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## L I S T A

### lucrărilor științifice în domeniul disciplinelor din postul didactic

**A. Teza de doctorat:** „Senzori Inteligenți cu Model Intern și Tehnici Fuzzy”, Universitatea „Politehnică” Timișoara, Conducător Științific Prof. dr. ing. Mircea Ciugudean, în domeniul **Inginerie Electronică și Telecomunicații**, susținută în 13.06.2004 la Universitatea „Politehnică” Timișoara.

### **B. Cărți și capitole în cărți**

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[http://link.springer.com/chapter/10.1007/978-3-642-35641-4\\_3#page-1](http://link.springer.com/chapter/10.1007/978-3-642-35641-4_3#page-1)

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**60.** S. Senthil Kumar, H. Hannah Inbarani, Ahmad Taher Azar, Hala S. Own, **Valentina Emilia Balas**, Teodora Olariu, *Optimistic Multi-Granulation Rough set based Classification for Neonatal jaundice*, In volume *Advances in Intelligent Systems and Computing*, Series Ed.: Kacprzyk, Janusz, Proceedings of the 6th International

Workshop on Soft Computing Applications SOFA 2014, July 22-24, 2014, Timisoara, Romania, Guest Editors: Valentina E. Balas, Lakhmi C. Jain, Branko Kovačević, Springer Verlag, 2016, AISC, Volume 356, Vol. 1, pag. 307-318, ([ARC Cat. C](#), [SCOPUS](#))

**61.** Ahmad Taher Azar, Hanaa S. Ali, **Valentina E. Balas**, Teodora Olariu, Rujita Ciurea, *Diagnosis Boosted Decision Trees for Vertebral Column Disease Diagnosis*, In volume Advances in Intelligent Systems and Computing, Series Ed.: Kacprzyk, Janusz, Proceedings of the 6th International Workshop on Soft Computing Applications SOFA 2014, July 22-24, 2014, Timisoara, Romania, Guest Editors: Valentina E. Balas, Lakhmi C. Jain, Branko Kovačević, Springer Verlag, 2016, AISC, Volume 356, Vol. 1, pag. 319-334, ([ARC Cat. C](#), [SCOPUS](#))

**62.** Ram Kumar, F. A. Talukdar, Nilanjan Dey, Amira S. Ashour, V. Santhi, Valentina Emilia Balas, Fuqian Shi, *Histogram Thresholding in Image Segmentation: A Joint Level Set Method and Lattice Boltzmann Method Based Approach*, Volume 2, Proceedings of the 2015 International Conference on Information Technology and Intelligent Transportation Systems ITITS 2015, held December 12-13, 2015, Xi'an China, Editors: [Valentina Emilia Balas](#), [Lakhmi C. Jain](#), [Xiangmo Zhao](#), ISBN: 978-3-319-38769-7, Volume 455 of the series [Advances in Intelligent Systems and Computing](#), 2017, pp 529-539.

**63.** S. Rakesh kumar, K. Ramkumar, Seshadhri Srinivasan, Valentina Emilia Balas, Fuqian Shi, *Self-Calibration of Dead Reckoning Sensor for Skid-Steer Mobile Robot Localization Using Neuro-Fuzzy Systems*, Volume 2, Proceedings of the 2015 International Conference on Information Technology and Intelligent Transportation Systems ITITS 2015, held December 12-13, 2015, Xi'an China, Editors: [Valentina Emilia Balas](#), [Lakhmi C. Jain](#), [Xiangmo Zhao](#), ISBN: 978-3-319-38769-7, Volume 455 of the series [Advances in Intelligent Systems and Computing](#), 2017, pp 541-551.

**64.** Sirshendu Hore, Sankhadeep Chatterjee, V. Santhi, Nilanjan Dey, Amira S. Ashour, Valentina Emilia Balas, Fuqian Shi, *Indian Sign Language Recognition Using Optimized Neural Networks*, Volume 2, Proceedings of the 2015 International Conference on Information Technology and Intelligent Transportation Systems ITITS 2015, held December 12-13, 2015, Xi'an China, Editors: [Valentina Emilia Balas](#), [Lakhmi C. Jain](#), [Xiangmo Zhao](#), ISBN: 978-3-319-38769-7, Volume 455 of the series [Advances in Intelligent Systems and Computing](#), 2017, pp 553-563.

#### **D. Brevete obținute în întreaga activitate** -

#### **E. Contracte de cercetare**

##### **Granturi internationale ca director:**

**1. Project no. 015942, Project acronym** CEEC IST NET, FP 6, 2005-2006.

**Project title** SUPPORT TO ORGANISATIONS FROM THE CENTRAL AND EASTERN EUROPEAN COUNTRIES,

**Thematic Priority:** Information Society Technologies

Deliverable D 4.1.8 : NATIONAL MAPPING REPORT for ROMANIA, 20 April 2006,

Duration: 24 month

**Director Stiintific din partea UAV – Valentina E. Balas**

<https://slideblast.com/project-no-015942-project-acronym-ceec-ist-net-project-title-595ceac01723dd8e40283dc3.html>

2. **Grant Internațional – NSF Awards ENG-1047778 and ENG-1047714– Collaborative Research** - oferit de Georgia Institute of Technology, School of Materials Science and Engineering, Atlanta, Georgia, USA, **WIRES 2011** (Women's International Research Engineering Summit), Pathways to International Collaborations, 30 Martie - 2 Aprilie 2011, Șef de program - **Valentina E. Bălaș, grant castigat prin competitie**

<http://wires.gatech.edu/main.php>,

<http://www.wires.gatech.edu/committee.php>,

<http://wires.gatech.edu/resources/WIRES2-agenda.pdf>

3. Global Initiative for Academic Network (**GIAN**) programme approved by Union Cabinet in Higher Education aimed at tapping the talent pool of Scientist and Entrepreneur Internationally to encourage their engagement with the institutes of higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

**IIT Kharagpur- the national coordinator for India**

**Valentina E. Balas – responsible Romanian partner**

**Funding of GIAN: 12000 USD,**

**Proiect câștigat prin competitie in India** - Mai 2016, derulat in septembrie 2016, singurul profesor selectat din Romania.

<http://www.sici.org/programmes/details/global-initiative-for-academic-network-gian-programme/>

[http://www.nits.ac.in/gian/Brochure\\_Fuzzy\\_Interpolative\\_Controller\\_and\\_Appln\\_V\\_Balas.pdf](http://www.nits.ac.in/gian/Brochure_Fuzzy_Interpolative_Controller_and_Appln_V_Balas.pdf)

4. **Un numar de 31 Travel granturi a cate 3000 EURO** fiecare pentru sustinerea de conferinte invitate si demararea de cercetari comune in Japonia, Taiwan, China, India, Singapore, USA, Pakistan, Iran.

#### **Granturi si proiecte nationale obtinute prin competitie ca director:**

**Peste 25 de proiecte realizate la CCSIT Vagoane Arad in calitate de șef de proiect pentru partea electrică/electronică, proiecte pobtinite prin competitie in cadrul grupului de intreprinderi producatoare de material rulant.**

1. *Masă de poziționare și rotire 1000 Kg pt. programul nuclear (responsabil - partea electrică V. E. Balas).* Cod: 291-84 MPR. Beneficiar: ISIM Timișoara. Executant: C.C.S.I.T.V.A. Valoare: 100.000 ROL.

2. *Masă de poziționare și rotire 4000 Kg, pentru programul nuclear (responsabil - partea electrică V. E. Balas).* Cod: 292-84MPR. Beneficiar: ISIM Timișoara. Executant: C.C.S.I.T.V.A. Valoare: 150.000 ROL.



3. *Instalație pentru debitarea tablei din rulou (responsabil - partea electrică V. E. Balas)*. Cod: 2-85 ISP. Beneficiar: I.V.Caracal. Executant: C.C.S.I.T.V.A. Valoare: 140.000 ROL.
4. *Boghiu metrou generația a II-a (responsabil - partea electrică V. E. Balas)* Cod: 5-85-BMG II. Beneficiar: I.V.ARAD. Executant: C.C.S.I.T.V.A. Valoare: 200.000 ROL.
5. *Mașina de roluit corpul cilindrului de frână (responsabil - partea electrică V. E. Balas)*. Cod: 6-85MUS. Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 1.000.000 ROL.
6. *Mașina de roluit capace cilindru de frână (responsabil - partea electrică V. E. Balas)*. Cod: 16-85MUS. Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 700.000 ROL.
7. *Agregat de găurit multiax taler tampon (responsabil - partea electrică V. E. Balas)*. Cod: 47-85AG. Beneficiar: I.V.Drobeta Tr.Severin. Executant: C.C.S.I.T.V.A. Valoare: 300.000 ROL.
8. *Agregat de găurit placa de bază tampon PKP-Polonia (responsabil - partea electrică V. E. Balas)*. Cod: 52-85AG. Beneficiar: I.V.Drobeta Tr.Severin. Executant: C.C.S.I.T.V.A. Valoare: 250.000 ROL.
9. *Agregat de găurit leviere (responsabil - partea electrică V. E. Balas)*. Cod: 6-86AG. Beneficiar: I.V.Caracal. Executant: C.C.S.I.T.V.A. Valoare: 250.000 ROL.
10. *Mașina de bordurat și retăiat cilindrul de frână (responsabil - partea electrică V. E. Balas)*. Cod: 16-86MBR. Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 400.000 ROL.
11. *Stand derulat cabluri (responsabil - partea electrică V. E. Balas)*. Cod: 25-86ST. Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 270.000 ROL.
12. *Cercetări privind realizarea unei instalații complexe pentru efectuarea încercărilor dinamice tip AAR (SUA), (responsabil - partea electrică V. E. Balas)*. Cod: 51-87STC. Beneficiar: C.C.S.I.T.V.A. Executant: C.C.S.I.T.V.A. Valoare: 1.200.000 ROL.
13. *Stand complex pentru încercat cuple metrou (responsabil - partea electrică V. E. Balas)*. Cod: 6-88STC. Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 300.000 ROL.
14. *Vagon dinamometric (responsabil - instalația TV prin cablu, interfon, sonorizare V. E. Balas)*. Cod: 207. 1988, Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 2.500.000 ROL.
15. *Tehnologie de sudare a stâlpilor de la vagoanele tip Gondolă cu comandă program în mediu protector tip CO<sub>2</sub> (responsabil - partea electrică V. E. Balas)*. Cod: 24-89 ISR. Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 1.000.000 ROL.
16. *Troliu pentru deplasat longitudinal la nituire (responsabil - partea electrică V. E. Balas)*. Cod: 4-90 D. Beneficiar: I.V.Arad. Executant: C.C.S.I.T.V.A. Valoare: 150.000 ROL.
17. *Instalație pentru vopsit vagoane în câmp electrostatic (responsabil - partea electrică V. E. Balas)*. Cod: 6-91 ISR. Beneficiar: M.E.V.A. Dr. Tr.- Severin. Executant: C.C.S.I.T.V.A. Valoare: 700.000 ROL.

18. *Vagon transport agabaritic pe 24 osii (responsabil - partea electrică V. E. Balas)*. Cod: 653.36-36., **1991**, Beneficiar: ElectroputereCraiova. Executant: C.C.S.I.T.V.A. Valoare: 1.500.000 ROL.
19. *Vagon comandă personal (responsabil - instalații electrice speciale V. E. Balas)*. Cod: AAP., **1992**, Beneficiar: Ministerul Apărării Naționale. Executant: C.C.S.I.T.V.A. Valoare: 200.000 ROL.
20. *Vagon clinic și radiologic (responsabil - instalații electrice speciale V. E. Balas)*. Cod: AAT., **1992**, Beneficiar: M. Ap. N. Executant: C.C.S.I.T.V.A. Valoare: 220.000 ROL.
21. *Vagon farmacie (responsabil - instalații electrice speciale V. E. Balas)*. Cod: AAV., **1992**, Beneficiar: M. Ap. N. Executant: C.C.S.I.T.V.A. Valoare: 200.000 ROL.
22. *Vagon uzină (responsabil - instalații electrice speciale V. E. Balas)*. Cod: AAW., **1992**, Beneficiar: M. Ap. N. Executant: C.C.S.I.T.V.A. Valoare: 300.000 ROL.
23. *Vagon sală de operații (responsabil - instalații electrice speciale V. E. Balas)*. Cod: AAR, **1992**, Beneficiar: M. Ap. N. Executant: C.C.S.I.T.V.A. Valoare: 175.000 ROL.
24. *Vagon reanimare și transport răniți (responsabil - instalații electrice speciale V. E. Balas)*. Cod: AAS. Beneficiar: M. Ap. N. Executant: C.C.S.I.T.V.A. Valoare: 200.000 ROL.
25. *Vagon sală pansamente (responsabil - instalații electrice speciale V. E. Balas)*. Cod: AAU. Beneficiar: M. Ap. N. Executant: C.C.S.I.T.V.A. Valoare: 200.000 ROL.
26. **Grant CNCSU Nr. 107, obținut prin competiție-** *Dispozitive, Circuite și Microsisteme” in cooperare cu Universitatea „Politehnica” București prin Banca Mondială.* Cod: CNCSU, Nr. 107. Executant: Universitatea Politehnica Timișoara. Bursa - **V. E. Balas** luna noiembrie **1999**, Senzori inteligenți fuzzy, in cadrul laboratorului LAMII, Annecy, Franța. Valoare: 2000\$
27. **Grant CNCSU Nr. 107, obținut prin competiție-** *Dispozitive, Circuite și Microsisteme” in cooperare cu Universitatea „Politehnica” București prin Banca Mondială.* Cod: CNCSU, Nr. 107. Executant: Universitatea Politehnica Timișoara. Bursa - **V. E. Balas**, luna ianuarie **2001**, Senzori inteligenți fuzzy, in cadrul laboratorului LAMII, Annecy, Franța, Valoare: 2000\$.
28. **Proiect obținut prin competiție:** *Organizarea Școlii de Vară – „Soft Computing” – ediția a II-a, cu participare internațională, în limba engleză.* Iulie **2003**. Universitatea „Aurel Vlaicu” din Arad. **Director** - **V. E. Bălas**, colaborator – Consiliul Județean Arad, Centrul Cultural. Valoare: 2.000 RON.
29. **Proiect obținut prin competiție:** *Organizarea Școlii de Vară – „Soft Computing” – ediția a III-a, cu participare internațională, în limba engleză.* August **2004**. Universitatea „Aurel Vlaicu” din Arad. **Director** - **V. E. Bălas**, colaborator – Consiliul Județean Arad, Centrul Cultural. Valoare: 2.500 RON.
30. **Proiect obținut prin competiție:** *Organizarea Școlii de Vară – „Soft Computing” – ediția a IV-a, cu participare internațională, în limba engleză.* Iulie **2005**,

Dispozitia 228/18.05 2005, Universitatea „Aurel Vlaicu” din Arad. **Director - V. E. Bălaș**, colaborator – Consiliul Județean Arad, Centrul Cultural. Valoare: 8.000 RON.

31. **Proiect obținut prin competiție:** *Organizarea Școlii de Vară – „Soft Computing” – ediția a V-a, cu participare internațională, în limba engleză.* Iulie **2006**. Universitatea „Aurel Vlaicu” din Arad, **Director - V. E. Bălaș**, colaborator – Consiliul Județean Arad, Centrul Cultural. Valoare: 3.000 RON.

32. **Contract de cercetare obținut prin competiție de la SC TAKATA SA:** *Laborator automatizari cu Echipament Mitsubishi PLC*, septembrie **2007**, Universitatea „Aurel Vlaicu” din Arad, **Director de contract - Valentina E. Bălaș**, 1600 EURO.

**33. Proiect obținut prin competiție**, Centrul Municipal de Cultura Arad - CMCA, Contract nr. 4862/10.08.2016, **23.000 lei**, **Director de proiect – Valentina E. Balas**, Soft Computing and Applications.

34. Contract de finantare UEFISCDI - **48/29.11.2016** - Subprogram 1.1 - Resurse Umane - Proiecte de mobilitate pentru cercetatori cu experienta din diaspora – cod **depunere PN-III-P1-1.1-MCD2016-0108, Responsabil – Valentina E. Balas**, Cercetator din diaspora – Dan Ralescu, Universitatea Cincinnati, USA, Valoare - **2100 EURO**, proiect obținut prin competiție națională.

**35. Proiect obținut prin competiție**, Centrul Municipal de Cultura Arad - CMCA, Contract nr. 4862/10.08.2016, **23.000 lei**, Director de proiect – **Valentina E. Balas**, Soft Computing and Applications.

36. **Contract de cercetare obținut prin competiție cu SC CONTACT PLUS SRL Arad.** „Cercetari privind dezvoltarea unor noi metode de fuzionare a cunostiințelor si aplicatii”, Mai **2005**, Nr. 1570/11.05 2005, Universitatea „Aurel Vlaicu” din Arad. *Șef de contract - V. E. Balas*. Valoare: 5.000.000 ROL.

37. **Contract de cercetare obținut prin competiție** Nr. 05/12.12.**2007** cu SC Ovidiu Nicola SRL „Cercetări privind realizarea unui senzor pentru ploaie”, Universitatea „Aurel Vlaicu” din Arad, *Responsabil de contract - Valentina E. Balas*, 1.000 RON

38. **Contract de cercetare obținut prin competiție** Nr. 2726/22.05.**2008** cu SC Ready SRL „Cercetări privind aplicații ale inteligenței artificiale în tehnică”, Universitatea „Aurel Vlaicu” din Arad, *Responsabil de contract - Valentina E. Balas*, 1.000 Ron

39. **Contract de cercetare obținut prin competiție** Nr. 433/19.02.**2010** cu SC Ready SRL „Cercetări privind aplicații in domeniul sistemelor inteligente”, Universitatea „Aurel Vlaicu” din Arad, *Responsabil de contract - Valentina E. Balas*, 500 Ron.

40. **Contract de cercetare obținut prin competiție** Nr. 5095.05.11.**2010** cu SC Computer Voice Systems Romania SRL „Cercetări privind Studiul oportunității utilizării tehnologiei GWT pentru aplicațiile web cu flux de date real time”, Universitatea „Aurel Vlaicu” din Arad, *Responsabil de contract - Valentina E. Balas*, 1000 Ron.

41. Competitia Premiera rezultatelor cercetarii in Universitatea Aurel Vlaicu Arad, martie 2016, 2100 Euro – **Valentina E. Balas**.

42. Proiect obținut prin competiție cu Centrul Municipal de Cultura Arad - CMCA, Programul Tineret, Învățământ și Recreative 2017, pozitia 20, 12.200 lei, **Director de proiect – Valentina E. Balas**, Cercetari in domeniul Pancreasului Artificial.

43. Contract de cercetare obtinut prin competitie cu agenti economici in valoare de 10.000\$, 2017

### **Granturi internationale ca partener:**

1. Program Internațional, **Proiecte de Cooperare Bilaterală/Multilaterală, Programul: Capacități /Modul III, Cooperare Bilaterală între România și Bulgaria**, Titlu: "*Electronic Health Records for the Next Generation Medical Decision Support in Romanian and Bulgarian National Healthcare Systems*", Acronim: **NextGenElectroMedSupport**, Instituția conducătoare în țară este Universitatea Petru Maior din Târgu Mureș, universitatea conducătoare din Bulgaria este Universitatea Tehnică din Sofia. Directori de proiect: Bulgaria - Prof. dr. Roumen Kountchev Technical University from Sofia, Bulgaria, Romania - director general - Barna Iantovics, Membri /cercetători în echipă: **Valentina E. Bălaș**, Marius M. Bălaș, **august 2010-august 2012.**

2. Program Internațional, **Planul Național pentru Cercetare Dezvoltare și Inovare 2007-2013-PN II, Capacități /Modul III, Proiecte de Cooperare Bilaterală/Multilaterală**, Cooperare Bilaterală între România și Slovacia  
Titlu: "**Hybrid Medical Complex Systems**",  
Acronim: ComplexMediSys  
CO: Universitatea Petru Maior din Targu Mureș  
CO: Academia Slovaca de Științe, Bratislava  
Directori. Ladislav Hluchý (Slovacia) si Barna Iantovics (Romania)  
Membri /cercetători în echipă: **Valentina E. Bălaș**, Marius M. Bălaș, **ianuarie 2011-ianuarie 2013.**

National Science Foundation (NSF), Agency Contract Number: 0948297, Project type: Basic Research, Period: 07/20/2009 to 10/15/2010, Principal Investigator: Pamela McCauley-Bush, The objective of this grant is to establish an international collaboration with two female engineering faculty members in Romania to further the research being conducted by the Human Factors and Simulation in Disaster Management Research Team at the University of Central Florida. The UCF HFDM Research is led by Dr. Pamela McCaulry Bush and the collaborative partners are Dr. Valentina Balas and Mihaela Albu.  
[https://argis.research.ucf.edu/index.cfm?fuseaction=detail.view\\_proposal\\_detail&rec\\_id=1049585&rec\\_type=research](https://argis.research.ucf.edu/index.cfm?fuseaction=detail.view_proposal_detail&rec_id=1049585&rec_type=research)

### **Granturi nationale ca si patener:**

1. **Grant CNCSIS** „Cercetări pentru implementarea strategiilor bazate pe logica fuzzy și rețele neuronale destinate detecției și diagnosticării defectelor, cu aplicație la sistemele de conducere a acționărilor electrice”. Iulie **2004**. Executant principal: Universitatea „Politehnica” Timișoara. **membri UAV – M.M. Balas si V. E. Bălaș**. Valoare: 800 EURO.
2. **Grant PN – II WE Cod CNCSIS: 47**, Contract de cofinanțare cu Autoritatea Națională pentru Cercetarea Științifică Nr. 316 / 09.04.**2008**, Workshop Exploratoriu „*De la limbaj natural la soft computing: noi paradigme ale inteligenței artificiale*”, Responsabil Institutul de Cercetari pentru Inteligența Artificială al Academiei Române – Acad. Dan Ioan Tufiș, 30.000 Ron, **Colaborator – Valentina E. Bălaș**,

**3. POSDRU/89/1.5/S/56287**, *Programe postdoctorale în avangarda cercetării de excelență în Tehnologiile Societății Informaționale și dezvoltarea de produse și procese inovative*, Proiect cofinanțat din Fondul Social European prin Programul Operațional Sectorial Dezvoltarea Resurselor Umane 2007-2013, Proiect implementat de Institutul Național de Cercetare-Dezvoltare pentru Textile și Pielarie – INCDTP în parteneriat cu Academia de Studii Economice București - Centrul de Cercetări Analize și Politici Regionale, Universitatea din Oradea și ASSOCIATION GROUPE ESSEC, **Membriu al grupului țintă – Valentina E. Bălaș**, Activitatea 4 – Formarea și perfecționarea în cadrul programelor pilot de pregătire postdoctorală prin cursuri susținute de ESSEC Bussines School – Franța.

**3. Membru în colectivul grantului, Responsabil WP 3** din Programul Operațional Competitivitate 2014-2020, Axa prioritară 1 – Cercetare, dezvoltare tehnologică și inovare (CDI) în sprijinul competitivității economice și dezvoltării afacerilor, Acțiunea 1.1.4 – Atragerea de personal cu competențe avansate din străinătate pentru consolidarea capacității de CD. Titlul Proiectului: *Noi nano-arhitecturi de inspirație biologică de tip celular – pentru circuite integrate, Nano-ART-BioCell – P\_37\_744*,

**valoare 8.502.600 lei, 2016-2019**

**Responsabil la pachetul WP 3 – Valentina E. Balas**

**Contract de cercetare** *obținut prin competiție* Nr. 03 din 10.10.2013 cu SC S.C MBB S.R.L “*Modelarea și simularea proceselor de tratament termic*”, Universitatea „Aurel Vlaicu” din Arad, **Responsabil de contract** – Marius M. Balas, Membru în echipa de cercetare - **Valentina E. Balas**, 1000 Ron

**Data:**  
**25.10.2017**

**Prof.dr.ing. Valentina E. Bălaș**