

## Raport de cercetare

Al Centrului de Cercetare „Sisteme Inteligente”

Perioada ianuarie-decembrie 2018

### a) Articole stiintifice

#### -ISI

1.

[Visual analysis of geospatial habitat suitability model based on inverse distance weighting with paired comparison analysis](#)

By: R Varatharajan, G Manogaran, MK Priyan, VE Balaş, C Barna

[MULTIMEDIA TOOLS AND APPLICATIONS](#) Volume: 77 Issue: 14 Pages: 17573-17593 Published: JUL 2018, **IF = 1,541**

Times Cited: 22

2.

[Secure VANETs: Trusted Communication Scheme between Vehicles and Infrastructure Based on Fog Computing](#)

By: [Arif, Muhammad](#); [Wang, Guojun](#); [Balas, Valentina Emilia](#)

[STUDIES IN INFORMATICS AND CONTROL](#) Volume: 27 Issue: 2 Pages: 235-246 Published: JUN 2018, **IF = 1,06**

Times Cited: 2

3.

[OVRP\\_GELS: solving open vehicle routing problem using the gravitational emulation local search algorithm](#)

By: AAR Hosseinabadi, J Vahidi, VE Balas, SS Mirkamali

[NEURAL COMPUTING & APPLICATIONS](#) Volume: 29 Issue: 10 Pages: 955-968 Published: MAY 2018, **IF = 4,213**

Times Cited: 1

4.

[Image feature-based affective retrieval employing improved parameter and structure identification of adaptive neuro-fuzzy inference system](#)

By: Dan Wang, Ting He, Zairan Li, Luying Cao, Nilanjan Dey, Amira S Ashour, Valentina E Balas, Pamela McCauley, Yezhi Lin, Jiang Xu, Fuqian Shi

[NEURAL COMPUTING & APPLICATIONS](#) Volume: 29 Issue: 4 Pages: 1087-1102 Published: FEB 2018, **IF = 4,213**

Times Cited: [8](#)

5.

[Estimating heating load in buildings using multivariate adaptive regression splines, extreme learning machine, a hybrid model of MARS and ELM](#)

By: [Roy, Sanjiban Sekhar](#); [Roy, Reetika](#); [Balas, Valentina E.](#)

[RENEWABLE & SUSTAINABLE ENERGY REVIEWS](#) Volume: 82 Pages: 4256-4268 Part: 3 Published: FEB 2018, **IF = 9,124**

Times Cited: [3](#)

6.

[State Convergence-based Control of a Multi-Master-Single-Slave Non-linear Teleoperation System](#)

By: Umar Farooq, Jason Gu, Mohamed El-Hawary, Valentina E Balas, Marius M Balas, Ghulam Abbas, Muhammad Usman Asad, Jun Luo [ACTA POLYTECHNICA HUNGARICA](#) Volume: 15 Issue: 4 Pages: 7-26 Published: 2018

[Full Text from Publisher](#), **IF = 0,909**

7. Venkataraman Yegnanarayanan, Gayathri Yegnanarayanan, Marius M Balas. [On Coloring Catalan Number Distance Graphs and Interference Graphs](#). Symmetry. Vol. 19, issue 10, pp. 468-470, 2018. ISSN: 2073-8994. **IF: 1.256**.

### **-ISI Proceedings**

1.

[Effect of Nonlinearity and Boiler Dynamics in Automatic Generation Control of Multi-area Thermal Power System with Proportional-Integral-Derivative and Ant Colony Optimization Technique](#)

By: K Jagatheesan, B Anand, K Baskaran, N Dey, AS Ashour, VE Balas

Conference: 4th International Workshop on Nonlinear Dynamics and Synchronization (INDS)  
Location: Alpen Adria Univ Klagenfurt, Klagenfurt, AUSTRIA Date: JUL 30-31, 2015

RECENT ADVANCES IN NONLINEAR DYNAMICS AND SYNCHRONIZATION:  
WITH SELECTED APPLICATIONS IN ELECTRICAL ENGINEERING,  
NEUROCOMPUTING, AND TRANSPORTATION Book Series: Studies in Systems  
Decision and Control Volume: 109 Pages: 89-110 Published: 2018

Times Cited: 0

2.

[On Reliability of 3D Hammock Networks](#)

By: [Rohatinovici, Noemi-Clara](#); [Prostean, Octavian](#); [Balas, Valentina E.](#)

Conference: 12th IEEE International Symposium on Applied Computational Intelligence and Informatics (SACI) Location: Timisoara, ROMANIA Date: MAY 17-19, 2018  
Sponsor(s): IEEE

2018 IEEE 12TH INTERNATIONAL SYMPOSIUM ON APPLIED COMPUTATIONAL INTELLIGENCE AND INFORMATICS (SACI) Pages: 149-153 Published: 2018

Times Cited: 0

3.

[On Algorithms for Evaluating the Reliability of Large Hammock Networks](#)

By: Valentina Emilia Balas and Valeriu Beiu Noemi-Clara Rohatinovici, Simon Cowell, Leonard Daus, Philippe Poulin, Vlad Dragoi  
Conference: 7th International Conference on Computers Communications and Control (ICCCC) Location: Oradea, ROMANIA Date: MAY 08-12, 2018  
Sponsor(s): IEEE; IEEE Reg 08; Agora Univ Oradea; R & D Agora, Cercetare Dezvoltare Agora

2018 7TH INTERNATIONAL CONFERENCE ON COMPUTERS COMMUNICATIONS AND CONTROL (ICCCC 2018) Pages: 131-135 Published: 2018

Times Cited: 0

4.

[Nature Inspired Partitioning Clustering Algorithms: A Review and Analysis](#)

By: [Saemi, Behzad](#); [Hosseinabadi, Ali Asghar Rahmani](#); [Kardgar, Maryam](#); et al.

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp

Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 2 Book Series: Advances in Intelligent Systems and Computing Volume: 634 Pages: 96-116 Published: 2018

Times Cited: 0

5.

[Closed Loop Blood Glucose Regulation of Type 1 Diabetic Patient Using Takagi-Sugeno Fuzzy Logic Control](#)

By: [Nath, Anirudh](#); [Dey, Rajeeb](#); [Balas, Valentina E.](#)

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 2 Book Series: Advances in Intelligent Systems and Computing Volume: 634 Pages: 286-296 Published: 2018

Times Cited: 0

6.

[Fuzzy Fractional Derivative: A New Definition](#)

By: [Najariyan, Marzieh](#); [Mazandarani, Mehran](#); [Balas, Valentina Emilia](#)

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 2 Book Series: Advances in Intelligent Systems and Computing Volume: 634 Pages: 314-329 Published: 2018

Times Cited: 0

7.

[Solving First Order Linear Fuzzy Differential Equations System](#)

By: [Najariyan, Marzieh](#); [Mazandarani, Mehran](#); [Balas, Valentina Emilia](#)

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp

Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 2 Book Series: Advances in Intelligent Systems and Computing Volume: 634 Pages: 330-353 Published: 2018

Times Cited: 0

8.

[Circular Fuzzy Iris Segmentation Using Isolines, Sine Law and Lookup Tables](#)

By: [Bodorin, N. Popescu](#); [Balas, V. E.](#); [Penariu, P. S.](#)

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 2 Book Series: Advances in Intelligent Systems and Computing Volume: 634 Pages: 445-459 Published: 2018

Times Cited: 0

9.

[Adaptive Controller for Networked Control Systems Subjected to Random Communication Delays](#)

By: [Srinivasan, Seshadhri](#); [Saravanakumar, G.](#); [Subathra, B.](#); et al.

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 1 Book Series: Advances in Intelligent Systems and Computing Volume: 633 Pages: 78-94 Published: 2018

Times Cited: 0

10.

[Imperialist Competition Based Clustering Algorithm to Improve the Lifetime of Wireless Sensor Network](#)

By: [Rostami, Ali Shokouhi](#); [Badkoobe, Marzieh](#); [Mohanna, Farahnaz](#); et al.

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 1 Book Series: Advances in Intelligent Systems and Computing Volume: 633 Pages: 189-202 Published: 2018

Times Cited: 0

11.

[The Importance of Quantification of Data in Studies on the Health Effects of Exposure to Electromagnetic Fields Generated by Mobile Base Stations](#)

By: [Mortazavi, S. M. J.](#); [Balas, Valentina Emilia](#); [Zamani, A.](#); et al.

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 1 Book Series: Advances in Intelligent Systems and Computing Volume: 633 Pages: 316-326 Published: 2018

Times Cited: 0

12.

[Novel Method for Neurodegenerative Disorders Screening Patients Using Hurst Coefficients on EEG Delta Rhythm](#)

By: [Todorean \(Aldea\), Roxana](#); [Geman, Oana](#); [Chiuchisan, Iuliana](#); et al.

Conference: 7th International Workshop on Soft Computing Applications (SOFA) Location: Arad, ROMANIA Date: AUG 24-26, 2016

Sponsor(s): Aurel Vlaicu Univ Arad; Univ Belgrade; Romanian Acad, Iasi Branch, Inst Comp Sci; IEEE Romanian Sect; Romanian Soc Control Engn & Tech Informat, Arad Sect; Gen Assoc Engineers Romania, Arad Sect; BTM Resources Arad

SOFT COMPUTING APPLICATIONS, SOFA 2016, VOL 1 Book Series: Advances in Intelligent Systems and Computing Volume: 633 Pages: 349-358 Published: 2018

Times Cited: 0

1. [Load frequency control of multi-area interconnected thermal power system: artificial intelligence-based approach](#)

K Jagatheesan, B Anand, N Dey, AS Ashour, VE Balas

International Journal of Automation and Control 12 (1), 126-152

2. [Effect of nonlinearity and boiler dynamics in automatic generation control of multi-area thermal power system with proportional-integral-derivative and ant colony optimization ...](#)

K Jagatheesan, B Anand, K Baskaran, N Dey, AS Ashour, VE Balas

Recent advances in nonlinear dynamics and synchronization, 89-110

3. [Load frequency control of hydro-hydro system with fuzzy logic controller considering non-linearity](#)

K Jagatheesan, B Anand, N Dey, AS Ashour, VE Balas

Recent Developments and the New Direction in Soft-Computing Foundations and ...

4. [Optimized Digital Controllers for Switching-Mode DC-DC Step-Down Converter](#)

G Abbas, J Gu, U Farooq, M Abid, A Raza, M Asad, V Balas, M Balas

Electronics 7 (12), 412

5. Mahmood Hosseini Imani, Mojtaba Jabbari Ghadi, Shahaboddin Shamshirband, Marius M Balas. [Impact Evaluation of Electric Vehicle Parking on Solving Security-Constrained Unit Commitment Problem](#). Mathematical and Computational Applications. Vol. 23, issue 1, 13 pages, 2018.

#### **-alte tipuri de publicatii**

-

Articolele se noteaza cu EndNote stilul ACS Nano, ca de exemplu in:

Chan, J. M.; Van Blarigan, E. L.; Kenfield, S. A., What should we tell prostate cancer patients about ( secondary) prevention? *Current Opinion in Urology* 2014, 24, 318-323.

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

Volumele unor conferințe științifice internaționale cu ISBN/ISSN:

1. Marius M. Balas, Jelena Nikolic, Ramona Lile, Mihaela Popa, Roxana Beiu. Integrated Rooftop Greenhouses and Green Skyline Cities. Conference Proceedings of 18<sup>th</sup> International Multidisciplinary Scientific Conference SGEM 2018, 3-5 Dec. 2018, volume 18, pp. 435-443. ISBN: 978-619-7408-71-3. ISSN: 1314-2704. DOI: 10.5593/sgem2018/6.4.

- Internationale
- ISI Proceedings
- Nationale
- Studentesti
- Alte tipuri de comunicari

-

c) Brevete de inventie, inovatie:

- Internationale
- Nationale

-

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

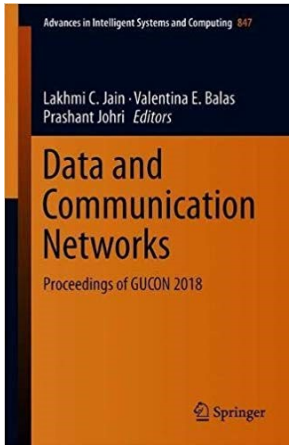
- Internationale
- Nationale
- Alte tipuri de publicatii

**Carti editate la edituri din străinătate indexate în baze de date specifice**

1. [Data and Communication Networks: Proceedings of GUCON 2018](#)

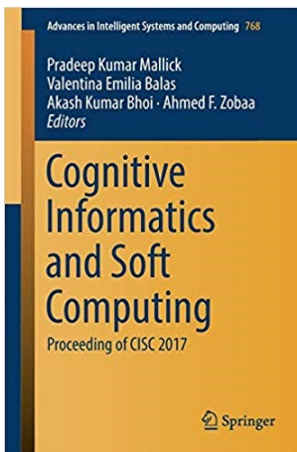
LC Jain, VE Balas, P Johri, Springer, 2018





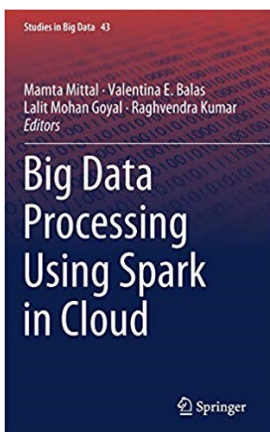
2. [Cognitive Informatics and Soft Computing: Proceeding of CISC 2017](#)

PK Mallick, VE Balas, AK Bhoi, AF Zobia, Springer, 2018



3. [Big Data Processing Using Spark in Cloud](#)

M Mittal, VE Balas, LM Goyal, R Kumar, Springer, 2018

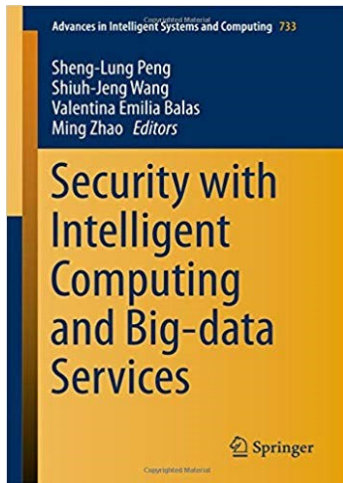


1

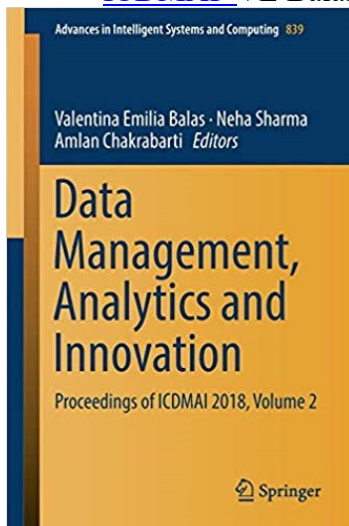
4. [Security with Intelligent Computing and Big-data Services](#)

SL Peng, SJ Wang, VE Balas, M Zhao, Springer, 2018

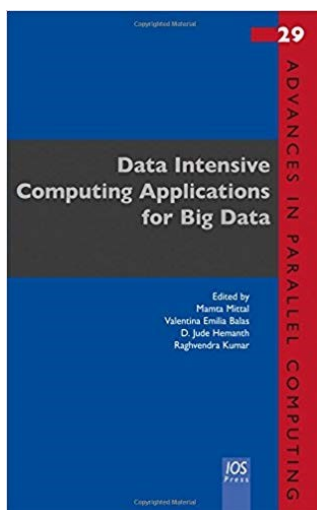
2



5. [Data Management, Analytics and Innovation: Proceedings of ICDMAI](#) VE Balas, N Sharma, A Chakrabarti, Springer, 2018



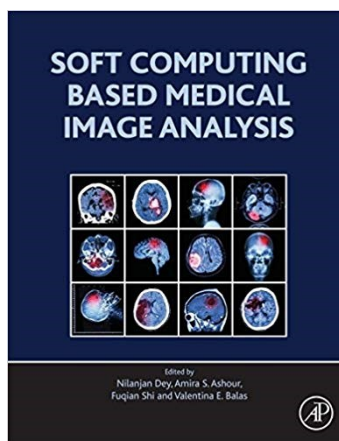
6. [Data Intensive Computing Applications for Big Data](#) M Mittal, VE Balas, DJ Hemanth, IOS Press, 2018



7. [Soft Computing Based Medical Image Analysis](#)

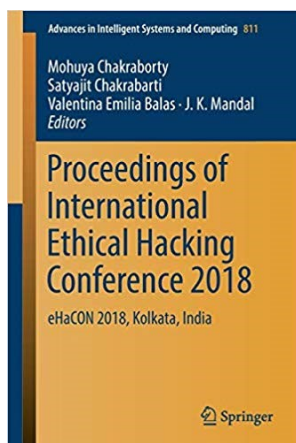
2 2018

N Dey, AS Ashour, F Shi, VE Balas, Academic Press, 2018



8, [Proceedings of International Ethical Hacking Conference 2018: EHACON 2018, Kolkata, India](#)

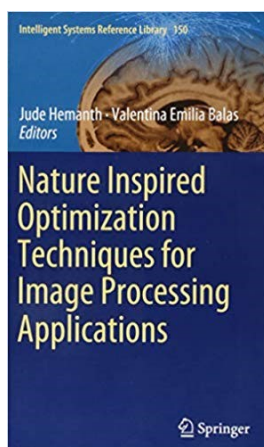
M Chakraborty, S Chakrabarti, VE Balas, JK Mandal, Springer, 2018



2018

9. [Nature Inspired Optimization Techniques for Image Processing Applications](#)

J Hemanth, VE Balas, Springer, 2018



2018

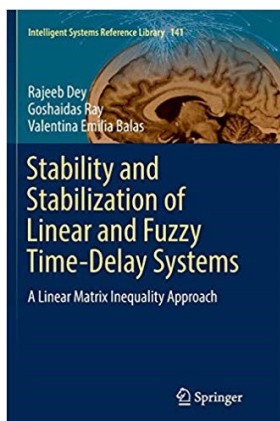


10. [Innovations in Infrastructure: Proceedings of ICIIF 2018](#)  
D Deb, E. Dey, Valentina E. Balas, Springer, 2018

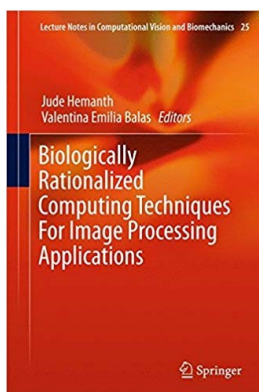


11. [Stability Analysis of Time-Delay Systems](#)  
R Dey, G Ray, VE Balas, 2018

Stability and Stabilization of Linear and Fuzzy Time-Delay Systems



12. [Biologically Rationalized Computing Techniques For Image Processing Applications](#)  
J Hemanth, VE Balas, Springer International Publishing, 2018



e) Aplicatii de proiecte de cercetare/Proiecte de cercetare in derulare castigate in competitii internationale/nationale

Se noteaza titlul proiectului, directorul/membrii din echipa de cercetare, competitia, suma (pentru proiectele in derulare).

- 1. PN3-P3-554/16.07.2018**, - Proiectul de mobilitati cu codul PN-III-P3-3.1-PM-RO-CN-2018, pozitia 10 din lista celor 29 de proiecte aprobate:  
<https://www.uefiscdi.ro/https://resource-84873://> - **PN3-P3-554/16.07.2018** - Competiția de cooperare bilaterală România – Republica Populară Chineză, directori de proiect Ona Geman, Universitatea Stefan Cel Mare din Suceava si Guojun Wang, Guangzhou University, Guangzhou, Guangdong, China, **partener Universitatea Aurel Vlaicu din Arad cu director Valentina E. Balas** avand titlul **TEHNICI INTELIGENTE PENTRU APLICATII MEDICALE UTILIZAND RETELE DE SENZORI**, acronym GUSV, Domeniul Tehnologii informationale si de comunicatii, valoare **79.488 lei, durata 2 ani**.
- 2. Proiect cu Ministerul Educatiei – Sesiunea Internationala de Comunicari Stiintifice Studentesti a XXI-a editie a Facultatii de Inginerie, iunie 2019, valoare 9375 lei**
- 3. Contract derulat in 2018 - Contract de cercetare stiintifica Nr. 9542/22.12.2017, intre Universitatea Aurel Vlaicu Arad si SC Conact Plus SRL Arad, valoare 40.000 lei, Modelarea, simularea, experimentarea si validarea unor metode avansate de soft computing in domeniul controlului cladirilor inteligente, Director de proiect – Valentina E. Balas, Director Stiintific – Marius M. Balas, Membru Noemi Clara Rohatinovici.**
- 4. Proiect in derulare: Programul operational Competitivitate 2014-2020, Axa prioritara 1 – Cercetare, Dezvoltare Tehnologica si Inovare (CDI) in sprijinul competitivitatii economice si dezvoltarii afacerilor, Actiunea 1.1.4 – Atragerea de personal cu competente avansate din strainatate pentru consolidarea capacitatii de CD, NOI NANO-ARHITECTURI DE INSPIRATIE BIOLOGICA DE TIP CELULAR — PENTRU CIRCUITE INTEGRATE - P\_37\_744 — Director Valeriu Beiu, Membri: Valentina E. Balas si Marius M. Balas, 9.338.177 lei**

5. **Proiect depus si necastigat:** PROIECTUL PRIVIND ÎNVĂȚĂMÂNTUL SECUNDAR (**ROSE**), SCHEMA DE GRANTURI PENTRU UNIVERSITĂȚI – *Centre de învățare*, Proiectul **Ingineria 2020 – ”ING 2020”**, noiembrie 2018, valoare **195.000 EURO**, Director de proiect **Marius M. Balas**
  
6. **Proiect depus si necastigat:** Proiect CHIS ERA: **Manipulation and identification of Objects using Neural Deep Fuzzy Logic Learning**, Acronim: **MINDFULL**, Coordonator Kent University, Canterbury, UK, Partener UAV, **director partener UAV – Valentina E. Balas**, Membru **Marius M. Balas**, aprilie 2018, Valoare **180.824 EURO**