



MINISTERUL EDUCAȚIEI

UNIVERSITATEA „AUREL VLAICU“ DIN ARAD

310130 Arad, B-dul Revoluției nr. 77, P.O. BOX 2/158 AR

Tel.: 0040-257- 283010; fax. 0040-257- 280070

<http://www.uav.ro>; e-mail: rectorat@uav.ro

Operator de date cu caracter personal nr. 2929

ICDISTN

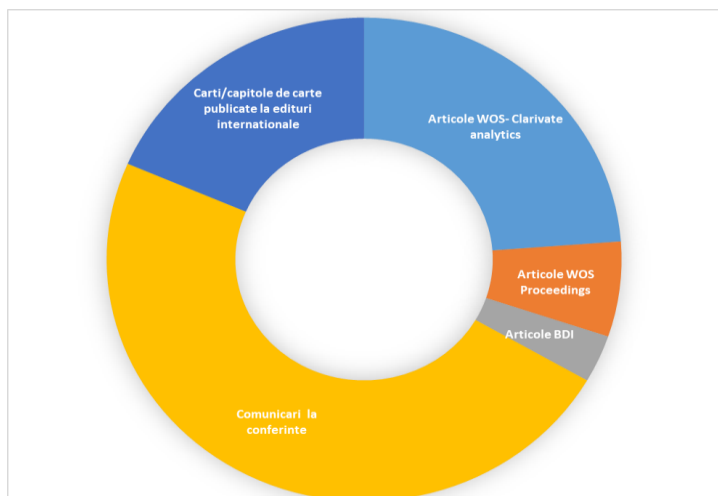
RAPORT PRIVIND ACTIVITATEA DESFĂȘURATĂ ÎN INSTITUTUL DE CERCETARE- DEZVOLTARE - INOVARE ÎN ȘTIINȚE TEHNICE ȘI NATURALE ÎN ANUL 2022

A. Cercetare Științifică

În anul 2022 în laboratoarele Institutului de Cercetare-Dezvoltare-Inovare în Științe Tehnice și Naturale s-au realizat determinări experimentale care au condus la realizarea unor lucrări științifice care însumează (Conform Anexa 1):

- 45 articole WOS- Clarivate analytics;
- 12 articole WOS Proceedings;
- 6 articole BDI;
- 91 comunicări cu rezumate publicate la conferințe/simpozioane științifice internaționale;
- 35 carti/capitole de carte publicate la edituri internationale.

Ponderea acestor publicații este prezentată în figura de mai jos:



În cadrul ICDISTN au fost derulate diverse proiecte de cercetare științifică și de mobilități.

Cercetare științifică a continuat fiind derulate activități în principal pentru proiectele: “Nanoparticule din deșeuri naturale cu potențiale aplicații medicale”, PN-III-P1-1.1-PD-2019-0607, Director: Dr. Cristian Moisa; “Influența factorilor abiotici asupra caracteristicilor fiziologice și a metaboliților secundari din plante aromatice” PN-III-P1-1.1-PD-2019-0349, Director: CS III Dr. Andreea Lupitu; „Impactul stresului abiotic și biotic asupra plantelor datorită schimbărilor climatice”, Director de proiect: Copolovici Lucian, PN-III-P4-ID-PCE-2020-0410, „Techniques for Unconventional Nano-Designing in the Energy-Reliability Realm”, Director de proiect: Valeriu Beiu, PN-III-P4-ID-PCE-2020-2495, „Sisteme cu peptide penetrante celular ca potențiale platforme utilizate în tratamentul cancerului mamar și de prostata”, PN-III-P4-PCE-2021-0639, Director de proiect: Prof. Dr. Habil. Dana Copolovici, „Improving the nutritional quality of meat products by applying some innovative technological strategies”, PN-III-P2-2.1-PED-2021-3240 Director de proiect: Sef. Lucrari Dr. Simona Perta.

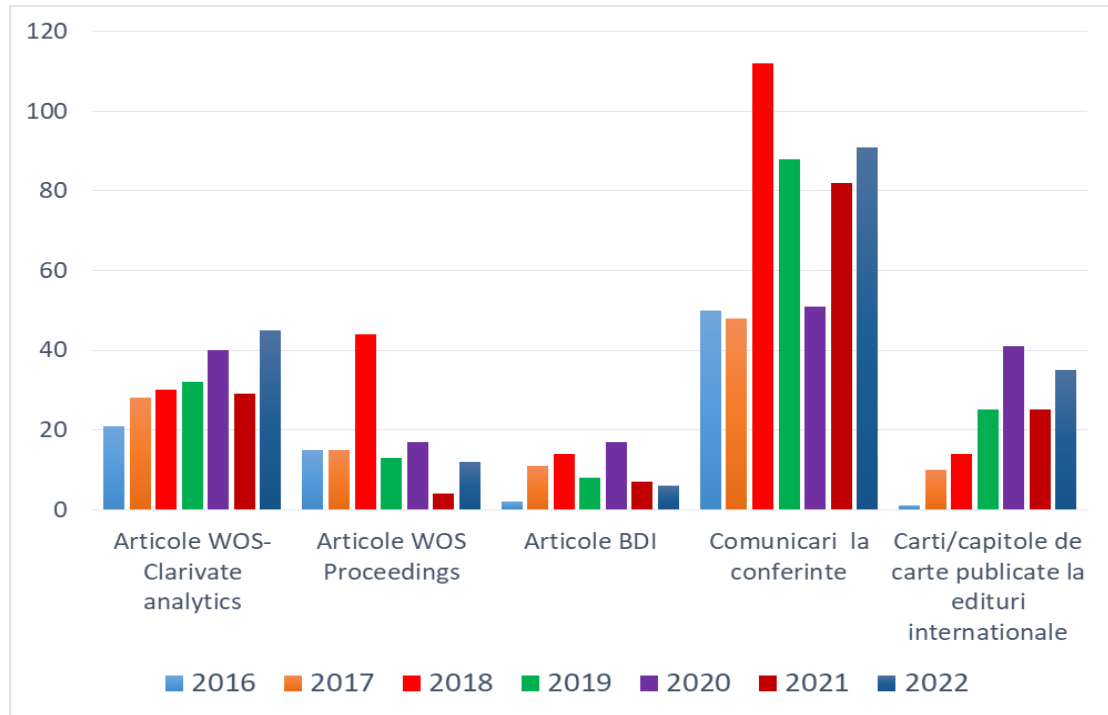
Realizând o comparație a producției științifice realizată în cadrul ICDISTN pe perioada 2016-2022 (prezentată în figura de mai jos), se observă că numărul publicațiilor în ultimul an și în special în ceea ce privește articolele indexate în baza de date WOS – Clarivate analytics este crescut față de anul anterior revenind la valoarea din anii premergători pandemiei de COVID 19. Numărul comunicărilor la diverse conferințe internaționale în anul 2022 este și el în creștere față de anul precedent atingând valorile maxime din anii 2019. Majoritatea prezentărilor au fost realizate la fața locului participându-se la diverse conferințe internaționale dar și prezentări on-line:





Nu au existat competiții de proiecte în cadrul PN III astfel ca au fost depuse proiecte doar la nivel local și un proiect internațional: MARIE SKŁODOWSKA-CURIE ACTIONS Doctoral Networks (DN) Call: HORIZON-MSCA-2022-DN-01 PART B Digital Twins for Active Implantable Medical Devices (AIMD) that Last a Century: Resilient Design and Life Cycle Prognosis “TWINFORCE” Coordonator: Theodor Doll – Hannover Medical School, Germany, Responsabil partener UAV – Valentina E. Balas, Membri: Valeriu Beiu și Marius M. Balas..

În cadrul centrelor de cercetare din ICDISTN au fost derulate activități pe următoarele teme de cercetare cu precădere cele care sunt parte din proiectele în derulare (inclusiv cele cu agenții economici sau colaborări științifice) și cele care sunt desfășurate în cadrul Scolii Doctorale Interdisciplinare a UAV:



1. Determinarea compușilor de metabolism secundar din extracte de plante

În cadrul acestei teme s-au dezvoltat determinări de polifenoli din extracte alcoolice, și caracterizarea uleiurilor volatile.

- a) Determinări de polifenoli din extracte alcoolice de plante utilizând cromatografia de lichide de înaltă performanță cu detector de tip DAD:
 - Au fost analizate probele de *Sambucus nigra* L. pentru determinarea polifenolilor din extracte alcoolice (în colaborare cu USAMV Timișoara – Prof. L. Șumălan).
- b) Determinarea compoziției chimice a uleiurilor volatile/esențiale utilizând cromatografia de gaze cuplată cu spectrometria de masă:
 - Au fost realizate extracte de uleiuri esențiale din diverse plante;
 - A fost determinată compoziția chimică a deverselor uleiuri volatile/esențiale atât comerciale cât și obținute în laborator.

În cazul celor două tipuri de extracte a fost determinată activitatea antioxidantă, flavonide și polifenoli totali folosind metoda Folin-Ciocalteu pentru determinări spectrofotometrice.

c) Realizarea de nanoparticule metalice cu continut ridicat de polifenoli (de aur si argint) cu aplicatii medicale utilizand extracte din deseuri post-distilare din plante aromate (in special prin proiectul de tip PD NATWAMED <http://natwamed.uav.ro>).

2. Dezvoltarea de noi metode de analiză a produselor alimentare

În cadrul acestei teme generale au fost identificate și optimizate trei tipuri mari de metode de determinare:

- a) Determinarea acizilor grași din probe alimentare prin cromatografia de gaze cuplată cu spectrometria de masă:
 - Identificarea și optimizarea unor metode de extracție din diverse matrici alimentare;
 - Dezvoltarea metodelor de derivatizare;
 - Punerea la punct și calibrări pentru determinarea prin cromatografie de gaze cuplată cu spectrometrie de masă a acizilor grași;
 - Determinarea profilului de acizi grași din probe de brânză, carne, salam, peste si subproduse din peste;
 - Determinarea profilului de acizi grași din diverse uleiuri (colaborare cu USAMV Cluj-Napoca Prof. A. Bunea).
- b) Determinarea profilului de compuși organici volatili din probe alimentare prin cromatografia de gaze cuplată cu spectrometria de masă:
 - Stabilirea metodelor de prelevare a probelor;
 - Determinarea profilului de compuși volatili a probelor de carne
- c) Determinarea profilului de alcooli si aldehide din probe de rachiu din diverse fructe obtinute in cadrul laboratorului de distilate a FIATPM

3. Studierea influenței factorilor de mediu asupra plantelor

Studierea influenței deficitului de apă (a secetei), dar și a excesului de apă (a inundației) asupra unor plante aromate busuioc (*Ocimum basilicum*), salvie (*Salvia officinalis*), oregano (*Origanum vulgare*), menta (*Mentha piperita*), prin: determinarea parametrilor de fotosinteză prin schimb de gaze, determinarea emisiei de compuși organici volatili prin cromatografie de gaze, determinarea pigmentilor clorofilieni prin cromatografie de lichide de înaltă performanță, determinari biochimice (proiect PN-III-P1-1.1-PD-2019-0349 <http://abistress.uav.ro/>).

Au fost investigat influența stresului abiotic asupra plantelor crescute la dioxid de carbon ridicat pentru a include emisia de compusi volatili în modelele globale și pentru a determina modificările induse ciclului de sinteză a metaboliților secundari (Proiect PN-III-P4-ID-PCE-2020-0410 <https://stressedplants.uav.ro/wordpress/>).

au fost alese speciile cu toleranța diferită față de creșterea dioxidului de carbon și a fost aplicat un stres abiotic (seceta, inundație, ozon, temperaturi ridicate).

S-a aratat că parametrii de fotosinteză (viteza de asimilație și conductanța stomatală) sunt influențați negativ de prezența stresului oxidativ dar și faptul că plantele crescute la concentrații ridicate de dioxid de carbon sunt mai puțin rezistente la acest tip de stres. Acest trend s-a menținut pentru toate speciile testate (*Brassica oleracea* var. *capitata* f. *Rubra*, *Brassica oleracea* var. *capitata*, *Brassica oleracea* var. *botrytis*, *Raphanus sativus* L.; *Salix babilonica*, *S. alba*, *S. fragilis*). În special, plantele din familia *Brassicaceae* sunt mai sensibile la stresul abiotic și au perioade de recuperare mai lungi aparatul fotosintetic fiind afectat.

Compușii organici volatili emiși de către aceste plante nu își modifică compoziția dar există o creștere a emisiilor datorate stresului, în special în ceea ce privește compușii verzi din frunze. Plantele crescute la concentrații mari de dioxid de carbon emit o cantitate mai mare de diverși compusi organici volatili (în special terpene, alcooli, aldehide nesaturate) care intervin în formarea ozonului troposferic.

În ceea ce privește pigmentii clorofilieni și carotenoizi, aceștia sunt influențați de prezența factorilor de stres existând o corelație între intensitatea stresului și scăderea concentrației de clorofile. De asemenea, în perioada de recuperare plantele crescute la concentrații ridicate de dioxid de carbon (mai ales la 1200 ppmv) prezintă cantități semnificativ scăzute de clorofile față de control.

Concentrația de polifenoli și flavonoide crește în cazul expunerii la stres dar această creștere este limitată pentru plantele crescute în atmosferă îmbogățită în dioxid de carbon. Astfel se poate explica toleranța mai scăzută a acestor plante la stresul abiotic. Aceste date sunt confirmate și de microscopie și spectrofotometria IR care arată o scădere în densitatea stomatală și concentrații reduse de compusi cu proteine.



4. Realizarea și testarea de materiale avansate

S-a continuat munca referitoare la tehnologii de obținere a cheratinei și lanolinei din lâna de oaie, astfel s-au elaborat Modele experimentale și Procedee experimentale pentru dezvoltarea de biomateriale pe bază de cheratină cu aplicații medicale.

5. Sisteme inteligente; Sisteme Fuzzy

- Dezvoltarea unor sisteme inteligente;
- Aplicarea sistemelor Fuzzy în domenii diverse de activitate incluzând electronică, psihologie, cloud computing etc.;

6. Studiul influenței poluanților asupra cladirilor de patrimoniu (tema noua)

- Influenta poluantilor din aer asupra patrimoniului medieval din Municipiul Brasov
- Influenta poluarii asupra cladirilor de patrimoniu din Jud. Arad

7. Utilizarea peptidelor penetrante celular in tratamentul cancerului uman (tema noua) in principal in proiectul <https://cpps-cancer.uav.ro/>

- Sinteza de peptide
- Testarea peptidelor privind activitatea antimicrobiana

8. Rețele neuronale, modelare și simulare matematica

În cadrul acestei teme au fost desfășurate cercetările privind:

- Studii privind aplicații de imagistică biomedicală de înaltă rezoluție vs. metode convenționale ca microscopia cu scanare electronica;
- Studii privind modelarea statistică pentru cele mai bune două rețele;
- Dezvoltare interfață grafică și elaborarea documentației de utilizare a softului;
- Simulări privitoare la proiectarea de rețele in special folosind Monte Carlo pentru analiza variațiilor.

B. Relația cu mediul de afaceri

Au fost realizate cercetări pentru SC Fares SA și pentru diverși producători agricoli (în ceea ce privește determinarea compoziției chimice a diverselor uleiuri esențiale) și pentru Universitatea de Științe Agricole și Medicină Veterinară (determinarea acizilor grași din carne) în valoare de 20.000 lei.

Contractul de cercetare cu număr de înregistrare 26/16.07.2022 între Universitatea Aurel Vlaicu și Data Support SRL Arad: Susținerea progresului tehnologic în servicii: modele matematice și soluții concrete, director de proiect Cornel Barna, valoare. 50.000 lei, Membri: Valentina Balas – Director științific, Marius Balas, Ramona Lile, Flavius Petcut, Mihaela Popa, Daniel Alexuta, Tania Gavrila.

C. Participare la acțiuni de promovare și implicare a Universității “Aurel Vlaicu” din Arad

1. Noaptea Cercetătorilor Europeni – în data de 30 septembrie 2022 la Atrium Mall



2. Participarea în cadrul Sesiunii de Comunicări Științifice Studentești a FIATPM și a PhD Student Days în cadrul căreia ICDISTN a acordat două premii speciale pentru Flavia Bortes și Denisa Peteleu (Universitatea Aurel Vlaicu din Arad).



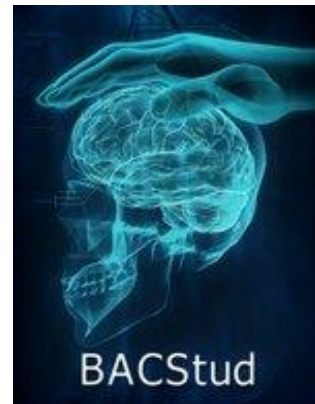
3. Participarea la Ziua Portilor Deschise din cadrul UAV, 4.05.2022.



4. Participarea in cadrul Conferintei Internationale Studentesti, Editia 24, de la UAV, Arad 15-16 iunie, 2022 si la Simpozionul Internațional ”Brainstorming în Agora Cercurilor Studentești”, BACStud2021, Ediția a VII-a - Ediție dedicată în memoria Prof. Univ. Dr. Habil. Dzițac Ioan - cofondator BACStud, 13-15 octombrie 2022, Universitatea Agora.



ARAD,
15-16 June 2022



Director ICDISTN
Prof. Dr. Habil. Lucian Copolovici

Anexa 1 la Raport de cercetare

Perioada ianuarie-decembrie 2022

a) Articole stiintifice

-WOS (ISI)

1. Lupitu, A.; Moisa, C.; Gavrilas, S.; Dochia, M.; Dorina Chambre, D.; Ciutina, V.; Copolovici, D.M.; Copolovici, L., The Influence of Elevated CO₂ on Volatile Emissions, Photosynthetic Characteristics, and Pigment Content in *Brassicaceae* Plants Species and Varieties, *Plants* 2022, 11(7), 973.
2. Bogdan, A.; Chambre, D.; Copolovici, D.M.; Bungau, T.; Bungau, C.C.; Copolovici, L. Heritage building preservation in the process of sustainable urban development: The case of Brasov medieval city, Romania, *Sustainability* 2022, 14(21):6959.
3. Balmus, I.M.; Copolovici, D.; Copolovici, L.; Ciobica, A.; Gorgan, D.L. Biomolecules from plant wastes potentially relevant in the management of irritable bowel syndrome and co-occurring symptomatology, *Molecules* 2022, 27, 16.
4. Coman, E.; Coman, C.; Repanovici, A.; Baritz, M.; Kovacs, A.; Tomozeiu, A.M.; Barbu, S.; Toderici, O. Does sustainable consumption matter? The influence of the covid-19 pandemic on medication use in Brasov, Romania, *Sustainability* 2022, 14, 16.
5. Copolovici, L.; Copolovici, D.M.; Moisa, C.; Lupitu, A. Antagonist temperature variation affects the photosynthetic parameters and secondary metabolites of *Ocimum basilicum* L. and *Salvia officinalis* L, *Plants* 2022, 11(14):1806.
6. Gavrilas, S.; Calinovici, I.; Chis, S.; Ursachi, C.S.; Rat, M.; Munteanu, F.D. White grape pomace valorization for remediating purposes, *Appl. Sci.-Basel* 2022, 12, 15.
7. Gavrilas, S.; Ursachi, C.S.; Perta-Crisan, S.; Munteanu, F.D. Recent trends in biosensors for environmental quality monitoring, *Sensors* 2022, 22, 19.
8. Lazar, S.; Constantin, O.E.; Horincar, G.; Andronoiu, D.G.; Stanciuc, N.; Muresan, C.; Rapeanu, G. Beetroot by-product as a functional ingredient for obtaining value-added mayonnaise, *Processes* 2022, 10, 13.
9. Leopold, L.F.; Coman, C.; Clapa, D.; Oprea, I.; Toma, A.; Iancu, S.D.; Barbu-Tudoran, L.; Suci, M.; Ciorita, A.; Cadis, A.I., et al. The effect of 100-200 nm ZnO and TiO₂ nanoparticles on the in vitro-grown soybean plants, *Colloid Surf. B-Biointerfaces* 2022, 216, 10.

10. Mot, M.D.; Gavrilas, S.; Lupitu, A.I.; Moisa, C.; Chambre, D.; Tit, D.M.; Bogdan, M.A.; Bodescu, A.M.; Copolovici, L.; Copolovici, D.M., et al. *Salvia officinalis* L. Essential oil: Characterization, antioxidant properties, and the effects of aromatherapy in adult patients, *Antioxidants* 2022, 11(5):808.
11. Taschina, M.; Moisa, C.; Lupitu, A.; Copolovici, D.M.; Copolovici, L. Influence of nonsteroidal anti-inflammatory drugs (NSAIDs) on photosynthetic parameters and secondary metabolites of plants from Fabaceae family, *Appl. Sci.-Basel* 2022, 12(13):6323.
12. Mateoc-Sirb, N.; Albu, S.; Rujescu, C.; Ciolac, R.; Tigan, E.; Brinzan, O.; Manescu, C.; Mateoc, T.; Milin, I.A. Sustainable tourism development in the protected areas of maramures, romania: Destinations with high authenticity. *Sustainability* 2022, 14, 24.
13. Olariu, I.; Precup, C.V.; Mot, M.D.; Toma, V.; Toma, I.R.; Negru, D.G.; Sandor, F.M.; Bran, L.R.; Laitin, S.M.D.; Olariu, T. Epidemiological, clinical and anatomopathological analysis in sars_ cov_2 infection in arad. *Rom. J. Leg. Med.* 2022, 30, 87-92.
14. Pascariu, M.C.; Dinca, N.; Cojocariu, C.; Sisu, E.; Serb, A.; Birza, R.; Georgescu, M. Computed mass-fragmentation energy profiles of some acetalized monosaccharides for identification in mass spectrometry. *Symmetry-Basel* 2022, 14, 15.
15. Popescu-Mitroi, M.M.; Popescu-Mitroi, I. Food choices of students with nutritional knowledge br. *Nutr. Clin. Diet. Hosp.* 2022, 42, 34-39.
16. Sarbu, M.; Fabris, D.; Vukelic, A.; Clemmer, D.E.; Zamfir, A.D. Ion mobility mass spectrometry reveals rare sialylated glycosphingolipid structures in human cerebrospinal fluid. *Molecules* 2022, 27, 13.
17. Sarbu, M.; Ica, R.; Sharon, E.; Clemmer, D.E.; Zamfir, A.D. Identification and structural characterization of novel chondroitin/dermatan sulfate hexassacharide domains in human decorin by ion mobility tandem mass spectrometry. *Molecules* 2022, 27, 15.
18. Sarbu, M.; Ica, R.; Zamfir, A.D. Gangliosides as biomarkers of human brain diseases: Trends in discovery and characterization by high-performance mass spectrometry. *Int. J. Mol. Sci.* 2022, 23, 46.
19. Suteanu-Simulescu, A.; Ica, R.; Sarbu, M.; Munteanu, C.; Gadalean, F.; Vlad, A.; Velciov, S.; Gluhovschi, C.A.; Bob, F.; Jianu, C., et al. Early diabetic kidney disease in type 2 diabetes mellitus patients is associated with a particular

- ganglioside profile, identified by high-resolution tandem mass spectrometry: A pilot study. *Nephrol. Dial. Transplant.* 2022, 37, I462-I463.
20. Suteanu-Simulescu, A.; Sarbu, M.; Ica, R.; Petrica, L.; Zamfir, A.D. Ganglioside analysis in body fluids by liquid-phase separation techniques hyphenated to mass spectrometry. *Electrophoresis*, 20.
 21. Suteanu-Simulescu, A.; Zamfir, A.D.; Ica, R.; Sarbu, M.; Munteanu, C.V.A.; Gadalean, F.; Vlad, A.; Bob, F.; Jianu, D.C.; Petrica, L. High-resolution tandem mass spectrometry identifies a particular ganglioside pattern in early diabetic kidney disease of type 2 diabetes mellitus patients. *Molecules* 2022, 27, 17.
 22. Tigan, E.; Blaga, R.L.; Isac, F.L.; Lungu, M.; Milin, I.A.; Tripa, F.; Gavrilas, S. Analysis of sustainable communication patterns during the telework period in western romanian corporations. *Int. J. Environ. Res. Public Health* 2022, 19, 19.
 23. Castro, T.G.; Ferreira, T.; Matama, T.; Munteanu, F.D.; Cavaco-Paulo, A. Acetylation and phosphorylation processes modulate tau's binding to microtubules: A molecular dynamics study. *Biochim. Biophys. Acta-Gen. Subj.* 2023, 1867, 14.
 24. Perta-Crisan, S.; Ursachi, C.S.; Chereji, B.D.; Munteanu, F.D. Oleogels-innovative technological solution for the nutritional improvement of meat products. *Foods* 2022, 12.
 25. V. Beiu, L. Dăuș, M. Jianu, A. Mihai, and I. Mihai, On a Surface Associated with Pascal's Triangle, *Symmetry*, vol. 14, art 411 (pp. 1–12), Feb. 2022.
 26. M. Nagy, S.R. Cowell, and V. Beiu, Survey of Cubic Fibonacci Identities – When Cuboids Carry Weight, *Intl. J. Comp. Comm. & Ctrl.*, vol. 17, art. 4616 (pp. 1–20), Apr. 2022.
 27. V.-F. Drăgoi, and V. Beiu, Fast Reliability Ranking of Matchstick Minimal Networks, *Networks*, vol. 79, no. 4, pp. 479–500, Jun. 2022.
 28. SA Jose, R Raja, BI Omede, RP Agarwal, J Alzabut, J Cao, VE Balas, Mathematical modeling on co-infection: transmission dynamics of Zika virus and Dengue fever, *Nonlinear Dynamics* 2022, 1-36.
 29. SA Jose, R Ramachandran, D Baleanu, HS Panigoro, J Alzabut, VE Balas, Computational dynamics of a fractional order substance addictions transfer model with Atangana-Baleanu-Caputo derivative, *Mathematical Methods in the Applied Sciences*, 1-18.
 30. Dana Rad, Lavinia Denisia Cuc, Ramona Lile, Valentina E Balas, Cornel Barna, Mioara Florina Pantea, Graziella Corina Bâtcă-Dumitru, Silviu Gabriel Szentesi, Gavril Rad, A Cognitive Systems Engineering Approach Using Unsupervised Fuzzy C-Means Technique, Exploratory Factor Analysis and Network Analysis-A

- Preliminary Statistical Investigation of the Bean Counter Profiling Scale Robustness, *International journal of environmental research and public health* 2022, 19(19), 1-19.
31. MU Asad, J Gu, U Farooq, VE Balas, MM Balas, G Abbas, An Improved Composite State Convergence Scheme with Disturbance Compensation for Multilateral Teleoperation Systems, *Studies in informatics and control* 2022, 31(3), 43-52.
 32. SA Jose, R Raja, J Alzabut, G Rajchakit, J Cao, VE Balas, Mathematical modeling on transmission and optimal control strategies of corruption dynamics, *Nonlinear Dynamics* 2022, 109(4), 3169-3187.
 33. Dana Rad, Gilbert C Magulod Jr, Evelina Balas, Alina Roman, Anca Egerau, Roxana Maier, Sonia Ignat, Tiberiu Dughi, Valentina Balas, Edgar Demeter, Gavril Rad, Roxana Chis, A Radial Basis Function Neural Network Approach to Predict Preschool Teachers' Technology Acceptance Behavior, *Frontiers in Psychology* 2022, 13, 1-11.
 34. SA Jose, R Raja, Q Zhu, J Alzabut, M Niezabitowski, VE Balas, An Integrated Eco-Epidemiological Plant Pest Natural Enemy Differential Equation Model with Various Impulsive Strategies, *Mathematical Problems in Engineering* 2022, 1-23.
 35. R Thomas, SA Jose, R Raja, J Alzabut, J Cao, VE Balas, Modeling and analysis of SEIRS epidemic models using homotopy perturbation method: A special outlook to 2019-nCoV in India, *International Journal of Biomathematics* 2022, 15(8), 1-18.
 36. SA Jose, R Ramachandran, J Cao, J Alzabut, M Niezabitowski, VE Balas, Stability analysis and comparative study on different eco-epidemiological models: Stage structure for prey and predator concerning impulsive control, *Optimal Control Applications and Methods* 2022, 43(3), 842-866.
 37. Claudia Abineza, Valentina E. Balas, Philibert Nsengiyumva, A machine-learning-based prediction method for easy COPD classification based on pulse oximetry clinical use, *Journal of Intelligent & Fuzzy Systems* 2022, 43(2), 1683-1695.
 38. Mihaela Popa, Daniel Alexuta, Valentina E. Balas, Fuzzy-interpolative control of temperatures for the intelligent rooftop greenhouse, *Journal of Intelligent & Fuzzy Systems* 2022, 43(2), 1793-1797.
 39. Benito G. Mng'ong'o, Dana Rad, David Koloseni, Valentina E. Balas, Application of fuzzy TOPSIS in assessing performance of agro-processed organic crops: A case of Sustainable Agriculture Tanzania (SAT) in Morogoro, *Journal of Intelligent & Fuzzy Systems* 2022, 43(2), 1811-1826.

40. AB Moghadam, MK Rafsanjani, VE Balas, PCG/PCGML evaluations: Introducing panda evaluation using the soft launch, *Journal of Intelligent & Fuzzy Systems* 2022, 43(2), 2191-2210.
41. Jose, Sayooj Aby; Raja, Ramachandran, Zhu, Quanxin; Alzabut, Jihad; Niezabitowski, Michal; Balas, Valentina E., Impact of strong determination and awareness on substance addictions: A mathematical modeling approach, *Mathematical Methods in the Applied Sciences* 2022, 45(8), 4140-4160.
42. Sabih Muhammad, Umer, Mu-hammad, Farooq Umar, Gu Jason, Balas Marius M., Asad Muhammad Usman, Qureshi Khurram Ka-rim, Khan Irfan A., Abbas, Ghulam, Image processing based fault classification in power systems with classical and intelligent techniques, *Journal of Fuzzy and Intelligent Systems* 2022, 43(2), 1921-1932.
43. Chandrakanta Mahanty, Raghvendra Kumar, Brojo Kishore Mishra, Cornel Barna, COVID-19 detection with x-ray images by using transfer learning, *Journal of Intelligent & Fuzzy Systems* 2022, 43(2), 1717-1726.
44. Malaya Kumar Nath, Samarendra Dandapat, Cornel Barna, Automatic detection of blood vessels and evaluation of retinal disorder from color fundus images, *Journal of Intelligent & Fuzzy Systems* 2022, 38(5), 6019-6030.
45. Dana Rad, Gavril Rad, Roxana Maier, Edgar Demeter, Anca Dicu, Mihaela Popa, Daniel Alexuta, Dan Floroian, Vasile Doru Mărineanu, A fuzzy logic modelling approach on psychological data, *Journal of Intelligent & Fuzzy Systems* 2022, 43(2), 1727-1737.

-WOS Proceedings

1. Beiu, R.M.; Duma, V.F.; Mnerie, C.A.; Beiu, A.C.; Dochia, M.; Copolovici, L.; Dobre, G.; Bradu, A.; Podoleanu, A., Optical Coherence Tomography versus Microscopy for the Study of Aloe Vera Leaves, Proceedings Volume 12138, Optics, Photonics and Digital Technologies for Imaging Applications VII; 121380A (2022) <https://doi.org/10.1117/12.2620766s>; SPIE Photonics Europe, 2022, Strasbourg.
2. V. Beiu, S. Hoară, and R.-M. Beiu, Bridging Reliability to Efficiency – Consecutive Elegant and Simple Design, Intl. Conf. Comp. Comm. & Ctrl. (ICCCC2022), pp. 387–400, Baile Felix, Romania, 16-20 May 2022, https://doi.org/10.1007/978-3-031-16684-6_33
3. L. Dăuș, V.-F. Drăgoi, M. Jianu, D. Bucerzan, and V. Beiu, On the Roots of Certain Reliability Polynomials, Intl. Conf. Comp. Comm. & Ctrl. (ICCCC2022), pp. 401–

- 414, Baile Felix, Romania, 16-20 May 2022, https://doi.org/10.1007/978-3-031-16684-6_34
4. M. Jianu, L. Dăuș, S. Hoară, and V. Beiu, Using Delta-Wye Transformations for Estimating Network's Reliability, Intl. Conf. Comp. Comm. & Ctrl. (ICCCC2022), pp. 415–426, Baile Felix, Romania, 16-20 May 2022, https://doi.org/10.1007/978-3-031-16684-6_35
 5. M. Tache, S. Hoară, V.-F. Drăgoi, and V. Beiu, Green AI from Kirchhoff to Shannon, Intl. Conf. Comp. Comm. & Ctrl. (ICCCC2022), pp. 433–443, Baile Felix, Romania, 16-20 May 2022, https://doi.org/10.1007/978-3-031-16684-6_37
 6. A.-C. Beiu, R.-M. Beiu, and V. Beiu, Optimal Design of Linear Consecutive Systems, ACM Intl. Conf. Nanoscale Comp. & Comm. (NanoCom2022), Barcelona Catalunya, Spain, 05-07 Oct. 2022, <https://doi.org/10.1145/3558583.3558863>
 7. M. Tache, V.-F. Drăgoi, and V. Beiu, On Low Power Redundant Systems, Intl. Workshop Soft Comp. Appls. (SOFA2022), Arad, Romania, 21-23 Nov. 2022, <https://doi.org/prnding>
 8. R.-M. Beiu, S. Hoară, and V. Beiu, Quantum Is Making Hammocks Ubiquitous, Intl. Workshop Soft Comp. Appls. (SOFA2022), Arad, Romania, 21-23 Nov. 2022, <https://doi.org/prnding>
 9. R.-M. Beiu, V.-F. Drăgoi, and V. Beiu, 3D Hammocks for Communications, Intl. Workshop Soft Comp. Appls. (SOFA2022), Arad, Romania, 21-23 Nov. 2022, <https://doi.org/prnding>
 10. Asad, Muhammad Usman; Gu, Jason; Farooq, Umar; Dey, Rajeeb; Balas, Valentina E.; Abbas, Ghulam, Intelligent Obstacle Avoidance Controller for QBot2, 7th International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS), May 2022, NIT Silchar, IFAC PAPERSONLINE Volume 55, Issue 1, WOS:000801203200020, ISSN 2405-8963, pp. 120-125, DOI10.1016/j.ifacol.2022.04.020
 11. Asad, Muhammad Usman; Gu, Jason; Farooq, Umar; Dey, Rajeeb; Balas, Valentina E.; Abbas, Ghulam, Teleoperation of Multi-Degrees-of-Freedom Manipulator through Composite State Convergence Scheme, 7th International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS), May 2022, NIT Silchar, IFAC PAPERSONLINE Volume 55, Issue 1, WOS:000801203200021, ISSN 2405-8963, pp. 126-139, DOI10.1016/j.ifacol.2022.04.021
 12. Cherfouh, Koceila; Gu, Jason; Farooq, Umar; Asad, Muhammad Usman; Dey, Rajeeb; Balas, Valentina E., Bilateral Teleoperation Control of a Bipedal Robot Gait Using a Manipulator, 7th International Conference on Advances in Control and

Optimization of Dynamical Systems (ACODS), May 2022, NIT Silchar, IFAC PAPERSONLINE Volume 55, Issue 1, WOS:000799193600005, ISSN 2405-8963, pp. 765-770, DOI10.1016/j.ifacol.2022.04.125

-BDI

1. Szabo, M.; Dochia, M.; Müller, V; Jitaru, L., The study of the physico-mechanical properties of fashion tights compared to medicinal tights, *International Journal of Modern Manufacturing Technologies* 2022, Vol. XIV, Nr. 2, 251-256, ISSN 2067–3604, <https://doi.org/10.54684/ijmmt.2022.14.2.251>.
2. Dorina Rodica Chambre, Mihaela Dochia, FT-IR characterization of cellulose crystallinity from raw bast fibers, *Scien. Tech. Bull-Chem. Food Sci. Eng.*, Vol. 18 (XIX), (2021);10-17, ISSN 1582-1021, e-ISSN 2668-4764, file:///C:/Users/user/Downloads/106-163-PB.pdf (aparut in 2022).
3. Anca Mihaela Dicu, Simona Perța-Crișan, Ionela-Marinela Rotar, Claudiu-Ștefan Ursachi, 2022, Reformulated meat product with wild garlic and chestnut flour, *Journal of Agroalimentary Processes and Technologies* 2022, 28(1), 89-95, ISSN 2069-0053
4. M. Jianu, L. Dăuș, V.-F. Drăgoi, V. Beiu, Tight Bounds on the Coefficients of Consecutive- k -out-of- $n:F$ Systems, *Tech. Rep. arXiv, Discrete Mathematics [cs.DM]*, art. 2003.12419, <https://doi.org/10.48550/arXiv.2003.12419>
5. SR Gampa, SK Mangipudi, K Jasthi, P Goli, D Das, VE Balas, Pareto optimality based PID controller design for vehicle active suspension system using grasshopper optimization algorithm, *Journal of Electrical Systems and Information Technology* 2022, Vol. 9, Nr. 1, 1-18.
6. W Liu, J Liu, T Peng, G Wang, VE Balas, O Geman, HW Chiu, Prediction of Parkinson's disease based on artificial neural networks using speech datasets, *Journal of Ambient Intelligence and Humanized Computing* 12 Aprilie 2022, 1-14.

-alte tipuri de publicatii

b) Comunicari cu rezumate publicate la conferinte/simpozioane stiintifice:

- Internationale

1. Beiu, R.M.; Duma, V.F.; Mnerie, C.A.; Beiu, A.C.; Dochia, M.; Copolovici, L.; Dobre, G.; Bradu, A.; Podoleanu, A., Optical Coherence Tomography versus Microscopy for the Study of Aloe Vera Leaves, Proceedings Volume 12138, Optics,

Photonics and Digital Technologies for Imaging Applications VII; 121380A (2022) <https://doi.org/10.1117/12.2620766s>; SPIE Photonics Europe, 3-7 Aprilie, 2022, Strasbourg (prezentare orală).

2. Szabo, M.; Dochia, M.; Müller, V; Jitaru, L., The study of the physico-mechanical properties of fashion tights compared to medicinal tights, the *10th International Conference Modern Technologies in Industrial Engineering - ModTech 2022*, Mamaia, Romania, 22–25 Iunie, 2022, (prezentare orală on-line).
3. Mihaela Tociu, Dorina Rodica Chambre, Michaela Dina Stanescu, Highlighting the presence of antioxidants in the products obtained by the valorization of grape seeds, A XXXVI-a Conferinta Nationala de Chimie – CNChim-2022, 4-7 octombrie 2022, Calimanesti-Caciulata, Romania. <https://chimcomplex.com/cnchim-2022/>
4. Anca Mihaela Dicu, Simona Perța-Crișan, Ionela-Marinela Rotar, Claudiu-Ștefan Ursachi, *Reformulated meat product with wild garlic and chestnut flour*, Multidisciplinary Conference on Sustainable Development, 26-27 Mai, 2022, Timișoara
5. Mirabela-Elena Raț (Botici), Florentina-Daniela Munteanu, Wine waste management, 6th International Scientific Conference on the Development of Rural Environmen, 17 Noiembrie 2022, Szarvas, Ungaria
6. Bianca-Denisa Chereji, Florentina-Daniela Munteanu Wool sheep – a valuable fibre that affects the environment as an unvalorised waste 6th International Scientific Conference on the Development of Rural Environmen, 17 Noiembrie 2022, Szarvas, Ungaria
7. Bianca-Denisa Chereji, Florentina-Daniela Munteanu, “Sheep wool waste – environmental impact and valorisation possibilities”, ICCE 2022, 6th International Conference on Chemical Engineering, Iași, România, 5-7 Octombrie 2022
8. Bianca-Denisa Chereji , Florentina-Daniela Munteanu, “Valorisation of the sheep wool waste for the removal of heavy metals from the environment” One Health International Student Conference, București, România, 4-7 Decembrie 2022,
9. Bianca-Denisa Chereji , Florentina-Daniela Munteanu, “The impact of sheep waste wool on the environment”, 11th Edition of the International Conference “Agriculture for Life, Life for Agriculture”, București, România, 2-4 Iunie 2022,
10. Cristian Moisa, Andreea Lupitu, Lucian Copolovici, Dana Copolovici, Green Synthesis of Silver and Gold Nanoparticles Using Extracts Recovered from Distillate Biomass, International Conference on Agriculture for Life, Life for Agriculture, 2-4 June 2022, Bucharest.

11. Flavia Bortes, Andreea Lupitu, Cristian Moisa, Dana Copolovici, Virgiliu Ciutina, Denisa Peteleu, Lucian Copolovici, The Influence of Elevated Carbon Dioxide on *Raphanus sativus* Plants, International Conference on Agriculture for Life, Life for Agriculture, 2-4 June 2022, Bucharest.
12. Lucian Copolovici, Andreea Lupitu, Cristian Moisa, Dana Copolovici, The Influence Of Elevated Carbon Dioxide On Plants Drought Tolerance, International Conference on Agriculture for Life, Life for Agriculture, 2-4 June 2022, Bucharest.
13. Andreea Lupitu, Cristian Moisa, Dana Copolovici, Lucian Copolovici, Extreme Temperatures Responses of *Ocimum basilicum* L. Plants, International Conference on Agriculture for Life, Life for Agriculture, 2-4 June 2022, Bucharest.
14. Andreea Tepeneu, Lucian Copolovici, Cristian Moisa, Andreea Lupitu, Dana Copolovici, A Long Term Monitoring of Volatile Organic Compounds Particulate Matter, Carbon Dioxide and Formaldehyde in a General Shop, International Conference on Agriculture for Life, Life for Agriculture, 2-4 June 2022, Bucharest.
15. Dana Copolovici, Carmen Popa, Andreea Lupitu, Marilena Maereanu, Dorina Chambre, Cristian Moisa, Lucian Copolovici, Enzymatic Fish Protein Hydrolysates, International Conference on Agriculture for Life, Life for Agriculture, 2-4 June 2022, Bucharest.
16. Flavia Bortes, Lucian Copolovici, Cristian Moisa, Andreea Lupitu, Virgiliu Ciutina, Dana Copolovici, *Raphanus sativus* plants: a model for studying plant effects growth at elevated carbon dioxide and ozone stress, The 21st International Conference "Life Sciences for Sustainable Development", 15th– 17th September, 2022, Cluj-Napoca, Romania.
17. Lucian Copolovici, Cristian Moisa, Andreea Lupitu, Flavia Bortes, Virgiliu Ciutina, Dana Copolovici, The influence of elevated carbon dioxide on Brassicaceae drought tolerance, The 21st International Conference "Life Sciences for Sustainable Development", 15th– 17th September, 2022, Cluj-Napoca, Romania.
18. Dana Maria Copolovici, Cristian Moisa, Andreea Ioana Lupitu, Lucian Copolovici, Peptide applications in biotechnology and biomedicine, The 21st International Conference "Life Sciences for Sustainable Development", 15th– 17th September, 2022, Cluj-Napoca, Romania.
19. Andreea Lupitu, Cristian Moisa, Virgiliu Ciutină, Mihaela Dochia, Dana Copolovici, Lucian Copolovici, Salicaceae plants responses to climate change and rising carbon levels, The 21st International Conference "Life Sciences for Sustainable Development", 15th– 17th September, 2022, Cluj-Napoca, Romania.

20. Denisa Peteleu, Lucian Copolovici, Cristian Moisa, Andreea Lupitu, Dana Copolovici, The influence of elevated carbon dioxide and ozone stress on red cabbage plants, The 21st International Conference "Life Sciences for Sustainable Development", 15th– 17th September, 2022, Cluj-Napoca, Romania.
21. Cristian Moisa, Andreea Lupitu, Lucian Copolovici, Dana Maria Copolovici, Cell-penetrating antimicrobial peptides, The 21st International Conference "Life Sciences for Sustainable Development", 15th– 17th September, 2022, Cluj-Napoca, Romania.
22. Lucian Copolovici, Andreea Ioana Lupitu, Cristian Moisa, Dana Maria Copolovici, Design of Potential Cell-Penetrating Peptides for Anti-cancer Therapy, 2th Edition of the OncoHub Conference, 21 - 23 September 2022, Poiana Braşov.
23. Lucian Copolovici, Andreea Lupitu, Cristian Moisa, Flavia Bortes, Simona Gavrilas, Dana Copolovici, Elevated carbon dioxide influences on plants polyphenols, The 14th Edition of the Symposium with International Participation New trends and strategies in the chemistry of advanced materials with relevance in biological systems, technique and environmental protection, 20-21 October 2022, Timisoara.
24. Dana-Maria Copolovici, Carmen Popa, Ana-Maria Toloş, Cristian Moisă, Andreea Lupitu, Silvia Elena Moţ, Lucian Copolovici, Antimicrobial cell-penetrating peptides, The 14th Edition of the Symposium with International Participation New trends and strategies in the chemistry of advanced materials with relevance in biological systems, technique and environmental protection, 20-21 October 2022, Timisoara.
25. Denisa Peteleu, Andreea Lupitu, Cristian Moisa, Virgiliu Ciutină, Dana Copolovici, Lucian Copolovici, The impact of high carbon dioxide and ozone on plants tolerance to stress, International Conference and XXXIX Scientific Session of the Romanian Society for Cell Biology (RSCB) 21st-23rd October 2022, Cluj-Napoca.
26. Flavia Bortes, Lucian Copolovici, Cristian Moisa, Andreea Lupitu, Dana Copolovici, *Raphanus sativus* plants exposed to high carbon dioxide concentrations and ozone stress, International Conference and XXXIX Scientific Session of the Romanian Society for Cell Biology (RSCB) 21st-23rd October 2022, Cluj-Napoca.
27. Lucian Copolovici, Andreea Lupitu, Cristian Moisa, Flavia Bortes, Denisa Peteleu, Virgiliu Ciutina, Dana Copolovici, Carbon dioxide's impact on *Brassicaceae* drought tolerance, International Conference and XXXIX Scientific Session of the Romanian Society for Cell Biology (RSCB) 21st-23rd October 2022, Cluj-Napoca.

28. Andreea Lupitu, Cristian Moisa, Dana Copolovici, Lucian Copolovici, The effects of rising carbon levels and climate change on plants in the family *Salicaceae*, International Conference and XXXIX Scientific Session of the Romanian Society for Cell Biology (RSCB) 21st-23rd October 2022, Cluj-Napoca.
29. Moisa Cristian, Andreea Lupitu, Lucian Copolovici, Dana Copolovici, Green synthesis mediated by secondary metabolites extracted from stressed plants, International Conference and XXXIX Scientific Session of the Romanian Society for Cell Biology (RSCB) 21st-23rd October 2022, Cluj-Napoca.
30. Dana Maria Copolovici, Cristian Moisa, Andreea Ioana Lupitu, Lucian Copolovici, Cell-penetrating peptides as non-viral vectors of therapeutics, International Conference and XXXIX Scientific Session of the Romanian Society for Cell Biology (RSCB) 21st-23rd October 2022, Cluj-Napoca.
31. Ana-Maria Tolos, Carmen Popa, Cristian Moisa, Andreea Ioana Lupitu, Mihaela Dochia, Dorina Chambre, Dana G. Radu, Lucian Copolovici, Dana Maria Copolovici, Mechanisms and applications of cell-penetrating peptides, International Conference and XXXIX Scientific Session of the Romanian Society for Cell Biology (RSCB) 21st-23rd October 2022, Cluj-Napoca.
32. Cristian Moisa, Andreea I. Lupitu, Dorina Chambre, Lucian Copolovici, Dana Maria Copolovici, Synthesis of gold nanoparticles from lavender biomass as a sustainable resource, The XVIIIth International Symposium PRIOCHEM "Priorities of Chemistry for a Sustainable Development", October 26-28, 2022, Bucharest.
33. Gavrilăș Simona, Lupitu Andreea, Moisă Cristian , Borteș Flavia, Peteleu Denisa, Copolovici Dana, Copolovici Lucian, The simultaneous effect of increasing carbon dioxide and decreasing water intake on antioxidants levels in different plants, "Life sciences today for tomorrow" International Congress, 20th-21th October 2022, Iasi, Romania.
34. Lucian Copolovici, Andreea Lupitu, Cristian Moisa, Flavia Bortes, Denisa Peteleu, Virgiliu Ciutina, Dana Copolovici, The effect of high carbon dioxide on plants drought tolerance, 7th Edition of Global Conference on Plant Science and Molecular Biology, 1-2 September 2022, Paris, France.
35. Simona Gavrilaș, Andreea Lupitu, Cristian Moisă, Flavia Borteș, Denisa Peteleu, Dana Copolovici, Lucian Copolovici, The Influence of Both Elevated Carbon Dioxide and Drought on Plants Polyphenols, 4th International Environmental Chemistry (EnviroChem) Congress, 30 October-2 November 2022, Antalya, Turkey.
36. Andreea Tepeneu, Cristian Moisa, Andreea Lupitu, Dana Copolovici, Lucian Copolovici, Analysing the concentrations of carbon dioxide, formaldehyde, and

volatile organic compounds in a general store, IV-International Baku Conference on Scientific Research, November 30 - December 01, 2022, Baku-Azerbaijan.

37. Balas, V. E., International Workshop on Fractional Calculus and Computational Intelligence, organized by Department of Mathematics, Govt. MGM PG College, 6 January 2022, Itarsi, India, http://www.mphighereducation.nic.in/InstitutePortal/Public/WorkShop_and_Seminars.aspx?InstId=MzQ3&fbclid=IwAR2G2Y-6D70bN8asxQW-zTGFX-22B7P-EMUT_fiz-2rOgbGSR8BWxGDJMUw
38. Balas, V. E., guest of Honour and Publication Chair to The 3rd International Conference on Electrical and Electronics Engineering, January 8-9, 2022, organized by: School of Engineering, University of Malaya, Malaysia & Faculty of Engineering, Bharath Institute of Higher Education & Research (Deemed to be University), Chennai, INDIA. www.iceee.in
39. Balas, V. E., invited speaker to 6th International Conference on Data Management, Analytics & Innovation, Pune, India, January 14-16, 2022, ICDMAI 2022-16 Jan 2022, *Multidisciplinary Soft Computing Techniques and Applications*, https://icdmai.org/icdmai_2022
40. Balas, V. E., key note address to ICEST-2022-GICCL, 21 January, Government Islamia College Civil Lines, Lahore Pakistan
41. Balas, V. E., speaker to the first edition of International AI Summit #1 with the theme 'AI for Everyone', organized by the IEEE Student Branch & Department of Artificial Intelligence, G H Raisoni Institute of Engineering and Technology, 28-29 January, 2022, Nagpur, INDIA. *Engineering Applications of Artificial Intelligence and New AI Regulations*. <https://edu.ieee.org/in-ghrietn/international-ai-summit-1/>
42. Balas, V. E., keynote speakers in The 8th World Conference on Soft Computing dedicated to the 100th Birthday Anniversary and research heritage of professor LOTFI A. ZADEH, February 03-05, 2022, Baku, Azerbaijan, *Soft Computing Applications*, <https://www.wconsc2021.com/>
43. Balas, V. E., Invited Speaker to 1st International Conference on Computational Intelligence for Engineering and Management Applications (CIEMA) – 2022, (March 26th – 27th, 2022), Regional Association for Security and Crisis Management, Serbia; Mathematical Institute of the Serbian Academy of Sciences and Arts; MCKV Institute of Engineering, West Bengal, India; CT Institute of Engineering, Management & Technology, Punjab, India. *Advances in Computational Intelligence. Methodologies and Applications*.

44. Balas, V. E., Keynote Speaker to the 3rd International Conference on ICT for Digital, Smart, and Sustainable Development, organized by Department of Computer Science and Engineering, School of Engineering Sciences & Technology, Jamia Hamdard, March 24 - 25, 2022, New Delhi, India. Many thanks for the invitation. *Intelligent Roof-top Greenhouses for Sustainable Development.*
45. Balas, V. E., Chief Guest in AICTE Sponsored Short Term Training Program (STTP) Phase-2 on “Machine Learning and Computer Vision” 21-03-2022, organized Computer Science & Engineering Department, Tripura Institute of Technology, Narsingarh, Agartala, INDIA. *Tackling Deepfakes*
46. Balas, V. E., Keynote Speaker in 2nd International Conference on Control Science and Electric Power Systems (CSEPS 2022), March 18-20, 2022 in Wuhan, CHINA. <http://iccseps.org/speaker>, *Intelligent Control Techniques and Applications*
47. Balas, V. E., Chair of the Publicity Committee and Chief Guest of the Seventh International Conference on ADVANCES IN CONTROL & OPTIMIZATION OF DYNAMICAL SYSTEMS, ACDOS 2022, Jointly organized by: National Institute of Technology Silchar & Indian Institute of Technology Guwahati, NIT Silchar, Assam, India, FEBRUARY 22-25, 2022. <http://acods2022.nits.ac.in/conf.html>
48. Balas, V. E., Keynote Speaker to International Webinar on Intelligent Optimization Techniques and Their Real Life Applications, Feb 25, 2022 - Feb 27, 2022, organized by Department of Mathematics Punjabi University (Patiala), INDIA, In Collaboration With UNIVERSITY OF WOLVERHAMPTON + UK, Mizan-Tepi University ETHIOPIA, MathTech Thinking Foundation INDIA. *Intelligent Optimization Control Methods Using Soft Computing Techniques*, <http://punjabiuniversity.ac.in/Pages/SF/TQR/P17B42AB1.pdf>
49. Balas, V. E., Keynote Speaker to The 3rd Hybrid International Conference on Recent Development in Engineering & Technology, ICRDET-2022, February 25-26, 2022, jointly organized by Rajasthan Technical University, Kota and Anand International College of Engineering, Jaipur, INDIA. *Phase Trajectory Qualitative Analysis and Application*, <http://anandice.ac.in/icrdet22/index.html>
50. Balas, V. E., Guest of Honour and Symposium Chair to 3rd DOCTORAL SYMPOSIUM ON COMPUTATIONAL INTELLIGENCE (DOSCI 2022), organised by Institute of Engineering & Technology, a constituent college of Dr APJ Abdul Kalam Technical University Lucknow, INDIA, in association with University of Calabria, Italy, 5th March, 2022. <http://dosci-conf.com/>
51. Balas, V. E., Invited talk at Chandigarh University: "International conclave on Use of Technology in Health Care and Medical Sciences", organized by Chandigarh

- University in association with Indian Science Congress Association Kanpur Chapter, 15-16 April, 2022. *Artificial Intelligence Trends in Healthcare*
52. Balas, V. E., Invited Speaker and Panelist to The 4th Edition of International Conference on Advanced Intelligent Systems for Sustainable Development, AI2SD'2022, May 25, 2022, Mohammed V University ENSAM, Rabat, MOROCCO. Track - AGRICULTURE 4.0 AND FOOD SECURITY, *Smart Agriculture and Global Challenges on Food Security*, <http://conferences.academyskills.net/ai2sd/index.html>
53. Balas, V. E., Keynote Speaker to CISES2022: International Conference on Computational Intelligence and Sustainable Engineering Solutions, G.L Bajaj Institute of Technology and Mangement Greater Noida, May 20-22, 2022, Greater Noida, Gautam Budh Nagar, INDIA. *Recent Trends in Computational Intelligence Enabled Research*, <https://www.glbitm.org/cises2022/>
54. Balas, V. E., Invited Speaker to The 9th International Conference on Computers Communications and Control (ICCCC), May 16-20, 2022, Băile Felix, Oradea, România. *Advances in Soft Computing and Applications*, <http://univagora.ro/en/icccc2022/keynote/>
55. Balas, V. E., Keynote Speaker, Chief Guest and Editorial Chair to International Conference on Artificial Intelligence Techniques For Electrical Engineering Systems, AITEES-2022, May 6-7, 2022, organized by the Department of Electrical and Electronics Engineering Seshadri Rao Gudlavalleru Engineering College(Autonomous), Gudlavalleru, Andhra Pradesh, INDIA. *Advanced Artificial Intelligence Techniques and Applications*, <https://aitees2022.com/>
56. Balas, V. E., Invited Speaker to International Conference on Mathematical Analysis and Applications, 2022 (ICOMAA-2022), June 28-29, 2022, Department Of Mathematics, University of Kalyani, Kalyani, India. *Recent Advances in Computational Intelligence. Techniques and Its Applications*, <https://klyuniv.ac.in/.../2022/06/ICOMAA-2022-Brochure.pdf>
57. Balas, V. E., Panelist to IEEE World Congress on Computational Intelligence, WCCI 2022, 18-23 July, 2022, Centro Congressi Padova, ITALY. *Green Computing*, <https://wcci2022.org/programs/>
58. Balas, V. E., Invited Speaker in the International Conference on “Latest Trends in Engineering and Technology 2022 (ICLTET 2022)” at CEC Jhanjeri, 15th July 2022, Mohali, Punjab, INDIA. *Advancing Sustainability Through Smart Greenhouses*
59. Balas, V. E., Keynote Speaker to The Fifth International Conference on Computational Intelligence and Communication Technologies (CCICT'2022) 8-9

July, 2022, Sonapat (NCR), INDIA. *Recent Trends in Artificial Intelligence*, Conference URL: <http://cict22.bmiet.net>, <https://bmiet.in/2022/03/ccict-2022-conference-cfp/>

60. Balas, V. E., Keynote Speaker to International Conference on IoT Based Control Networks and Intelligent Systems, ICICNIS 2022, 1-2, July 2022 | Bengaluru, INDIA. *Smart Greenhouses and IoT*, <http://icicnis.com/2022/keynote.html>
61. Balas, V. E., Special Invitee and Editorial Member to The International Conference on Advances in Computer Engineering and Communication Systems (ICACECS-2022), 11th – 12th August 2022, organized by the Department of Computer Science & Engineering from Vallurupalli Nageswara Rao Vignana, Jyothi Institute Of Engineering and Technology, Hyderabad, India. <https://www.icacecs.org/index.php>
62. Balas, V. E., 4th International Conference on Mathematical Modelling, Applied Analysis And Computation (ICMMAAC-21), 05-07 August 2021, organized by Department of Mathematics (Faculty of Science), JECRC University, Jaipur, India, <http://sws.jecrcuniversity.edu.in:81/ICMMAAC-21/INDEX/>
63. Balas, V. E., Special Invitee and Editorial Member to The International Conference on Advances in Computer Engineering and Communication Systems (ICACECS-2022), 11th – 12th August 2022, organized by the Department of Computer Science & Engineering from Vallurupalli Nageswara Rao Vignana, Jyothi Institute of Engineering and Technology, Hyderabad, India. <https://www.icacecs.org/index.php>
64. Balas, V. E., Keynote Speaker to The 6th International Conference on “Microelectronics and Telecommunication Engineering” organized by the Department of Electronic & Communication Engineering, SRM Institute of Science and Technology, Delhi NCR Campus, Ghaziabad, India on 23-24 September, 2022. *Microelectronics and nanotechnology Pathways*
65. Balas, V. E., Chief Guest at the inaugural ceremony of the 10th International Conference on Innovations in Computer Science and Engineering, organized by the Department of Computer Science and Engineering and the Department of Information Technology, Guru Nanak University, 16-17 September, 2022, Hyderabad, India. <http://www.icicse-gni.org/>
66. Balas, V. E., Keynote Speaker to 2022 International Symposium on Design Studies and Intelligence Engineering (DSIE2022), October 29-30, 2022, Hangzhou, CHINA. *New Development Trends of Intelligent Greenhouses*, <http://www.dsieconf.org/index.htm>
67. Balas, V. E., keynote speaker to IEEE ICA-ACCA 2022, IEEE International Conference on Automation (ICA) XXV Congreso de la Asociación Chilena de

- Control Automático (ACCA), October 24-28, 2022, Universidad de Talca, Curicó, Chile. *Recent Advances in Soft Computing and Applications*, https://controlautomatico.org/ica_acca2022/
68. Balas, V. E., Keynote Speaker in the 18th EURECA 2022 - International Engineering Research Conference, 30th of November 2022 organized by the School of Engineering, Taylor's University, Malaysia. *Sustainable Energy Systems and its Control*, https://eureca18.taylors.edu.my/keynote_speakers.html
69. Balas, V. E., Invited Speaker to Faculty Development Program (FDP), on November 12, 2022, in the Department of Computer Science and Engineering of G L Bajaj Institute of Technology and Management, Greater Noida, UP, India. *Place and Role of Intelligent Systems in Computer Science*.
70. Balas, V. E., Keynote Speaker to the International Interdisciplinary Conference on Mathematics, Engineering & Science (MESIICON 2022), November 11-12, organized by Dr. B. C. Roy Engineering College, Durgapur, India. *Next Generation Computing Technologies Brain-Inspired*, <https://mesiicon.in/index.html>
71. Balas, V. E., Special Guest to the 41 years of Rough Set Day, organized on 10.11.2022, by Fuzzy Rough Set Association, Agartala, Tripura, India.
72. Balas, V. E., Keynote Speaker to 2022 IEEE Silchar Subsection Conference IEEE SILCON-2022, 4-6 November 2022, National Institute of Technology Silchar, India. *Current and Future Trends in Artificial Intelligence and Applications*, <https://www.ieeesilcon.in/>
73. Balas, V. E., Special Guest and General Chair to the 3rd International Conference on Modeling Simulation and Optimization, CoMSO 2022, December 21-23, 2022, National Institute of Technology Silchar, India. <http://comso.nits.ac.in/index.html>
74. Balas, V. E., Speaker to the 2nd Online International Conference on Artificial Intelligence and Sustainable Computing for Smart Cities (AIS2C2), 21-22, December, 2022, organized by the Department of Computer Science and Engineering, University School of Information and Communication Technology, Gautam Buddha University, Greater Noida, India. *Sustainable Smart Cities*, <https://www.aiscindia.co.in/>
75. Balas, V. E., Keynote Speaker to The 13th International Conference on Information and Knowledge Technology (IKT), December 20-22, 2022, Kharazmi University, Tehran, Iran. *Intelligent Control of the Traffic Flow*, <https://iktconference.ir/2022>
76. Balas, V. E., Keynote Speaker to the International Conference on Electrical Engineering & Sustainable Technologies (ICEEST 2022), December 14-15, 2022, organized by the University of Engineering and Technology, Lahore, Pakistan.

Advanced Methodologies for Modeling and Simulation of Roof-Top Greenhouses,
<https://conferences.uet.edu.pk/iceest/2022/>

77. Balas, V. E., Chief Guest and Conference Inauguration Speaker to the International Conference on Advanced Communications and Machine Intelligence (MICA 2022), organized by M.Kumarasamy College of Engineering, Karur, Tamil Nadu, INDIA on 09-11 December 2022. *Switching Techniques*, <https://mica.org.in/2022/>
78. Balas, V. E., Keynote Speaker to the International Conference on Emerging Trends in Electrical, Control and Telecommunication Engineering (EETECTE'22)" on December 2-4, 2022, organized by the Department of Electrical Engineering, University of Lahore, Pakistan. *Advanced Soft Computing Techniques for Modeling and Simulation of Roof-Top Greenhouses*, <https://etecte.uol.edu.pk/index.html>
79. Bălaș M., Keynote Speaker, Control surface based designing of control systems, 8th World Conference on Soft Computing, 3-6 februarie, Baku, Azerbaijan.
80. Bălaș M., Balas, V. E., Greenhouses as Intelligent Energetic Structures. Synergies, AI2SD 2022 Advanced Intelligent Systems for Sustainable Development, 22-27 mai, Mohammed V University, ENSAM Rabat, Marocco.
81. Bălaș M., Keynote Speaker, Input-output surfaces based reasoning in adaptive, AI2SD 2022 Advanced Intelligent Systems for Sustainable Development, 22-27 mai, Mohammed V University, ENSAM Rabat, Marocco.
82. Bălaș M., Keynote Speaker, On the Visual Representation of Knowledge, 4th International Conference on Data & Information Sciences, 1-4 iunie, Raja Balwant Singh Engineering Technical Campus, Bichpuri, Agra, Uttar Pradesh, India.
83. Bălaș M., Keynote Speaker, The Top-down Approach in Systems Engineering and Education (with Emphasis on Digital Electronics and Greenhouses Technology), IEEE ICA-ACCA 2022 For the Development of Sustainable Agricultural Systems, 24-28 octombrie, Universidad de Talca, Curico, Chile.
84. Bălaș M., Keynote Speaker, The Top-down Approach in Systems Engineering and Education, SOFA 2022 10th International Workshop on Soft Computing Applications, 21-23 noiembrie, Arad, Romania.

-Nationale

1. Dana Maria Copolovici, Ana-Maria Toloș, Carmen Popa, Cristian Moisa, Andreea Lupitu, Silvia Elena Mot, Lucian Copolovici, Cell-Penetrating Peptides, A XXXVI Conferința Națională de Chimie, 4-7 octombrie 2022, Calimanesti-Caciulata.
2. Lucian Copolovici, Andreea Lupitu, Cristian Moisa, Virgiliu Ciutină, Flavia Bortes, Dana Copolovici, The influence of the climate change and elevated carbon dioxide

on the plants stress tolerance, A XXXVI Conferința Națională de Chimie, 4-7 octombrie 2022, Calimanesti-Caciulata.

3. Cristian Moisa, Andreea Lupitu, Lucian Copolovici, Dana Maria Copolovici, Natural and synthetic cell penetrating antimicrobial peptides, A XXXVI Conferința Națională de Chimie, 4-7 octombrie 2022, Calimanesti-Caciulata.
4. Andreea Lupitu, Cristian Moisa, Virgiliu Ciutină, Mihaela Dochia, Dana Copolovici, Lucian Copolovici, The impact of climate change and increased carbon on the plants from *Salicaceae* family, A XXXVI Conferința Națională de Chimie, 4-7 octombrie 2022, Calimanesti-Caciulata.
5. Denisa Peteleu, Andreea Lupitu, Cristian Moisa, Virgiliu Ciutină, Dana Copolovici, Lucian Copolovici, The influence of the elevated carbon dioxide and ozone on the plants stress tolerance, A XXXVI Conferința Națională de Chimie, 4-7 octombrie 2022, Calimanesti-Caciulata.
6. Flavia Bortes, Andreea Lupitu, Cristian Moisa, Dana Copolovici, Virgiliu Ciutina, Lucian Copolovici, The influence of elevated carbon dioxide on *Raphanus sativus* plants fumigated with ozone, A XXXVI Conferința Națională de Chimie, 4-7 octombrie 2022, Calimanesti-Caciulata.
7. Balas, V. E., Invited Speaker la Webinarul pe IT, AI, Robotică și Inginerie la Summit-ul Carierelor, pentru a-i ajuta pe tineri să se orienteze în carieră, organizat de catre Academia de Leadership EduBiz din ORADEA, 17 martie 2022.
<https://www.facebook.com/edubiz.ro/>

-Studentesti

1. Lorena Aliana Cioban, Dorina Rodica Chambre, The vulnerability of limestone and marble from heritage structures to the action of acid precipitation, PhD Students' Days, Faculty of Food Engineering, Tourism and Environmental protection, "Aurel Vlaicu" University of Arad, The Second Edition, November 25, 2022, Arad.
2. Bianca-Denisa Chereji, Florentina-Daniela Munteanu The capacity of wool fibre to absorb heavy metals and valorification of sheep wool through this, PhDs students Days, 25-26 Noiembrie 2022
3. Florina Burescu, Florentina-Daniela Munteanu study of the Timiș-Bega river basin in terms of water quality, PhDs students Days, 25-26 Noiembrie 2022
4. Elena Violeta Monea (Blidar), Florentina-Daniela Munteanu Comparative Study of The Pollution Situation in the Water Basins Of Mures, Olt and Siret, PhDs students Days, 25-26 Noiembrie 2022

5. Norica Godja, Florentina-Daniela Munteanu, Studies On The Environmental Impact Of Surface Treatment Processes, PhDs students Days, 25-26 Noiembrie 2022
6. Ramona Carmen Hărțău, Florentina –Daniela Munteanu, Source-Related Risk Assessment For Heavy Metals In Soil On The Site Of A Hydrocarbon Heating Power Plant, PhDs students Days, 25-26 Noiembrie 2022
7. Mirabela-Elena Raț (Botici), Florentina-Daniela Munteanu Studies On The Animal Food And Vegetalwaste Production In European Countries
8. Cristina Popa, Cristian Moisa, Andreea Lupitu, Dorina Chambre, Lucian Copolovici, Dana Copolovici, Gold nanoparticles synthesis from lavender biomass as a sustainable resource, The Second Edition, November 25, 2022, Arad.
9. Flavia Bortes, Lucian Copolovici, Cristian Moisa, Andreea Lupitu, Dana Copolovici, Could plants grown at elevated carbon dioxide be more tolerant to ozone?, XXth Edition of Student scientific session, Arad, November 24-26, 2022.
10. Mihai Gașpar, Andreea Lupitu, Cristian Moisa, Denisa Peteleu, Lucian Copolovici, Bees And Odours, XXth Edition of Student scientific session, Arad, November 24-26, 2022.
11. D. Peteleu, A. Lupitu, C. Moisa, V. Ciutină, D. Copolovici, L. Copolovici, Red cabbage plants: examining the impact of high carbon dioxide and ozone stress on plant growth, XXth Edition of Student scientific session, Arad, November 24-26, 2022.
12. Denisa Peteleu, Mihai Gaspar, Andreea Lupitu, Cristian Moisa, Sweet and tasty high fiber fruit snacks, XXth Edition of Student scientific session, Arad, November 24-26, 2022.
13. Mihai Gaspar, Denisa Peteleu, Andreea Lupitu, Cristian Moisa, High protein gluten-free muffins, XXth Edition of Student scientific session, Arad, November 24-26, 2022.
14. Adina-Alina Căpățînă, Andreea Lupitu, Lucian Copolovici, The effects of climate change on germination of *Brassica oleracea* species, XXth Edition of Student scientific session, Arad, November 24-26, 2022.
15. Bumbu Eduard, Hanes Daniel, Valentina Balas, Sistem reglare automata a presiunii, Conferinta Internationala studenteasca, editia 24, de la UAV, Arad 15-16 iunie, 2022, <https://cdn.uav.ro/documente-inginerie/Manifestari-Studentesti/Program-Sesiunea-studenti-XXIV-2022.pdf>
16. Berindei Andreea, Valentina Balas, Sisteme pentru controlul traficului intr-un oras inteligent, Conferinta Internationala studenteasca, editia 24, de la UAV, Arad 15-16

iunie, 2022, <https://cdn.uav.ro/documente-inginerie/Manifestari-Studentesti/Program-Sesiunea-studenti-XXIV-2022.pdf>

17. Alexuta Daniel, Valentina Balas, Aqvaponia, Conferinta Internationala studenteasca, editia 24, de la UAV, Arad 15-16 iunie, 2022, <https://cdn.uav.ro/documente-inginerie/Manifestari-Studentesti/Program-Sesiunea-studenti-XXIV-2022.pdf>
18. Gavrilă Tania Bogdana, Valentina Balas, Modelarea matematică a pancreasului artificial, Conferinta Internationala studenteasca, editia 24, de la UAV, Arad 15-16 iunie, 2022, <https://cdn.uav.ro/documente-inginerie/Manifestari-Studentesti/Program-Sesiunea-studenti-XXIV-2022.pdf>
19. Popa Mihaela, Valentina Balas, Sere inteligente pe acoperis, Conferinta Internationala studenteasca, editia 24, de la UAV, Arad 15-16 iunie, 2022, <https://cdn.uav.ro/documente-inginerie/Manifestari-Studentesti/Program-Sesiunea-studenti-XXIV-2022.pdf>
20. Rohatinovici Noemi, Valentina Balas, Retele Hammac, Conferinta Internationala studenteasca, editia 24, de la UAV, Arad 15-16 iunie, 2022, <https://cdn.uav.ro/documente-inginerie/Manifestari-Studentesti/Program-Sesiunea-studenti-XXIV-2022.pdf>
21. Alexuta Daniel, Valentina Balas, Marius Balas, Recuperarea energiei electrice consumate într-un sistem acvaponic, cu ajutorul principiului de flotabilitate, Simpozionul Internațional ”Brainstorming în Agora Cercurilor Studentești”, BACStud2021, Ediția a VII-a - Ediție dedicată în memoria Prof. Univ. Dr. Habil. Dzitac Ioan - cofondator BACStud, 13-15 octombrie 2022, Universitatea Agora din Municipiul Oradea, Băile Felix, Băile 1 Mai, <http://ns1.dzitac.ro/ro/conferinte/bacstud2022/>

-Alte tipuri de comunicari

b)Brevete de inventie, inovatie:

c)

-Internationale

-Nationale:

d) Carte/Capitol de carte publicate sau trimise spre publicare in edituri:

-Internationale

Carti de specialitate:

1. Simona Gavrilas, 2022, Smart and Sustainable Technology for Resilient Cities and Communities. Advances in Sustainability Science and Technology/Chapter 20 "A Sustainable Nutritional Behavior in the Era of Climate Changes", ISBN 978-981-16-9101-0.
2. A Nath, R Dey, VE Balas, Nonlinear Control for Blood Glucose Regulation of Diabetic Patients: An LMI Approach, 147 pag., ISBN 978-0-323-90776-7, Elsevier.

Capitole in carti de specialitate:

1. Y Venkatraman, KN Yegnanarayanan, VE Balas, Comprehending COVID-19 as a contact network <https://doi.org/10.1016/B978-0-323-85174-9.00017-0>, Pag. 105-108, Cap.11 in Biomedical Engineering Applications for People with Disabilities and the Elderly in the COVID-19 Pandemic and Beyond, ISBN 978-0-323-85174-9, Academic Press Elsevier.
2. Dana Rad, Valentina Emilia Balas, Edgar Demeter, Tiberiu Dughi, Roxana Maier, Vasile Marineanu, Ramona Lile, Alina Roman, Anca Egerău, Gavril Rad, Ovidiu Toderici, Roxana Chiş, The emerging association between boredom, COVID-19 anxiety, and aggressiveness in imposed prolonged social isolation, <https://doi.org/10.1016/B978-0-323-85174-9.00018-2>, Pag. 85-92, Cap.9 in Biomedical Engineering Applications for People with Disabilities and the Elderly in the COVID-19 Pandemic and Beyond, ISBN 978-0-323-85174-9, Academic Press Elsevier.
3. Yasin M.I., Afzal M.J., Tayyaba S., Ashraf M.W., Cornel B., Balas M., Fuzzy Parametric Estimation of Curvilinear Microchannel for Retinal Vein Occlusion (RVO), Pag. 355–362, in Advances in Intelligent Data Analysis and Applications. Smart Innovation, Systems and Technologies, vol 253. Pan, JS., Balas, V.E., Chen, CM. (eds), https://doi.org/10.1007/978-981-16-5036-9_33, Print ISBN978-981-16-5035-2, Online ISBN978-981-16-5036-9, Springer, Singapore https://link.springer.com/chapter/10.1007/978-981-16-5036-9_33

Editor sef - carti de specialitate:

1. Valentina E. Balas, International Journal of Advanced Intelligence Paradigms 2022, ISSN 1755-0394, <https://www.inderscience.com/jhome.php?jcode=ijaip>

2. Valentina E. Balas, International Journal of Computational Systems Engineering 2022, ISSN 2046-3405, <https://www.inderscience.com/jhome.php?jcode=ijcsyse>
3. Valentina E. Balas, Scientific and Technical Bulletin. Series: Electrotechnics, Electronics, Automatic Control and Computer Science 2022, ISSN 2165- 7866, <https://www.uav.ro/jour/index.php/stb-eeaccs>

Editor - carti de specialitate:

1. Advances in Cyber Security and Intelligent Analytics, in CRC Press, Taylor & Francis Group, editori: Abhishek Verma, Jitendra Kumar, Hari Mohan Gaur Vrijendra Singh, Valentina Emilia Balas, https://www.letmeread.net/advances-in-cyber-security-and-intelligent-analytics/?fbclid=IwAR0_nz10aElkWNiBVnE5In8KJ77QinQWxJdRgSNQiKNkKRCTv27QlcKsz7cv
2. Intelligent Sustainable Systems: Proceedings of ICISS 2022, Guest Editors: Jennifer S. Raj, Yong Shi, Danilo Pelusi, Valentina Emilia Balas <https://link.springer.com/book/10.1007/978-981-19-2894-9>
3. Proceedings of the 2022 International Conference on Connected Systems & Intelligence (CSI), August 31, September 1-2, 2022, Trivandrum, Kerala, India. Editori: Sabu M. Thampi, Ljiljana Trajkovic, Erol Gelenbe, Mohammed Atiquzzaman, Stefano Berretti, Valentina E. Balas, <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9924015>
4. "IoT Based Smart Applications". Guest Editors: Nidhi Sindhvani, Rohit Anand, M Niranjnamurthy, Dinesh Chander Verma, Valentina Emilia Balas, <https://rd.springer.com/book/10.1007/978-3-031-04524-0>
5. Blockchain. Principles and Applications in IoT, Editori: Rajdeep Chakraborty-, Anupam Ghosh, Valentina Emilia Balas, Ahmed A Elngar, CRC Press, Taylor & Francis Group https://www.enbook.ro/catalog/product/view/id/1889780?gclid=Cj0KCQiAofieBhDXARIsAHTTldqjbFjvLjrM5Qebo2-AyRBJ7W8vGqpvD_54NLR LXFTs_xd-Bss86P4aAvMjEALw_wcB
6. Proceedings of the International Conference on Artificial Intelligence Techniques for Electrical Engineering Systems (AITEES 2022), Volume 3, Editori: Valentina Emilia Balas, Ramesh C. Bansal, Siva Kumar Mangipudi, Subhojit Dawn, "Atlantis Highlights in Intelligent Systems" series in ATLANTIS Press - part of SPRINGER NATURE, <https://link.springer.com/book/9789462392656?page=2>

7. Proceedings of International Conference on Computational Intelligence, Data Science and Cloud Computing, IEM-ICDC 2021, Editori: Lopa Mandal, João Manuel R.S. Tavares, Valentina Emilia Balas, <https://link.springer.com/book/10.1007/978-981-19-1657-1>
8. Advances in Smart Energy Systems, Editori: Biplab das, Ripon Patgiri, Valentina Emilia Balas, [Smart Innovation, Systems and Technologies](https://link.springer.com/book/10.1007/978-981-19-2412-5?fbclid=IwAR3Y53Ybn1GXk4UhyJz5Gs5XYulO0tMZSIJ8Ag6LVOaO5ipMtBGLQtoS4X0) (SIST, volume 301), <https://link.springer.com/book/10.1007/978-981-19-2412-5?fbclid=IwAR3Y53Ybn1GXk4UhyJz5Gs5XYulO0tMZSIJ8Ag6LVOaO5ipMtBGLQtoS4X0>
9. "Predictive Modeling in Biomedical Data Mining and Analysis", Editori: Sudipta Roy, Lalit Mohan Goyal, Valentina Emilia Balas, Basant Agarwal, Mamta Mittal, https://books.google.ro/books/about/Predictive_Modeling_in_Biomedical_Data_M.html?id=2Bx1EAAAQBAJ&printsec=frontcover&source=kp_read_button&hl=en&redir_esc=y#v=onepage&q&f=false
10. Security and Privacy Issues in Internet of Medical Things, Editori: Rajkumar Buyya, Muhammad Imran Tariq, Valentina E. Balas, Guojun Wang, Radu Prodan, <https://www.elsevier.com/books/security-and-privacy-issues-in-internet-of-medical-things/buyya/978-0-323-89872-0>
11. Modeling, Simulation and Optimization. Proceedings of CoMSO 2021, Editori: Biplab Das, Ripon Patgiri, Sivaji Bandyopadhyay, Valentina Emilia Balas, <https://link.springer.com/book/10.1007/978-981-19-0836-1>
12. Advances in Industry 4.0. Concepts and Applications, Editori: M. Niranjanamurthy, Sheng-Lung Peng, E. Naresh, S. R. Jayasimha, Valentina Emilia Balas, https://books.google.ro/books/about/Advances_in_Industry_4_0.html?id=NKp0EAAQBAJ&printsec=frontcover&source=kp_read_button&hl=en&redir_esc=y#v=onepage&q&f=false
13. Emerging Technologies in Computer Engineering: Cognitive Computing and Intelligent IoT, 5th International Conference, ICETCE 2022, Jaipur, India, February 4–5, 2022, Editori: Valentina E. Balas, G. R. Sinha, Basant Agarwal, Tarun Kumar Sharma, Pankaj Dadheech, Mehul Mahrish, <https://link.springer.com/book/10.1007/978-3-031-07012-9> [Emerging Technologies in Computer Engineering: Cognitive Computing and Intelligent IoT: 5th International Conference, ICETCE 2022, Jaipur, India, February 4–5, 2022, Revised Selected Papers | SpringerLink](https://link.springer.com/book/10.1007/978-3-031-07012-9)

14. Security and Privacy Trends in Cloud Computing and Big Data, Editori: Muhammad Imran Tariq, Valentina Emilia Balas, Shahzadi Tayyaba, <https://www.routledge.com/.../Tariq.../p/book/9780367619626>
15. Biomedical Data Analysis and Processing Using Explainable (XAI) and Responsive Artificial Intelligence (RAI)", Guest editors: Aditya Khamparia, Deepak Gupta, Ashish Khanna, Valentina E. Balas, <https://link.springer.com/book/10.1007/978-981-19-1476-8>
16. "Edge Analytics", Guest Editors: Ripon Patgiri, Sivaji Bandyopadhyay, Malaya Dutta Borah, Valentina Emilia Balas, <https://rd.springer.com/book/10.1007/978-981-19-0019-8>
17. The Korean edition of our book "Internet of Things in Biomedical Engineering" published by arrangement with ELSEVIER. Editori: Valentina Emilia Balas, Le Hoang Son, Sudan Jha, Manju Khari, Raghvendra Kumar, <http://www.kyobobook.co.kr/product/detailViewKor.laf?ejkGb=KOR&mallGb=KO R&barcode=9791197682612&orderClick=LAW&Kc=>
18. "Applications of Computational Intelligence in Multi-Disciplinary Research", Editori: Ahmed A. Elngar, +Rajdeep Chowdhury, Mohamed Elhoseny, Valentina Emilia Balas, <https://www.elsevier.com/.../app.../elngar/978-0-12-823978-0>
19. Studies and Intelligence Engineering, Editori: Lakhmi C. Jain, Valentina Emilia Balas, Qun Wu, Fuqian Shi, <https://ebooks.iospress.nl/ISBN/978-1-64368-257-0>
20. Intelligent Computing and Networking. Proceedings of IC-ICN 2021, Editori: Valentina Emilia Balas, Vijay Bhaskar Semwal, Anand Khandare, <https://rd.springer.com/book/10.1007/978-981-16-4863-2>
21. Recent Advances in Internet of Things and Machine Learning, Real-World Applications, Editori: Valentina Emilia Balas, Vijender Kumar Solanki, Raghvendra Kumar, <https://rd.springer.com/book/10.1007/978-3-030-90119-6>
22. New Proceedings in Springer: Advanced Intelligent Systems for Sustainable Development (AI2SD'2020) vol.1. Editori: J. Kacprzyk, V. E. Balas, M. Ezziyyani, <https://rd.springer.com/book/10.1007/978-3-030-90633-7>
23. New Proceedings in Springer: Advanced Intelligent Systems for Sustainable Development (AI2SD'2020) vol. 2. Editori: J. Kacprzyk, V. E. Balas, M. Ezziyyani, <https://rd.springer.com/book/10.1007/978-3-030-90639-9>
24. Advances in Data Science and Management, Proceedings of ICDSM 2021, Editori: Samarjeet B., Sambit K.M., Brojo K. M., V. E. Balas, Z. Polkowski, <https://rd.springer.com/book/10.1007/978-981-16-5685-9>

25. Applications of AI and IOT in Renewable Energy, Editori: Rabindra Nath Shaw, Ankush Ghosh, Saad Mekhilef, Valentina Emilia Balas, <https://www.elsevier.com/.../appli.../shaw/978-0-323-91699-8>
26. Fractional Order Systems and Applications in Engineering, Editori: Dumitru Baleanu, Valentina Emilia Balas, Praveen Agarwal, <https://www.amazon.com/Fractional-Order.../dp/0323909531>
27. Sustainable Communication Networks and Application. Proceedings of ICSCN 2021, Editori: P. Karrupusamy, Valentina Emilia Balas, Yong Shi, <https://link.springer.com/book/10.1007/978-3-030-34515-0>
28. Biomedical Engineering Applications for People with Disabilities and the Elderly, Editori: Valentina Emilia Balas, Oana Geman, <https://www.elsevier.com/.../biom.../balas/978-0-323-85174-9>
29. Ebook: Smart Intelligent Computing and Communication Technology, IOS Press, 2021. Proceedings of IConIC 2021, the 4th International Conference on Intelligent Computing, Chennai, India. Editori: V.D. Ambeth Kumar, S. Malathi, Valentina Emilia Balas, Margarita Favorskaya, Thinagaran Perumal, <https://ebooks.iospress.nl/ISBN/978-1-64368-202-0>
30. Business Data Analytics, First International Conference, ICBDA 2022, Dehradun, India, October 7–308, 2022, Proceedings, Editori: Rajesh Singh, Valentina Emilia Balas, Arpan Kumar Kar, Anita Gehlot, Shahab Shamshirband, Part of the book series: Communications in Computer and Information Science (CCIS, volume 1742), Conference series link(s): ICBDA: International Conference on Business Data Analytics
31. Smart and Sustainable Technology for Resilient Cities and Communities. Advances in Sustainability Science and Technology, Howlett R.J., Jain L.C., Littlewood J.R., Balas M.M., https://doi.org/10.1007/978-981-16-9101-0_1 , PrintISBN978-981-16-9100-3, OnlineISBN978-981-16-9101-0, Springer, <https://link.springer.com/book/10.1007/978-981-16-9101-0>

-Nationale

-Alte tipuri de publicatii

e) Aplicații de proiecte de cercetare/Proiecte de cercetare în derulare castigate în competiții internaționale/nationale

Se notează titlul proiectului, directorul/membrii din echipa de cercetare, competiția, suma (pentru proiectele în derulare).

Aplicații de proiecte de cercetare:

1. MARIE SKŁODOWSKA-CURIE ACTIONS Doctoral Networks (DN) Call: HORIZON-MSCA-2022-DN-01 PART B Digital Twins for Active Implantable Medical Devices (AIMD) that Last a Century: Resilient Design and Life Cycle Prognosis “TWINFORCE” Coordonator: Theodor Doll – Hannover Medical School, Germany, Responsabil partener UAV – Valentina E. Balas, Membri: Valeriu Beiu și Marius M. Balas.

Proiecte de cercetare în derulare castigate în competiții internaționale/nationale:

1. Simona Perța-Crișan, PN-III-P2-2.1-PED-2021-3240 Improving the nutritional quality of meat products by applying some innovative technological strategies 593995 RON.
2. V. Beiu, Techniques for Unconventional Nano-Designing in the Energy-Reliability Realm (ThUNDER²), Members: V.-F. Drăgoi, S.R. Cowell, R.-M. Beiu, L. Dăuș, and M. Tache, PN-III-P4-ID-PCE-2020-2495, PCE 238 nr. 769/07.04.2021, RON 1,198,023.00, 01.09.2021-31.08.2024.
3. Nanoparticule din deșeuri naturale cu potențiale aplicații medicale, Universitatea “Aurel Vlaicu”, Arad, Romania, director CS III dr ing Moisa Cristian /mentor prof dr abilitat Copolovici Dana Maria, PN-III-P1-1.1-PD-2019-0607, 246.950 lei, 2020-2022.
4. Influența factorilor abiotici asupra caracteristicilor fiziologice și a metaboliților secundari din plante aromatice, Universitatea “Aurel Vlaicu”, Arad, Romania, director CS III dr ing Lupitu Andreea Ioana/mentor prof dr abilitat Copolovici Lucian Octav, PN-III-P1-1.1-PD-2019-0349, 246.950 lei, 2020-2022.
5. Cell-penetrating peptides-containing systems as a potential platform for the use in breast and prostate cancer treatment, [CPPS Cancer](#)”, PN-III-P4-PCE-2021-0639; Proiect finanțat de uefiscdi, <https://cpps-cancer.uav.ro/>, Perioada de desfășurare: 2023-2026; Valoare totală: 1.199.998 LEI.
6. Impactul stresului abiotic și biotic asupra plantelor datorită schimbărilor climatice – STRESSEDPLANTS”, proiect UEFISCCDI, PN-III-P4-ID-PCE2020-0410;

<https://stressedplants.uav.ro/wordpress/>, Perioada de desfășurare: 2020-2023;

Valoare totală: 1.198.026,00 RON.

7. Valentina Balas - coordonator proiect cu Ministerul Educatiei pentru finantarea Sesiunii Stiintifice Studentesti 2022, editia a XXIV-a de la Facultatea de Inginerie, Suma: 12.400 lei.