

**Universitatea Politehnica din București, Facultatea Transporturi.
Departamentul Telecomenzi și Electronică în Transporturi**

LISTA DE LUCRĂRI

Conferențiar dr.dipl.ing.ec. Cătălin-Marian DUMITRESCU

I. LUCRĂRI RELEVANTE (R)

R1. Marius Minea, **Cătălin Dumitrescu**, Ilona Mădălina Costea, Ionut Cosmin Chiva, Augustin Semenescu, *Developing a Solution for Mobility and Distribution Analysis Based on Bluetooth and Artificial Intelligence*, *Sensors* **Q1**, December 2020, doi: 10.3390/s20247327, **Published:** AUG 2020, **Document Type:** Article, **Pag.1 - 27**, **Publisher** MDPI, ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND, **ISSN:** eISSN: 1424-8220, *JCR® Category* INSTRUMENTS & INSTRUMENTATION (nr pag 26)

R2. S. Raboaca, **C. Dumitrescu**, I. Manta, *Aircraft Trajectory Tracking Using Radar Equipment with Fuzzy Logic Algorithm*, *Mathematics* 2020 **Q1**, Published: 6 February 2020, 8(2), 207; <https://doi.org/10.3390/math8020207>, WOS: 000519234000062 (nr pag 20), WOS: 000519234000062.

R3. S. Raboaca, **C. Dumitrescu**, I. Manta, C. Filote, *A New Adaptive Spatial Filtering Method in the Wavelet Domain for Medical Images*, *Appl. Sci.* **Q2**, 2020, 10(16), 5693; Published: 17 August 2020, <https://doi.org/10.3390/app10165693> (nr pag 29). WOS:000564635300001.

R4. **Cătălin Dumitrescu**, Marius Minea, Ilona Mădălina Costea, Ionut Cosmin Chiva, Augustin Semenescu - *Development of an Acoustic System for UAV Detection*, *SENSORS*, **Volume: 20, Issue: 17, ArticleNumber: sensors115059, DOI: 10.3390/s20174870, Published: AUG 2020, Document Type: Article, Pag.1 - 27, Publisher** MDPI, ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND, **ISSN: eISSN: 1424-8220, JCR® Category** INSTRUMENTS & INSTRUMENTATION, **Rank in Category 15 of 64, Q1, Impact Factor 3.275 (2019) & 3.427 (5 year) WOS:000569742800001 (nr pag 27)**

R5. **C. Dumitrescu**, P. Ciotirnae, C. Vizitiu, *Fuzzy Logic for Intelligent Control System Using Soft Computing Applications*, MDPI *Sensors* 2021, 21, 2617, Section Intelligent Sensors, DOI: 10.3390/s21082617, April 2021, *Quartile in Category Q1, Impact Factor 3.275 (2019) & 3.427 (5 year), WOS:000644809100001 (nr pag 33)*

R6. **C Dumitrescu**, M Roboaca, A Falsaghi, *Methods for Improving Image Quality for Contour and Texture Analysis Using New Wavelet Methods*, *Applied Sciences* 2021, 11, 3895, [Doi.org/10.3390/app11093895](https://doi.org/10.3390/app11093895), Published: 25 April 2021,

Quartile in Category Q2, Impact Factor 2.474 (2021), (nr pag 23), WOS:000649878300001.

R7. C Dumitrescu, M Minea, P Ciotarnea, UAV Detection Employing Sensor Data Fusion and Artificial Intelligence, Information Systems Architecture and Technology: Proceedings of 40th Anniversary International Conference on Information Systems Architecture and Technology – ISAT 2019. ISAT 2019. Advances in Intelligent Systems and Computing, vol 1050. Springer, Cham, ISBN 978-3-030-30439-3, DOI 10.1007/978-3-030-30440-9_13, (https://doi.org/10.1007/978-3-030-30440-9_13), Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 1050), WOS:000564746100013 (nr pag 11)

R8. M Minea, C Dumitrescu, L Minea, Intelligent Network Applications Monitoring and Diagnosis employing Software Sensing and Machine Learning Solutions, MDPI Sensors (Q1), **2021**, 21(15), 5036; Published: 25 July 2021, <https://doi.org/10.3390/s21155036>, WOS:000682176000001.

R9. F. Nemtanu, Ilona Madalina COSTEA, Catalin Dumitrescu, Spectral Analysis of Traffic Functions in Urban Areas, PROMET - Traffic&Transportation, ISSN: 1848-4069, Vol. 27, 2015, No. 6; pag. 477-484 - WOS:000368321400003 (nr pag 8)

R10. C. Dumitrescu, I. Costea, A. Cormos, A. Semenescu, Automatic Detection of K-Complexes using Cohen Class Recursiveness & Reallocation Method and Deep Neural Network with EEG Signals, MDPI Sensors 2021 (IF 3.576 – 2021), 21(21), 7230; <https://doi.org/10.3390/s21217230> (registering DOI), Published: 30 October 2021, ISSN 1424-8220, Special Issue: Advanced in Sleep Monitoring Sensors, Devices and Computational Technologies, WOS: 000719388200001.

II. TEZA DE DOCTORAT

T1. “Contribuții la prelucrarea semnalelor biomedicale cu TMS320C6211”, domeniul Inginerie Electronică și Telecomunicații, UPB Facultatea de Electronică și Telecomunicații, 2005.

III. CĂRȚI / CAPITOLE CĂRȚI PUBLICATE

Cc1. C. Dumitrescu, I. Costea, I. Badescu, C. Banica, Metodologie de detectie pentru structure impuse. Aplicatii ale planului timp-frecventa, Carte editura Politehnica Press, 2016, ISBN 978-606-515-662- 3, Bucuresti, cod CNCSIS 19, *nr pag 181*.

Cc2. C. Dumitrescu, Aplicații ale transformatorilor wavelet în prelucrarea digitală a imaginilor și semnalelor, Editura BREN, 2020, București, ISBN 978-606-610-248-3, Cod CNCSIS 96, *nr pag 207*.

Cc3. C Dumitrescu, S Raboaca, I. Manta, Gain-Controlled Filter using Fuzzy Logic for Target Tracking using Radar Equipment in Difficult Tracking Conditions,

book chapter, Prime Archives in Applied Mathematics, 1st Edition, Vide Leaf, ISBN 978-81-944664-3-7, DOI: 10.37247/PAAM.1.2020.20, January 2020, nr pag 20.

Cc4. S Raboaca, C Dumitrescu, I. Manta, Development of a New Fuzzy Logic Based Algorithm for Tracking Targets, book chapter, Theory and Practice of Mathematics and Computer Science vol 5, Book Publisher International, December 24, 2020, ISBN-13 (15) 978-93-90516-99-5, DOI: <https://doi.org/10.9734/bpi/tpmcs/v5>, nr pag 23.

Cc5. C Dumitrescu, S Raboaca, C Filote, I. Manta, Noise Reduction Algorithm based on Spatial Filtering in the Wavelet Domain, book chapter, Prime Archives in Applied Mathematics, 1st Edition, Vide Leaf, ISBN 978-81-944664-3-7, 2020, DOI: 10.37247/PAAM.1.2020.20, January 2020, nr pag 19.

Cc6. C. Dumitrescu, M. Minea, I. Costea, Development of an Acoustic System for UAV discovery and Tracking Employing Concurrent Neural Network, book chapter, Prime Archives in Sensors, 1st Edition, Hyderabad, Vide Leaf, ISBN: 978-81-945175-7-3, January 2020, nr pag 36.

Cc7. C. Dumitrescu, Intelligent Control System using Machine Learning Methodologies Applications, Editura BREN, 2021, București, ISBN 978-606-610-267-4, Cod CNCIS 96, Nr. pag 209.

Cc8. C. Dumitrescu, Improved Wavelet Algorithm for Medical Image Analysis, book chapter, New Vision in Science and Technology, vol 9, Editor Dr. Salisu Muhammad Lawan, Book Publisher International, November 08, 2021, ISBN: 978-93-5547-238-0 (print), 978-93-5547-243-4 (e-book), DOI: 10.9734/bpi/nvst/v9/14486D

Cc9. C. Dumitrescu, Automatic Detection of K-complexes using Deep Neuronal Network with EEG Signals, book Prime Archives in Sensors: 2nd Edition, Editor Yuwen Li, Vide Leaf, 2022, ISBN: 978-93-92117-13-8, nr pag 30, DOI: 10.37247/PAS.2.2022.20

Cc10. C. Dumitrescu, Brain-Computer Interface Using Non-Invasive Motor Imagery and Machine Learning, book Prime Archives in Sensors: 2nd Edition, Editor Yuwen Li, Vide Leaf, 2022, ISBN: 978-93-92117-13-8, nr pag 28, DOI: 10.37247/PAS.2.2022.20

IV. ARTICOLE / STUDII IN EXTENSO PUBLICATE

Ris1. F. Nemtanu, Ilona Madalina COSTEA, Catalin Dumitrescu, Spectral Analysis of Traffic Functions in Urban Areas, PROMET - Traffic&Transportation, ISSN: 1848-4069, Vol. 27, 2015, No. 6; pag. 477-484 - WOS:000368321400003, **nr pag 8**

Ris2. Cătălin Dumitrescu, Marius Minea, Ilona Mădălina Costea, Ionut Cosmin Chiva, Augustin Semenescu - Development of an Acoustic System for UAV Detection, MDPISENSORS, Volume: 20, Issue: 17, Sensor915059, DOI: 10.3390/s20174870, Published: AUG 2020, Document Type: Article, Pag.1 - 27, Publisher MDPI, ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND, ISSN: eISSN: 1424-

8220, JCR® Category INSTRUMENTS & INSTRUMENTATION, Rank in Category 15 of 64, Quartile in Category Q1, Impact Factor 3.275 (2019) & 3.427 (5 year) WOS:000569742800001, nr pag 27.

Ris3. M Minea, C Dumitrescu, I Costea, C, Chiva, A Semenescu, *Developing a Solution for Mobility and Distribution Analysis Based on Bluetooth and Artificial Intelligence*, MDPI Sensors 2020, 20(24), 7327, Section Intelligent Sensors, DOI: 10.3390/s20247327, December 2020, Quartile in Category Q1, Impact Factor 3.275 (2019) & 3.427 (5 year), WOS: 000603324600001, nr pag 26.

Ris4. S. Raboaca, C. Dumitrescu, I. Manta, *Aircraft Trajectory Tracking Using Radar Equipment with Fuzzy Logic Algorithm*, MDPI Mathematics 2020, Published: 6 February 2020, 8(2), 207; <https://doi.org/10.3390/math8020207>, Quartile in Category Q1, Impact Factor 1.747 (2019) WOS: 000519234000062., nr pag 20.

Ris5. S. Raboaca, C. Dumitrescu, I. Manta, C. Filote, *A New Adaptive Spatial Filtering Method in the Wavelet Domain for Medical Images*, Applied Sciences., 2020, 10(16), 5693; Published: 17 August 2020, <https://doi.org/10.3390/app10165693>, Quartile in Category Q2, Impact Factor 2.474 (2019), WOS:000564635300001, nr pag 29.

Ris6. C. Dumitrescu, P. Ciotirnae, C. Vizitiu, *Fuzzy Logic for Intelligent Control System Using Soft Computing Applications*, MDPI Sensors 2021, 21, 2617, Section Intelligent Sensors, DOI: 10.3390/s21082617, April 2021, Quartile in Category Q1, Impact Factor 3.275 (2019) & 3.427 (5 year), WOS:000644809100001, nr pag 33.

Ris7. C Dumitrescu, M Minea, P Ciotarnae, *UAV Detection Employing Sensor Data Fusion and Artificial Intelligence*, Information Systems Architecture and Technology: Proceedings of 40th Anniversary International Conference on Information Systems Architecture and Technology – ISAT 2019. ISAT 2019. Advances in Intelligent Systems and Computing, vol 1050. Springer, Cham, ISBN 978-3-030-30439-3, DOI 10.1007/978-3-030-30440-9_13, (https://doi.org/10.1007/978-3-030-30440-9_13), Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 1050), WOS:000564746100013, nr pag 11.

Ris8. C Dumitrescu, M Roboaca, A Falsaghi, *Methods for Improving Image Quality for Contour and Texture Analysis Using New Wavelet Methods*, Applied Sciences 2021, 11, 3895, Doi.org/10.3390/app11093895, Published: 25 April 2021, Quartile in Category Q2, Impact Factor 2.474 (2021), nr pag 23

Ris9. C.Dumitrescu, IlonaMadalinaCOSTEA, F.C.Nemtanu, V.A.Stan, A.R.Gheorghiu, *Application of the Wavelet Transform in Machine-Learning*, U.P.B.Sci.Bull.,SeriesA,Vol.76, Iss.4,2014ISSN1223-7027, pag.167-178-WOS:000346133600017, nr pag 12

Ris10. Ilona Costea, Catalin Dumitrescu, Florin Nemteanu, *Advanced Terrestrial and Aerial Monitoring and Inspection System for Critical Infrastructures*, ECAI 2018 Electronics, Computers and Artificial Intelligence, June 2018, ISSN 1843-2115, ISBN

978-1-5386-4901-5, IEEE Catalog Number CPF1827U-ART, WOS 000493442800013,
nr pag 10

Ris11. **Cătălin Dumitrescu**; Maria Simona Răboacă; Ioana Manta, ***Image Compression and Noise Reduction through Algorithms in Wavelet Domain***, 2020 IEEE 26th International Symposium for Design and Technology in Electronic Packaging (SIITME), 21-24 Oct. 2020, Pitesti, Romania Publisher: IEEE, DOI:10.1109/SIITME50350.2020.9292248, ISBN:978-1-7281-7507-2, ISSN: 2642-7036, *nr pag 11*

Ris12. Răzvan Andrei GHEORGHIU¹, Valentin Alexandru STAN², Radu Șerban TIMNEA³, **Cătălin DUMITRESCU**, ***AD-HOC NETWORKS OF TRAFFIC CABINETS***, U.P.B. Sci. Bull., Series C, Vol. 77, Iss. 1, ISSN 2286-3540 -*, WOS 000421796300011, *nr pag 10*

Ris13. M Minea, **C Dumitrescu**, L Minea, ***Intelligent Network Applications Monitoring and Diagnosis employing Software Sensing and Machine Learning Solutions***, MDPI Sensors (Q1), **2021, 21(15)**, 5036; **Published: 25 July 2021**, <https://doi.org/10.3390/s21155036>, WOS:000682176000001

Ris14. B. Douma, A Bilal, E. Ailam, R. Felseghi, C. Filote, C. Dumitrescu, M. Raboaca, ***Development and Analysis of Unconventional Axial Flux Motor Using YBaCuO Bulks***, MDPI Materials 2021, 14(15), 4295, published 31 Jul 2021, DOI:10.3390/ma14154295, IF = 3.623, ISSN 1996-1944, WOS:000682059000001

Ris15. C Dumitrescu, I Costea, O Ghita, C Banica, ***Processing Images Obtained from UAVs for Preserving Contours in Order to Classify Shapes***, 2021 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 25-27 March 2021, Bucharest, Romania, Publisher: IEEE, **DOI: 10.1109/ATEE52255.2021.9425071** (<https://ieeexplore.ieee.org/document/9425071/authors#authors>), WOS:000676164800016

Ris16. M Minea, **C Dumitrescu**, M. Dima, ***Robotic Railway Multi-Sensing and Profiling Unit based on Artificial Intelligence and Data Fusion***, MDPI Sensors (ISSN 1424-8220) on 13 October 2021, Basel, *Sensors* 2021 (IF 3.576 – 2021), 21(20), 6876; DOI:<https://doi.org/10.3390/s21206876>, published 16 October 2021, Special Issue: State-of-the-Art Sensors Technology in Romania 2021, ISSN 1424-8220, WOS:000714796100001

Ris17. C. Dumitrescu, I. Costea, A. Cormos, A. Semenescu, ***Automatic Detection of K-Complexes using Cohen Class Recursiveness & Reallocation Method and Deep Neural Network with EEG Signals***, MDPI Sensors 2021 (IF 3.576 – 2021), 21(21), 7230; <https://doi.org/10.3390/s21217230> (registering DOI), Published: 30 October 2021, ISSN 1424-8220, Special Issue: Advanced in Sleep Monitoring Sensors, Devices and Computational Technologies, WOS: 000719388200001.

Ris18. M. Minea, C. Dumitrescu, I. Costea, Advanced e-Call Support Based on Non-Intrusive Driver Condition Monitoring for Connected and Autonomous Vehicle, *Sensors Sensors* **2021**, *21*, 8272, <https://doi.org/10.3390/s21248272>, Publisher: 10 December 2021, eISSN: 1424-8220 , WOS:000745275000001

Ris19. C. Dumitrescu, I. Costea, A. Semenescu, Using Brain-Computer Interface to control a virtual drone using Non-Invasive Motor Imagery and Machine Learning, *MDPI Applied Science* 1495677, DOI:10.3390/app112411876, ISSN: 2076-3417, 12 December 2021, eISSN: 2076-3417, WOS:000739665600001.

Vis1. I. Costea, **C. Dumitrescu**, M. Minea, A. Banica, *Analysis of facial expression using thermal imaging, The 7th Multidisciplinary Academic Conference, Prague may 2016, Czech Republic*, ISBN 978-80-88085-06-5, ISSN:2161-2064, DOI: 10.1109/ISSE2016.7563210, *nr pag 8*

Vis2. Ilona Madalina COSTEA, **C. Dumitrescu**, C Banu. B. Soare, *Trajectory estimation for transportation systems: Aircraft tracking applications*, Proceedings of 38th International Spring Seminar on Electronics Technology - ISSE 2015, Eger, Ungaria; pag. 329-332, DOI: 10.1109/ISSE.2015.7248016 - WOS:000374113000067, *nr pag 9*

Vis3. **C. Dumitrescu**, Ilona Madalina MOISE, B. Soare, N. Dumitru, *Adaptive Noise Cancellation using LabVIEW*, 2013 IEEE 19th International Symposium for Design and Technology in Electronic Packaging (SIITME), Galati, 24-27.10.2013; pag: 139-143; DOI: 10.1109/SIITME.2013.6743660 –WOS:000347562900023, *nr pag 8*

Vis4. Ilona Madalina COSTEA, Florin Codrut Nemtanu, **Catalin Dumitrescu**, Claudiu Virgil Banu, Geanina Silviana Banu; *Monitoring System with Application in Road Transport*; 2014 IEEE 20th International Symposium for Design and Technology in Electronic Packaging (SIITME); BDI; ISBN:978-1-4799-6961-6; pag. 145-148, DOI: 10.1109/SIITME.2014.6967013- WOS:000358258300025, *nr pag 8*

Vis5. Ilona Madalina COSTEA, **C. Dumitrescu**, N. Dumitru, B. Soare, *Biomedical Signals Analysis Techniques Using the Signal Processor TMS320C6211B*, Proceedings of 37th International Spring Seminar on Electronics Technology ISSE 2014, Dresden, Germania; pag. 327-331, DOI: 10.1109/ISSE.2014.6887617 - WOS:000346580500065, *nr pag 9*

Vis6. **C. Dumitrescu**; Ilona Madalina COSTEA, C.K Banica, S Potlog, *LabVIEW brain computer interface for EEG analysis during sleep stages*, Proceedings of Advanced Topics in Electrical Engineering (ATEE), 2015 9th International Symposium, Bucuresti, ISBN:978-1-4799-7514-3; pag. 285-288, DOI: 10.1109/ATEE.2015.7133781 - WOS:000368159800052, *nr pag 9*

Vis7. Ilona Madalina Costea, **Catalin Dumitrescu**, Claudiu Virgil Banu, Florin Codrut Nemtanu,“*Automatic Pedestrian Detection System – Support for Autonomic Cooperative Systems*”, ARTS ECR Conference 2015 - Autonomic Road Transport Support systems , Malta, 27-28 Mai 2015, *nr pag. 6.*

Vis8. **C. Dumitrescu**, I. Costea, M. Minea, A. Banica, *Developing an automated system for simultaneous recording of the human physiological parameters*, The 7th Multidisciplinary Academic Conference, Prague may 2016, Czech Republic, ISBN 978-80-88085-06-5, ISSN:2161-2064, DOI:10.1109/ISSE2016.7563209, **nr pag 8**

Vis9. **C. Dumitrescu**, I. Costea, F. Nemteanu, I. Badescu, A. Banica, *Developing a multi sensors system to detect sleepiness to drivers from transport systems* – 2016, IEEE 22nd International Symposium for Design and Technology in Electronic Packaging (SIITME), pag 175-178, DOI: 10.1109/SIITME 2016. 7777271, IEEE Conference Publications, **nr pag 9**

Vis10. Ionuț-Cosmin CHIVA, **Cătălin DUMITRESCU** , Marius MINEA , Augustin SEMENESCU - *APPLICATION OF ARTIFICIAL INTELLIGENCE SYSTEMS IN THE MANAGEMENT OF INTELLIGENT TRANSPORT SYSTEMS*, Review of Management and Economic Engineering - 7th International Management Conference 2020 RMEE, *Management Challenges Within Globalization, Special Edition in Memoriam Professor Ioan Abrudan*, 17-19 Sept. 2020, The 7th RMEE Management Conference Proceedings, pag. 186-192, Todesco Publishing House, ISSN 2247-8639, ISSN-L= 2247-8639, **nr pag 8**

Vis11. **Cătălin DUMITRESCU**, Marius MINEA , Augustin SEMENESCU, Ionuț-Cosmin CHIVA - *GAME THEORY IN DECISION MANAGEMENT*, Review of Management and Economic Engineering - 7th International Management Conference 2020 RMEE, *Management Challenges Within Globalization, Special Edition in Memoriam Professor Ioan Abrudan*, 17-19 Sept. 2020, The 7th RMEE Management Conference Proceedings, pag. 394-400, Todesco Publishing House, ISSN 2247-8639, ISSN-L= 2247-8639, **nr pag 8**

Vis12. **Cătălin DUMITRESCU**, Marius MINEA , Augustin SEMENESCU, Ionuț-Cosmin CHIVA - *IoT TECHNOLOGY AND SUPPLY CHAIN MANAGEMENT*, Review of Management and Economic Engineering - 7th International Management Conference 2020 RMEE, *Management Challenges Within Globalization, Special Edition in Memoriam Professor Ioan Abrudan*, 17-19 Sept. 2020, The 7th RMEE Management Conference Proceedings pag. 156-165, Todesco Publishing House, ISSN 2247-8639, ISSN-L= 2247-8639, **nr pag 11**

Vi13. Baiasu A., **Dumitrescu C.**, *Contribution to drive fatigue detection based on eye-tracking*, European Conference on Electrical Engineering 2020 (EECS 2020), published January 2021 on International Journal of Circuit, Systems and Signal Processing, Volume 15, pp. 1-7, 2021, DOI: 10.46300/9106.2021.15.1, E-ISSN: 1998-4464, indexing Scopus, **nr pag 7**

Rio1. Dan Iliescu, **Catalin Dumitrescu**, Ionescu Ana-Maria, *Analysis and Detection of EEG Transient Waves During Sleep*, ARS Medica Tomitana Journal, ISSN 1841-4036, DOI: 10.2478/arsm-2018-0031, 2018, **nr pag 9**.

Rio2. Dan Iliescu, Catalin Dumitrescu, Ana-Maria Ionescu, K-complex Detection using the Continuous Wavelet Transform, ARS Medica Tomitana Journal, ISSN 1841-4036, DOI: 10.2478/arism-2018-0025, 2018, nr pag 8

Rno1. C. Dumitrescu, Cohen Clase Join Time-Frequency Analysis, Romanian Journal of Informatics and Automation, vol 15, nr. 2, pp. 51-58, 2005, ISSN 1220-1758.

Rno2. C. Dumitrescu, Brain wave k-complex detection using liniar prediction, Romanian Journal of Informatics and Automation, vol 15, nr. 3, pp. 82-86, 2005, ISSN 1220-1758.

Rno3. C. Dumitrescu, Sleep EEG transient wave - Analysis and Detection, Romanian Journal of Informatics and Automation, vol 14, nr. 3, pp. 67-78, 2004, ISSN 1220-1758.

Vi1. Bădescu, C. Dumitrescu, Post Processing Elements of Artificial Intelligence Adaptiv Spatial Filtering with Wavelet for Boundary Detection, proceeding the 16 International Conference on Automatic Control, Modelling and Simulation 2014, pag 180, WSEAS Press, ISSN 1790-5117, ISBN 978-960-474-383-4, nr pag 5

Vi2. I. Bădescu, C. Dumitrescu, Steganography in Image using Discrete Wavelet Transformation, proceeding of the 5th international conference on mathematical model for engineering science 2014, WSEAS Press, ISSN 2227-4588, ISBN 978-960-474-387-2, nr pag 5

Vi3. Bădescu I, C. Dumitrescu, Discret-Time Discret-Frequency for Time-Frequency Signal Analysis and Real-Time Applications, proceeding the 15 International Conference on Automatic Control, Modelling and Simulation 2013, ISSN 1790-5117, ISBN 978-1-61804-189-0, nr pag 5

Vi4. Bădescu I, C. Dumitrescu, Methods of Improving the Quality of the Images Obtained by Truncating the Wavelet Coefficients Software, proceeding the 15 International Conference on Automatic Control, Modelling and Simulation 2013, ISSN 1790-5117, ISBN 978-1-61804-189-0, nr pag 6

V. CERERE DE BREVET INVENȚIE

B1. Ilona Costea, Catalin Dumitrescu, Arthur Nicolae, G Nicolae, SISTEM DE MONITORIZARE ȘI INSPECȚIE AVANSATĂ AERIANĂ ȘI TERESTRĂ A INFRASTRUCTURILOR CRITICE, OSIM A00573 din 08.08.2018. 134044 A2 (51) B64C 39/02(2006.01); H04N 19/00 (2014.01); (21) a 2018 00573 (22) 08/08/2018 (41) 30/04/2020// 4/2020

B2. MINEA Marius, DUMITRESCU Cătălin, CHIVA Ionuț-Cosmin, MINEA Viviana - Laetitia, SEMENESCU Augustin, METODĂ ȘI SISTEM PENTRU CULEGERE ANONIMĂ A INFORMAȚIILOR DE POZIȚIE ȘI MOBILITATE ÎN TRANSPORTUL PUBLIC DE CĂLĂTORI, BAZATĂ PE BLUETOOTH ȘI INTELIGENȚĂ ARTIFICIALĂ, OSIM A/ 00493 din 14.08. 2019. Brevet invenție OSIM 134415 A0 (51) G08G 1/01 (2006.01); H04W 4/02 (2009.01); H04W 4/42

(2018.01); (21) a 2019 00493 (22) 14/08/2019 (41) 28/08/2020//8/2020, Buletin Oficial de Proprietate Industrială, nr 8 / 2020.

B3. DUMITRESCU Cătălin, MINEA Marius, COSTEA Ilona, SEMENESCU Augustin, Chiva I. **METHOD AND SYSTEM FOR DETECTING ACTIVE PILOT-FREE AIRCRAFT VEHICLES BY USING THE ARM CORTEX PROCESSOR AND DEEP LEARNING ANALYSIS OF SOUND**, Applications for OSIM A/00331, 15 iunie 2020.

VI. CONTRACTE ȘI RAPOARTE ȘTIINȚIFICE

Pn1. 2018-2021, **9SOL - Integrated system for support and command of crisis response actions**, PN-III-P2-2.1-SOL-2017-08-0107, (funded by UEFISCDI, parteneri: Academia Militara Tehnica, Soft Galaxy International S.A., MarcTEL), Director: Conf. Dr. Ing. Petrica Ciotarnea

Pn2. 2017 – 2018, Fusuri de Somn - **Sleep spindles – monitoring the fatigue level of the staff employed in critical infrastructure**, PN-III-P2-2.1-PED-2016-0505, **Coordinating institution: UNIVERSITATEA OVIDIUS, Project partners: Partener (P1) - UTI GRUP S.A.**

Pn3. 2017 - 2020: SPIA-VA – **Technologies and innovative video systems for person re-identification and analysis of dissimulated behavior** PN-III-P2- 2.1-SOL-2016-02-0002 (funded by UEFISCDI, parteneri: UPB, UTI GRUP S.A., MAPN-ACTTM), Director: Prof. Dr. Ing. Bogdan Ionescu

Pn4. 2017 - 2020: UAV platform (unmanned aerial vehicle) with dedicated capabilities and support infrastructure with applications in national security missions (PN-III-P2-2.1-SOL-2016-01-0008 - funded by UEFISCDI, partners: INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE AEROSPATIALA "ELIE CARAFOLI" - I.N.C.A.S. BUCURESTI; UPB; MAPN - ACTTM; ICPE - CA BUCURESTI; UTI GRUP S.A.; AVIOANE CRAIOVA S.A.) Director: Conf. Dr. Ing. Thor Pleter

Pn5. 2016 – 2019, GESNAPHOTO - **Nano-Structured GeSn Coatings for Photonics**, M.ERANET-3107, **Coordinating institution: INSTITUTUL NATIONAL DE CERCETARE - DEZVOLTARE PENTRU FIZICA MATERIALELOR BUCURESTI RA Project partners: Partener (P1) - INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU OPTOELECTRONICA INOE 2000 INCD, Partener (P2) - OPTOELECTRONICA - 2001 S.A.**

Pn6. 2016 – 2018, PhotoNanoP - **High photoconductive oxide films functionalized with GeSi nanoparticles for environmental applications**, M-ERA.NET, **Coordinating institution: INSTITUTUL NATIONAL DE CERCETARE - DEZVOLTARE PENTRU FIZICA MATERIALELOR BUCURESTI RA Project partners: Partener (P1) - INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU MICROTEHNOLOGIE - IMT BUCURESTI INCD Partener (P2) - OPTOELECTRONICA - 2001 S.A**

Pn7. 2016 – 2018, SMIATIC – „Sistem de Monitorizare si Inspectie Avansata Aeriana si Terestra a Infrastructurilor Critice”, POC 2014-2020, ENERGY & ECO CONCEPT SRL, <http://smiatic.ro/>

Pn8. 2016 – 2018, **The development of an innovative integrated system for forensic expertise services**, PN-III-P2-2.1-PTE-2016-0141, **Coordinating institution:** OPTOELECTRONICA - 2001 S.A. **Project partners: Partener (P1)** - Academia Tehnica Militara

Pn9. 2013 – 2015, **SMART surveillance system with automatic identification of the interest events**, PN-II-IN-DPST-2012-1-0034, parteneri UTI Group SA, UPB

Pn10. 2020-2021, **Realizare sistem de inspectie aeriană cu drona pentru cresterea eficienței centralelor bazate pe energii regenerabile si oferirea de servicii pentru mentenanta**, Cod apel: POC/62/1/3/Stimularea cererii întreprinderilor pentru inovare prin proiecte CDI derulate de întreprinderi individual sau în parteneriat cu institute de CD si universitați, în scopul inovarii de procese si de produse în sectoarele economice care prezinta potențial de crestere, axa prioritară Cercetare, dezvoltare tehnologică și inovare (CDI), Cod proiect 109905, compania Intelligent Transport Solutions SRL, responsabil proiect Ancuta Florin

Pn11. 2020-2021, **Sistem multi-senzor pentru estimarea stării de oboseală, somnolență și a nivelului de stres cu aplicabilitate in Infrastructurile Critice**, Cod apel: POC/62/1/3/Stimularea cererii întreprinderilor pentru inovare prin proiecte CDI derulate de întreprinderi individual sau în parteneriat cu institute de CD si universitați, în scopul inovarii de procese si de produse în sectoarele economice care prezinta potențial de crestere, axa prioritară Cercetare, dezvoltare tehnologică și inovare (CDI), Cod proiect 111022, compania Bioma Delly Trading SRL, responsabil de proiect Pleter Octavian Thor

Pn12. 2021-2023, 27SOL, Soluții 2 -2021 – **Platformă specilizată în identificarea și evaluarea indicilor de alertă timpurie pentru gestionarea situațiilor de criză**, PN-III-P2-2.1-SOL-2021-0063 (funded by UEFISCDI, parteneri: Academia Militara Tehnica, Soft Galaxy International S.A., UPB, MarcTEL), Director: Conf. Dr. Ing. Cristian Molder (ATM)

Pn13. 2021-2024, **Sistem inovativ pentru combaterea transfrontaliera a terorismului, crimei organizate, traficului ilegal de bunuri si persoane**, SIPOCA – SMIS 121596, Coordonator Energy&Eco Concept SRL, partener UPB, director conf.dr.ing Catalin Dumitrescu

Pi1. 2016 – 2018, SafeShore - **System for detection of Threat Agents in Maritime Border Environment** — SafeShore, H2020-BES-2014-2015/H2020-BES-2015

Pi2. H2020 EU, EWISA – **Land Border Surveillance System Concept** (Early Warning for Increased Situational Awareness – SEC-2013-3.2.1, POV ON LAND BORDER – GA no 608174)

Pi3. 2019 – 2021, **Intelligent System for Network Health Monitoring**, MNET18/NMCS3473, 98/2019 (COFUND-ERANET MANUNET III- SENSASSIST-1), parteneri INOE, WING COMPUTER, responsabil proiect S. Miclos (<https://www.era-learn.eu/network-information/networks/manUNET-iii/manUNET-call-2018/intelligent-system-for-network-health-monitoring>)

Pi4. 2020 - 2021, **Satellite Applications for Public Safety & Security**, ESA ARTES 4.0 Space Systems for Safety and Security, finanțare European Space Agency (ESA), parteneri ENEA, Serviciul de Telecomunicații Speciale, Serviciul de Pază și Protecție, Ministerul de Interne, responsabil de proiect Cosmin Stanciu ENEA.

VII. COMUNICĂRI ȘTIINȚIFICE NEPUBLICATE (E)

E1. C. Dumitrescu, Artificial Intelligence and Cognitiv Psychology. Applications and Models, The importance of multidisciplinary approach in promoting patient safety Conference, Bucharest may 2017, Romania, ISBN 978-606-587-508-1.

E2. C. Dumitrescu, Sleep Spindles and K-complex as Biomarker for Early Detection of Neurodegenerative Disorder, National Conference of Neuroscience, Neuroinformatics, Neuro-Technology and Neuro-Psycho-Pharmacology – 2nd Edition 17-18 November 2017, Library of the Romanian Academy, Bucharest. Organizer of the Romanian Brain Research Group.

E3. C. Dumitrescu, Sleep EEG Analysis using LabVIEW, Conferința Națională de Informatică Medicală, Târgu Mureș, 2010.

E4. C. Dumitrescu, Time Frequency Analysis – An application to audio signal, International Conference on Audio Processing, Praga 2007.

E5. C. Dumitrescu, Time-Frequency Structured Decorrelation of Speech Signals via Nonseparable Gabor Frame. International Conference on Audio Processing, Praga 2012.

E6. C. Dumitrescu, Wavelet Filter Bank in Speech, WSEAS (World Scientific and Engineering Academy and Society) International Conference on Signal Processing, Veneția, november 2013.

E7. C. Dumitrescu, Signal Classification using Statistical and Time-Frequency Analyses, XXI century Modern Technologies, Technical Military Academy, november 2009.

E8. Catalin Dumitrescu, From the Human Mind to Artificial Intelligence, Brain Technology – The quest for human enhancement, International Conference Brain Awareness Week 2018, organised National Neuroscience Society of Romania

E9. C. Dumitrescu, *Artificial Intelligence and Cognitiv Psychology. Applications and Models*, The importance of multidisciplinary approach in promoting patient safety Conference, Bucharest may 2017, Romania, ISBN 978-606-587-508-1.

E10. C. Dumitrescu, *Neurostiintele, Inteligenta Artificiala si Medicina Personalizata*, conferinta Mituri si Adevaruri despre Siguranta Traiului Modern, editia a V a, 24-25 martie 2021, online, Bucuresti.

E11. C. DUMITRESCU. Analiza semnalelor nestaționare utilizând metoda Matching Pursuit și funcția Gabor. *A XXIX Sesiune de comunicări tehnico-științifice a Institutului pentru Tehnologii Avansate*, București 2005.

E12. C. DUMITRESCU. Dezvoltarea și implementarea algoritmului DTDF pentru analiza de semnal utilizând reprezentarea în planul timp-frecvență. *A XXX Sesiune de comunicări tehnico-științifice a Institutului pentru Tehnologii Avansate*, București 2006.

E13. C. DUMITRESCU. *Time Frequency Analysis – An application to audio signal.* *International Conference on Audio Processing, Korea- Military Research Institute.* Daejon - Korea 2004.

E14. C. DUMITRESCU. *Time-Frequency Structured Decorrelation of Speech Signals via Nonseparable Gabor Frame.* *International Conference on Audio Processing, Korea- Military Research Institute.* Daejon - Korea 2004.

E15. C. DUMITRESCU. *Implementarea analizei timp-frecvență pentru analiza semnalului vocal - cu ajutorul programului LabView.* *A XXIX Sesiune de comunicări tehnico-științifice a Institutului pentru Tehnologii Avansate*, București 2005.