu Daniel².
18. M. Sarbu, A.C. Robu, M. Trion, D.E. Clemmer, A.D. Zamfir, IMS MS and MS/MS of human brain gangliosides, Austrian Mass Spectrometry Forum, Viena, Austria.
19. A.C. Robu, L. Popescu, F. Capitan, A.D. Zamfir, ChipESI MSⁿ of Ctb5 monomers-G1 ganglioside complexes, Austrian Mass Spectrometry Forum, Viena, Austria.
20. A.D. Zamfir, A.C. Robu, F. Capitan, C. Schiopu, Neuroblastoma ganglioside analysis by chip-ESI MS, Austrian Mass Spectrometry Forum, Viena, Austria
21. M. Sarbu, F. Munteanu, D.E. Clemmer, A.D. Zamfir, Ion mobility mass spectrometry of glycolipids, 13th International Conference on Nanosciences & Nanotechnologies (NN16), Thessaloniki, Grecia.

22. A.C. Robu, L. Popescu, F.D. Munteanu, A.D. Zamfir, Glycomics of GAG oligosaccharides by high-performance mass spectrometry, 13th International Conference on Nanosciences & Nanotechnologies (NN16), Thessaloniki, Grecia.
23. A.D. Zamfir, A.C. Robu, M. Trion, Cancer biomarker discovery by chip-nano electrospray mass spectrometry: application to human neuroblastoma, 13th International Conference on Nanosciences & Nanotechnologies (NN16), Thessaloniki, Grecia.
24. M. Sarbu, M. Trion, L. Dehelean, A.C. Robu, F. Munteanu, A.D. Zamfir, Development of the advanced mass spectrometry for mapping and structural analysis of human brain gangliosides, 22nd International Symposium on Analytical and Environmental Problems, Szeged, Ungaria.
25. A.C. Robu, L. Popescu, F.D. Munteanu, A.D. Zamfir, Assessment of protein-glycan interaction by chip-based mass spectrometry, 22nd International Symposium on Analytical and Environmental Problems, Szeged, Ungaria
26. L. Popescu, A.C. Robu, F.D. Munteanu, A.D. Zamfir, Determination of noncovalent FGF2-galactosaminoglycan interaction by chip-based high-resolution mass spectrometry, a XXXIV-a Conferință Națională de Chimie, Căciulata, Vâlcea
27. M. Sarbu, D.E. Clemmer, A.D. Zamfir, Glycopeptides biomarker discovery in Schindler disease by ion mobility tandem mass spectrometry, 10th Central and Eastern European Proteomic Conference, Budapesta, Ungaria
28. L. Popescu, A.C. Robu, C. Munteanu, A.D. Zamfir, Glycomics of brain glycosaminoglycans by high resolution tandem mass spectrometry, 10th Central and Eastern European Proteomic Conference, Budapesta, Ungaria.
29. M. Pustianu, M. Dochia, C. Sîrghie, S. Gavrilăș, D. Tomescu
Treatment optimization for bioscouring in ultrasound of cotton/cottonised hemp blended fabrics, 7th International Workshop on Soft Computing Applications (SOFA 2016)", 24-26 August 2016, *lucrare în curs de indexare*. Copolovici D.M
30. Determination of the residual pectin from a bioscoured flax/cotton fabric using ruthenium red method, Dochia. M, Gavrilăș S, Pustianu M, Sîrghie C, 6th *International Symposium Research and Education in Innovation Era*, December 08-10, 2016, Arad, Romania.
Sîrghie C, Copolovici L, Munteanu F.D, Zamfir A, Balas V, Excelența în cercetare la UAV, prezentare orală, Workshopul organizat de Universitatea "Aurel Vlaicu" din Arad în data de 11 noiembrie 2016 se intitulează "Excelența în cercetarea științifică din Universitatea "Aurel Vlaicu" Arad - prezent și perspective".
31. M. Bălaș, C. Sîrghie, M. Pustianu, M. Dochia, S. Gavrilăș, D. Tomescu, *Fuzzy Methods Applied on the Control of Textile Biotechnologies* – lucrare comunicată, 7th International Workshop on Soft Computing Applications (SOFA 2016)", 24-26 August 2016.
32. M. Dochia, S. Gavrilăș, M. Pustianu, D. Tomescu, *Physico-chemical parameters of the wastewaters resulted from the bioscouring treatment of the cellulosic/lignocellulosic fabrics – prezentare*. A XXXIV-a Conferință Națională de Chimie, 4-7 Octombrie 2016, Secțiunea 5, pagina 9.
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34. Mnerie C., Duma V.-F.*, Galvanometer scanners for for Optical Coherence Tomography: Advanced control structures for increased precision and higher scanning speeds, *Proc. 4th ISREIE, Series: Engineering*, Arad (Romania), Dec. 8-10, 2016; ISSN 2065-2569 (Oral Presentation); accepted;
35. Demian D., Duma V.-F.*, Hutiu Gh., Podoleanu A. Gh., Handheld scanning probes for Optical Coherence Tomography, *Proc. 4th ISREIE, Series: Engineering*, Arad (Romania), Dec. 8-10, 2016; ISSN 2065-2569 (Oral Presentation); accepted;

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37. Hutiu Gh., Duma V.-F.*, Dimb A., Demian D., Bradu A., Podoleanu A. Gh., Evaluation of the roughness of surfaces using Optical Coherence Tomography, *Proc. 4th ISREIE, Series: Engineering*, Arad (Romania), Dec. 8-10, 2016; ISSN 2065-2569; accepted;
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39. Duma V.-F., Optical Attenuators with Translational Risley Prisms, *4th Advanced Electromagnetics Symposium (AES)*, 337-338, Said Zouhdi, Eva Rajo-Iglesias, Enrique Marquez, Eds., Malaga (Spain), July 7-11, **2016**; ISSN 2491-2417;
40. Hutiu Gh., Duma V.-F.*, Demian D., Bradu A., Podoleanu A., Analysis of metallic materials using Optical Coherence Tomography, 4th Intl Conference Advances in Engineering & Management (ADEM), Severin (Romania), Nov. 17-18, 2016 (Poster);
41. Hutiu Gh., Duma V.-F.*, Dimb A., Demian D., Bradu A., Podoleanu A., Optical Coherence Tomography for Non-Contact Roughness Measurements, RoMAT2016, Bucharest (Romania), Nov. 10-12, 2016 (Poster);
42. Craciunescu E.L., Pop D.M., Negrutiu M.L., Sinescu C., Duma V.-F., Podoleanu A., Importance of bleaching procedures for dental aesthetics, BIOMMEDD 2016, Constanta, Sept. 15-17, 2016 (Oral Presentation);
43. Everson M., Dobre G., Podoleanu A., Duma V.-F., A simulated investigation of the geometric and radiometric vignetting associated with a 72-facet, off axis, polygon mirror in Swept Source Optical Coherence Tomography, TIM 15-16 Physics Conf., Timisoara, May 26-28, 2016 (Oral Presentation);
44. Marcauteanu C., Stoica E. T., Sinescu C., Negrutiu M. L., Topala F., Mitroi F. E., Duma V.-F., Bradu A., Podoleanu A. Gh., Therapy of dental attrition on partial crowns, *21th Congress of Dental Medicine – Banat Dentistry Days*, Timisoara (Romania), May 19-21, 2016 (Oral Presentation);
45. Duma V.-F., Towards a Research Pole in Photonics in Western Romania. Achievements and Challenges, *Intl' Conf. Diaspora in Sc. Research and HE in Romania*, Timisoara, Apr. 25-28, 2016 (Oral Presentation);

Lucrări în Peer-reviewed Journals (neindexate)

Canjau S., Todea C. *, Sinescu C., Sirbu O., Moatar A., Bejinar C., Pricop M., Negrutiu M. L., Duma V.-F., *MicroRNAs used as biomarkers for the detection of oral malignancy*, Romanian J. of Stomatology 77(3), 69-74 (2016); ISSN 1843-0805;
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Prezentări și lecții invitate

- Duma V.-F.*, Hutiu Gh., Demian D., Bradu A., and Podoleanu A. Gh., Optical Coherence Tomography in Metallic Materials Characterization, RoMAT2016, Bucharest (Romania), Nov. 10-12, 2016;

- Sinescu C.*, Duma V.-F., Negrutiu M. L., Rominu M., Ionel R.C., and Podoleanu A. Gh., Evaluation of dental applications by Non-Invasive Methods, RoMAT2016, Bucharest (Romania), Nov. 10-12, 2016;
- Duma V.-F.*, Demian D., Dobre G., Cernat R., Sinescu C., Topala F., Hutiu Gh., Negrutiu M., Bradu A., and Podoleanu A. Gh., Optical Coherence Tomography: Handheld scanning probes with galvanometer scanners, TIM 15-16 Physics Conference, Timisoara (Romania), May 26-28, 2016;
- Duma V.-F., Optimization of biomedical systems for OCT with applications in Dental Medicine (Invited Lecture), 21th Congress of Dental Medicine – Banat Dentistry Days, Timisoara (Romania), May 21, 2016;

Stagii de cercetare:

Duma Virgil: [Univ. of Kent, Canterbury](#) (UK): Aug. 2016; [Univ. of Rochester, NY](#) (USA): Oct. 2016;

Premii:

- Excellent Paper Award - Oral Presentation: Beiu R.*, Mnerie C.A., Duma V.-F., Analysis of Curved Shape Micro-mirrors For On-Chip Communication, *SPIE ATOM-N*, Constanta (Romania), doi, 2016;
- ANCS Award PN-III-P1-1.1-PRECISI-2016-12189 for *Opt. Express* 24(12), 13365-13374 (2016) (1,300€);

B. Centru de Cercetare Sisteme Inteligente.

Proiecte în derulare:

- 1) ” NOI NANO-ARHITECTURI DE INSPIRATIE BIOLOGICA DE TIP CELULAR PENTRU CIRCUITE INTEGRATE”. Contract nr.30/01.09.2016.
- 2) Proiect cu Centrul Municipal de Cultura Arad - CMCA, Contract nr. 4862/10.08.2016, 23.000 lei, *Workshop International Soft Computing Applications*, Director de proiect – Valentina E. Balas, Proiect castigat prin competiție, <http://www.cmcarad.ro/wp-content/uploads/2016/03/centralizatorTINERET-2016-sesiunea-I-etapa-II.pdf>
- 3) Premiarea rezultatelor cercetarii in Universitatea Aurel Vlaicu Arad, martie 2016, 8 lucrari ISI - 2100 Euro.
- 4) Global Initiative for Academic Network (GIAN) programme approved by Union Cabinet in Higher Education aimed at tapping the talent pool of Scientist and Entrepreneur Internationally to encourage their engagement with the institutes of higher Education in India so as to augment the country’s existing academic resources, accelerate the pace of quality reform, and elevate India’s scientific and technological capacity to global excellence, IIT Kharagpur- the national coordinator. Funding of GIAN Activities: A lump-sum amount of up to US\$ 12000 for 20 to 28 hours of contact can be paid to the foreign experts covering their travel and honorarium. Local hospitality will be arranged by the Host Institution. The duration (number of weeks/days) can be mutually decided by the host institution and the visiting faculty. The funding for the courses by the Institutes shall be partially supported through various schemes including but not limited to the Plan / Non-Plan Funds of the Institute, other designated funds from TEQIP, UGC, AICTE, DST, DSIR and other Government entities, sponsorships from various agencies like industry / foundations, fees from participants and other sources. Câștigat - Mai 2016. <http://www.sici.org/programmes/details/global-initiative-for-academic-network-gian-programme/>

http://www.nits.ac.in/gian/Brochure_Fuzzy_Interpolative_Controller_and_Appln_V_Balas.pdf.

- 5) Premiara rezultatelor cercetarii UEFISCDI – articolul: *Multi-source information fusion model in rulebased Gaussian-shaped fuzzy control inference system incorporating Gaussian density function*, JOURNAL OF INTELLIGENT & FUZZY SYSTEMS, cod PN-III-P1-1.1PRECISI-201611086, septembrie 2016, 2.000 lei, http://uefiscdi.gov.ro/userfiles/file/PNCIDI%20III/P1_Resurse%20Umane/PRECISI_2016/PROCES%20EVALUARE/Rezultate/PRECISI_Rezultate%20eligibilitate_lista%2025_08_2016.pdf.
- 6) Premiara rezultatelor cercetarii UEFISCDI – articolul: *RAIRS2: A New Expert System for Diagnosing Tuberculosis with Real-World Tournament Selection Mechanism inside Artificial Immune Recognition System*, MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, cod PN-III-P1-1.1PRECISI-201612209, octombrie 2016, 1.000 lei, http://uefiscdi.gov.ro/userfiles/file/PNCIDI%20III/P1_Resurse%20Umane/PRECISI_2016/PROCES%20EVALUARE/Rezultate/PRECISI_2016_Rezultate%20eligibilitate_lista%204_28_10_2016.pdf.
- 7) Premiara rezultatelor cercetarii UEFISCDI – articolul: *Curvature manipulation of the spectrum of ValenceArousal-related fMRI dataset using Gaussian-shaped Fast Fourier Transform and its application to fuzzy KANSEI adjectives modeling*, NEUROCOMPUTING, cod PN-III-P1-1.1PRECISI-201612210, octombrie 2016, 1.000 lei, http://uefiscdi.gov.ro/userfiles/file/PNCIDI%20III/P1_Resurse%20Umane/PRECISI_2016/PROCES%20EVALUARE/Rezultate/PRECISI_2016_Rezultate%20eligibilitate_lista%204_28_10_2016.pdf.
- 8) Contract de finantare UEFISCDI - 48/29.11.2016 - Subprogram 1.1 - Resurse Umane - Proiecte de mobilitate pentru cercetatori cu experienta din diaspora – cod depunere PN-III-P1-1.1-MCD2016-0108, Responsabil din partea UAV – Valentina E. Balas, Cercetator din diaspora – Dan Ralescu, Universitatea Cincinnati, USA, Valoare - 2100 EURO, proiect obtinut prin competitie nationala.

Propuneri de noi proiecte

1. FUNDING APPLICATION FOR EXPERIMENTAL DEMONSTRATION PROJECTS PN-III-CERC-CO-PED-2016, *INTELLIGENT SYSTEM FOR MONITORING DEGENERATIVE BRAIN DISEASES USING WEARABLE SENSOR NETWORK (INSIDEBRAIN)*, Coordonator Oana Geman, Universitatea Stefan Cel mare din Suceava, Partener Universitatea Aurel Vlaicu din Arad, Responsabil Valentina E. Balas, 2016, Necastigat.
2. “The Prototype of an Energy Passive Greenhouse” (*Prototipul unei sere energetice pasive*) - *PNCIDI III P4 (Competitia Proiecte Complexe de Cercetare de Frontiera 2016)* – (in curs de evaluare).
3. “Energy Passive Greenhouse Prototype” - *PN-III-CERC-CO-PED-2016* – (respins).

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1. Saybani, Mahmoud Reza; Teh Ying Wah; Aghabozorgi, Saeed Reza; Shamshirband, Shahaboddin; Kiah, Miss Laiha Mat; Balas Valentina Emilia, *Diagnosing breast cancer with an improved artificial immune recognition system*, SOFT COMPUTING, Volume: 20, Issue: 10, 2016, Pages: 4069-4084, IF = 0,965
2. Hemanth, D. Jude; Anitha, J.; Balas, Valentina Emilia, *Fast and accurate fuzzy C-means algorithm for MR brain image segmentation* INTERNATIONAL JOURNAL OF

- IMAGING SYSTEMS AND TECHNOLOGY, Volume: 26, Issue: 3, 2016, Pages: 188-195, IF = 0,838
3. Hore, Sirshendu; Chatterjee, Sankhadeep; Sarkar, Sarbartha; Dey, Nilanjan; Ashour, Amira S.; Balas-Timar, Dana; Balas, Valentina E., *Neural-based prediction of structural failure of multistoried RC buildings*, STRUCTURAL ENGINEERING AND MECHANICS, Volume: 58, Issue: 3, 2016, Pages: 459-473, IF = 0,518
 4. Saybani, Mahmoud Reza; Shamshirband, Shahaboddin; Golzari, Shahram; Teh Ying Wah; Saeed, Aghabozorgi; Kiah, Miss Laiha Mat; Balas, Valentina Emilia, *RAIRS2 a new expert system for diagnosing tuberculosis with real-world tournament selection mechanism inside artificial immune recognition system*, MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, Volume: 54, Issue: 2-3, 2016, Pages: 385-399, IF = 1,039
 5. Venkatesh, Sivanandam; Ramkumar, Kannan; Guruprasath, Muralidharan; Srinivasan, Seshadhri; Balas, Valentina E (autor corespondent), *Generalized Predictive Controller for Ball Mill Grinding Circuit in the Presence of Feed-grindability Variations*, STUDIES IN INFORMATICS AND CONTROL, Volume: 25, Issue: 1, 2016, Pages: 29-38, IF = 0,134
 6. He, Ting; Cao, Luyin; Balas, Valentina E.; McCauley, Pamela ; Shi, Fuqian, *Curvature manipulation of the spectrum of Valence-Arousal-related fMRI dataset using Gaussian-shaped Fast Fourier Transform and its application to fuzzy KANSEI adjectives modeling*, NEUROCOMPUTING, Volume: 174, 2016, Pages: 1049-1059, Part: B, IF = 1,126
 7. Sidharthan, Rakesh Kumar; Kannan, Ramkumar; Srinivasan, Seshadhri; Balas, Valentina Emilia, *Stochastic Wheel-Slip Compensation Based Robot Localization and Mapping*, ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING, Volume: 16, Issue: 2, 2016, Pages: 25-3, IF = 0,170
 8. Muthukumar, N.; Srinivasan, Seshadhri; Ramkumar, K.; Kannan, K.; Balas, Valentina Emilia (autor corespondent), *Adaptive Model Predictive Controller for Web Transport Systems*, ACTA POLYTECHNICA HUNGARICA, Volume: 13, Issue: 3, 2016, Pages: 181-194, IF = 0,313
 9. Rakesh Kumar SIDHARTHAN, Ramkumar KANNAN, Seshadhri SRINIVASAN, Marius Mircea BALAS, *A Novel Keep Zero as Zero Polar Correlation Technique for Mobile Robot Localization using LIDAR*, Advances in Electrical and Computer Engineering, Volume 16, Number 4, 2016, pag. 15-22, ISI IF = 0,170

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1. P. Raja Rajeswari, S.V. Raju, A.S. Ashour, N. Dey, V.E. Balas, Active site cavities identification of amyloid beta precursor protein: Alzheimer disease study, 2016 IEEE 20th Jubilee International Conference on Intelligent Engineering Systems (INES), Budapest, Hungary, pag. 319-324.
2. K Jagatheesan, B Anand, Nillanjan Dey, Amira S Ashour, Cornel Barna, Valentina E Balas, Automatic Generation Control of an interconnected multi-area reheat thermal power systems with conventional proportional-integral controller considering various performance indices
IEEE 11th International Symposium on Applied Computational Intelligence and Informatics (SACI), 2016, Timisoara, Romania, pag 289-294
3. K. Jagatheesan; B. Anand; Nilanjan Dey, Amira S. Ashour, Valentina E. Balas, Conventional controller based AGC of multi-area Hydro-Thermal power systems , Conference: International Conference on Computer Communication and Informatics (ICCCI) Location: Coimbatore, INDIA, JAN 07-09, 2016, Sponsor(s): IEEE; IEEE Madras Sect; India Elect & Semicond Assoc; Sri Shakthi Inst Engn & Technol; Natl


Board Accredited; Excellence Educ; TUV Rheinland, Book Series: International Conference on Computer Communication and Informatics, DOI: [10.1109/ICCCI.2016.7480029](https://doi.org/10.1109/ICCCI.2016.7480029), ISBN 978-1-4673-6680-9, IEEE Xplore, pag. 560-565

Lucrări Conferințe

- 1 M.M. Balas and R.A. Boran. “Basic Expert System “, SOFA 2016.
- 2 M.M. Balas și A. Șofrag. “Multi Framing HDR for MRI Brain Images”, SOFA 2016.
- 3 M.M. Balas și E.V. Muller. “Fuzzy-Expert System for Investments in Winemaking”, SOFA 2016.


Profesori invitați: 3

 UNIVERSITATEA "AUREL VLAICU" DIN ARAD
FACULTATEA DE INGINERIE
SPECIALIZAREA AUTOMATICA SI INFORMATICA APLICATA
CENTRUL DE CERCETARE SISTEME INTELIGENTE
și


 AGIR Filiala Arad


Vă invită să participați
Luni 25 Aprilie 2016,
Ora 17:00, în Sala 311, Etajul III
Corpul M – Micalaca

la
CONFERINȚA
Changing Face of Education - Subjects and Methods




Prof. Sall Kumar Bose
Fellow, Royal Society of Biology, UK
Nanyang Technological University Singapore
School of Biological Sciences

 UNIVERSITATEA "AUREL VLAICU" DIN ARAD
FACULTATEA DE INGINERIE
Centrul de Cercetare SISTEME INTELIGENTE

 CNFIS

Vă invită să participați
Marti 06 Decembrie 2016,
Ora 11:00, în Amfiteatrul A2
Corpul M – Micalaca

la
CONFERINȚA
**Statistical Decision-Making in
Mixed Models of Uncertainty**
Susținută de către



Professor DAN A. RALESCU
University of Cincinnati U.S.A.

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 UNIVERSITATEA "AUREL VLAICU" DIN ARAD
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SPECIALIZAREA AUTOMATICA SI INFORMATICA APLICATA
CENTRUL DE CERCETARE SISTEME INTELIGENTE

 IEEE Romania Section
IEEE CIS Romania Chapter

Vă invită să participați
Luni 18 Octombrie 2016,
Ora 11:00, în Amfiteatrul A1
Corpul M – Micalaca

la
CONFERINȚA
Expressiveness and fuzzy modeling
Susținută de către



Professor Bernadette BOUCHON-MEUNIER
IEEE Fellow
IEEE Distinguished Lecturer Computational Intelligence Society
Sorbonne Université, University Pierre et Marie Curie-Paris 6,
Paris, France

Intocmit,

Director ICDISTN.

CSI Dr.Ing. Cecilia ȘÎRGHIE