



## Europass Curriculum Vitae



### Personal information

First name(s) / Surname(s) **SOARE, Vasile**  
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E-mail vivisoare@imnr.ro  
Nationality Romanian  
Date of birth 11.05.1956  
Gender Male

### Work experience

|                                      |  |
|--------------------------------------|--|
| Dates                                | January 2006 onwards   |
| Occupation or position held          | Head of the New Materials and Technologies Laboratory  |
| Main activities and responsibilities | Coordination of research activities in research of new materials and technologies<br>Director of national and international R&D projects<br>Training and development of students and young researchers |
| Name and address of employer         | National R&D Institute for Nonferrous and Rare Metals, Bucharest   |
| Type of business or sector           | Research and development in nonferrous and rare metals   |
| Dates                                | 01.1990-12.2004  |
| Occupation or position held          | 06.1990- scientific researcher 3, 09.1995: scientific researcher 2, 07.2000- scientific researcher 1;<br>from 1995- head of Lanthanides and New Materials Laboratory                                   |
| Main activities and responsibilities | Research project elaboration<br>Research project coordination<br>Experimental installation design  |
| Name and address of employer         | Institute for Non-ferrous and Rare Metals, Bucharest   |
| Type of business or sector           | Research and development in nonferrous and rare metals   |
| Dates                                | 04.1982-01.1990  |
| Occupation or position held          | Scientific researcher  |
| Main activities and responsibilities | Research works   |
| Name and address of employer         | Institute for Inorganic Chemistry and Non-ferrous Metals-IAMN, Bucharest   |
| Type of business or sector           | Research and development in inorganic chemistry and nonferrous metals  |
| Dates                                | 02.1982-04.1982  |
| Occupation or position held          | Graduate engineer  |
| Main activities and responsibilities | Department superintendent<br>Nonferrous alloys elaboration by pyrometallurgical processes  |
| Name and address of employer         | NEFERAL Metallurgical Enterprise, Bucharest  |
| Type of business or sector           | Nonferrous metallurgy  |

|                                      |  |
|--------------------------------------|--|
| Dates                                | 1981-1982  |
| Occupation or position held          | Graduate engineer  |
| Main activities and responsibilities | Electrolysis department superintendent<br>Optimisation of aluminium electrolysis processes |
| Name and address of employer         | Aluminum Industrial Unit, Slatina  |
| Type of business or sector           | Aluminium metallurgy   |

### Education and training

|  |   |
|--|---|
| Dates  | 1998  |
| Title of qualification awarded                                 | PhD   |
| Principal subjects/occupational skills covered                 | Title of the PhD thesis: Studies and researches regarding the physical-chemical basis of the lanthanides metals obtaining processes |
| Name and type of organisation providing education and training | Faculty of Materials Science and Engineering, University „Politehnica” of Bucharest   |

|  |   |
|--|---|
| Dates  | 1997  |
| Title of qualification awarded                                 | Specialist  |
| Principal subjects/occupational skills covered                 | Study of the physical-chemical processes in molten salts and metals |
| Name and type of organisation providing education and training | University of Patras, Greece  |

|  |  |
|--|--|
| Dates  | 1990   |
| Title of qualification awarded                                 | Specialist   |
| Principal subjects/occupational skills covered                 | Extraction and processing of the radioactive materials |
| Name and type of organisation providing education and training | Institute of the Atomic Physics, Magurele              |

|  |  |
|--|--|
| Dates  | 1987   |
| Title of qualification awarded                                 | Specialist                                       |
| Principal subjects/occupational skills covered                 | Interactive elaboration of the calculus programs |
| Name and type of organisation providing education and training | Informatics training centre, Bucharest           |

|  |   |
|--|---|
| Dates  | 09.1976-06.1981   |
| Title of qualification awarded                                 | Graduate engineer   |
| Principal subjects/occupational skills covered                 | Materials Science and Engineering   |
| Name and type of organisation providing education and training | Faculty of Materials Science and Engineering, University „Politehnica” of Bucharest |

**Personal skills and competences**

Mother tongue(s)

**Specify mother tongue : Romanian**

Other language(s)

Self-assessment

European level (\*)

**English**

**French**

| Understanding |                 |         |                 | Speaking           |                 |                   |                 | Writing |                 |
|---------------|-----------------|---------|-----------------|--------------------|-----------------|-------------------|-----------------|---------|-----------------|
| Listening     |                 | Reading |                 | Spoken interaction |                 | Spoken production |                 |         |                 |
| C2            | Proficient User | C2      | Proficient User | C2                 | Proficient user | C2                | Proficient user | C2      | Proficient user |
| C1            | Proficient User | C1      | Proficient User | C1                 | Proficient User | C1                | Proficient User | C1      | Proficient User |

(\*) Common European Framework of Reference for Languages

Social skills and competences

Team work: I have worked in various types of research teams for national and international projects and programmes  
 Mediating skills: I work on the borders between technical staff, research policy and researchers  
 Ability to establish and maintain good working relations  
 Extremely organised person  
 Good abilities for synthetic views over concrete situations  
 End-oriented work capacity  
 Problem-solving attitude  
 Responsibility  
 Strong referential values of fairness, equity and dignity

Organisational skills and competences

President ( elected ) of the Scientific Council of IMNR (2005-2009)  
 Director of national R&D projects (Orizont 2000, Relansin, Matnantech, CERES, Corint, PN2-Partnerships)  
 Director of CNCSIS GRANTS  
 Project Partners Director-PPD for NATO Science for Peace Programme 971858 „HITECH ALLOYS” (1999-2003)  
 Romania – Greece Bilateral project director

Technical skills and competences

Silver Medal for the patent „ Process and installation for Ti and Ti alloys obtaining by electrochemical process” –XII International Congress for Inventions, Scientific Research and New Technologies” Bucharest, 7-11 oct.2008  
 Gold medal for the patent „Aluminium alloys Obtaining Process by micro bonding with Nanostructured Prealloys”, EUROINVENT 2012, Iasi, Romania, 12 may 2012  
 Silver medal for the patent „The electrochemical process for obtaining Ni-Zn-P double layer thin film for anticorrosive application”, EUROINVENT 2012, Iasi, Romania, 12 may 2012  
 Bronze medal for the patent ”Process and equipment for in-situ obtaining of aluminum alloys matrix composite materials reinforced with carbide particles”, EUROINVENT 2012, Iasi, Romania, 12 may 2012  
 Rare and disperse metals and alloys synthesis through electrochemical processes  
 Molten salts and aqueous solutions electrochemistry  
 Metal matrix composites obtaining by in-situ processes.  
 Nonferrous metals and alloys elaboration  
 Synthesis of nonferrous metals and alloys by metal-thermal reduction  
 Author and co-author of 17 patents

Computer skills and competences

Competent with most Microsoft Office programs  
 Some experience with HSC

**Additional information**

Evaluator for national programmes: RELANSIN, MATNANTECH, CERES, (CNMP and CNCSIS)  
 Publications: 35 papers at internal and international conferences and congresses, 35 articles (22 in ISI journals)

**Annexes**

- List of publications ( selection)  
 List of national and international projects (selection)

## LIST OF PUBLICATIONS (SELECTION)

## Articles:

## Refereed Journals

1. **V. Soare**, M. Burada, T. Ostvold, C. Kontoyannis, E. Stefanidaki, „*Study of the Mg-Nd alloy obtaining by electrolysis in molten oxifluoride media*”, Journal of Mining and Metallurgy, section B, Metallurgy, Bor-Serbia and Montenegro, 39 (1-2) B, 2004.
2. **V. Soare**, C. Gurgu, M. Burada, T. Østvold and C. Kontoyannis, „*The production of a Mg –Nd alloy by direct electrolysis from a oxifluoride melt*”, Canadian Metallurgical Quarterly, Vol.45, nr.2, 2006
- 3., I. Surcel, **V. Soare**, M. Târcolea, S. Ciucă. I. Carcea, C. Roman, „*Comparative Analysis between Electrochemical and Conventional Titanium Obtaining Methods*”, Metallurgy and New Materials Researches, Vol. XIV, No. 3-4/2006, pp.30-39
4. D. Taloi, M. Tarcolea, **V. Soare**, M. Burada, I. Carcea, „*Study on the chemism of the chlorinated electrolyte-sintered cathode-anode system at titanium dioxide electrochemical reduction in calcium chloride*”, Chemistry Magazine, vol. 59, 2008, pp. 486-490, ISSN 0034-7752
5. C. Roman, I. Carcea, R. Chelariu, **V. Soare**, „*Pressing and sintering of TiO<sub>2</sub> powder cathode used to obtain titanium by electrochemical reduction*”, Annals of DAAAM for 2008 & Proceedings of the 19th International DAAAM Symposium, Viena, 2008, pp. 593-595, ISSN 1726-9679, ISBN 978-3-901509-68-1
6. M. Tarcolea, M. C. Cotrut, S. Ciuca, **V. Soare**, I. Surcel, „*Titanium obtaining through electrochemical reduction of titanium dioxide in chlorinated media*”, Annals of DAAAM for 2008 & Proceedings of the 19th International DAAAM Symposium, Viena, 2008, , pp. 596-598 ISSN 1726-9679, ISBN 978-3-901509-68-1
7. M. Burada, **V. Soare**, D. Mitrica, C. P. Lungu, V. Ghenescu, L. Ion – *Growth of CIS Thin Films using one step electrodeposition process*, Metalurgia International, ISSN 1582-2214, vol. 3,2009, p.191-196
8. G. Popescu, I. Vladutiu, **V. Soare**, I. Surcel, D. Mitrica, I. Carcea – *Nanostructured Aluminium Alloys with High Physical and Mechanical Properties – Metalurgia International*, ISSN 1582-2214, vol. 2,2009, p.35-38.
9. **V. Soare**, C. Gurgu, I. Surcel, M. Burada, V.I. Soare – *Electrochemical process for the manufacturing of titanium alloy matrix composites* , METALLURGY, Zagreb, Croatia, ISSN 0543-5846 , vol. 48 (3), 2009, p.151-155.
10. Carcea, I; Mareci, D; Roman, C; **Soare, V**; Chelariu, R „*Electrodepositing and characterization of Zn-Ni-P thin film* “, - METALURGIA INTERNATIONAL ISSN 1582-2214, XVI (5):33-37 / 2011
11. Moldovan, P; Butu, M; Popescu, G; Buzatu, M; Usurelu, E; **Soare, V**; Mitrica, D „*Thermodynamics of Interactions in Al-K2TiF6-KBF4 System* „CHEMISTRY MAGAZINE ISSN 0034-7752, 61 (9):828-832 / 2010
12. **Soare, V**; Burada, M; Mitrica, D; Badilita, V; Stoiciu, F; Lungu, CP; Ghenescu, V; Rusu, MI; Antohe, S „ *Electrodeposition and characterization of CuInSe2/CdS multilayered thin films deposited on flexible substrate* „ OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS , 2010 vol.4, nr.12, p 2018-2021, ISSN 1454 - 4164
13. **V. Soare**, D. Mitrică, V. Bădiliță, I. Constantin, M. Târcolea, G. Popescu „ *Experimental models for processing of nanostructured aluminum master alloys*”, Metalurgia International, ISSN 1582-2214, XVI (4):33-37 / 2011
14. G. Popescu, L. Vlăduțiu, **V. Soare**, D. Mitrică, R. Trușcă, E. Vasile „*Nanostructured Al-Mn Master Alloys Obtained by Mechanical Alloying*”, Metalurgia International , ISSN 1582-2214 XVI (5):33-37 / 2011
15. **V. Soare**, I. Surcel, G. Popeneciu, V. Badiilita, F. Stoiciu, V. Soare, D. Mitrica, M. Burada, „*Physical – structural characteristics of Ti<sub>0.8</sub>Zr<sub>0.2</sub>Cr<sub>1.2</sub>Mn<sub>0.8</sub> hydrogen storage alloy*”, Metallurgy and new materials researches, vol. XIX, no.1/2011, ISSN 1221-5503
16. **V. Soare**, M. Burada, D. Mitrica, I. Constantin, F. Stoiciu, C. Cotrut, A. M. Popescu „ *Electroless deposition process of NiZnP thin films for anticorrosive applications*”, Metallurgy and new materials researches, vol. XIX, no.2/2011, ISSN 1221-5503
17. D. Mitrica, **V. Soare**, M. Burada, V. Badiilita, V. Soare, I. Constantin, P. Moldovan, G. Popescu, „*Melt spinning process for nanostructured AlSr master alloy obtaining*”, Metallurgy and new materials researches, vol. XIX, no.2/2011, ISSN 1221-5503
18. A. M. Popescu, V. Constantin, **V. Soare**, M. Tarcolea, M. Olteanu „*Obtaining, characterisation and corrosion behavior in aqueous media of Zn-Ni-P alloy films*”, Chemistry Magazine, 62 (9), 2011.
19. A. M. Popescu, V. Constantin, M. Olteanu, **V. Soare**, M. Burada, E. I. Neacșu, „*Morphology and corrosion behavior of Zn-Ni-P thin films electrolessly deposited from chloride baths*”, Chemistry Magazine, vol. 64, nr. 4 (2013), 417-424.
20. **V. Soare**, M. Burada, I. Constantin, D. Dumitrescu, F. Stoiciu, V. Bădiliță, D. Mitrică, „*The influence of the process control agent and dispersoid on the mechanical alloying of the A5083 alloy*”, Metallurgy and new materials researches, vol. 21, no. 4 (2013), 31-41.
21. A. Usurelu-Cristea, G. Popescu, D. Mitrica, **V. Soare**, M. Buzatu, „*Obtaining of AlMgMnCr wrought alloy by alloying with AlMn nanostructured master alloy*”, Metalurgia International, vol. 18, Special Issue 1, 2013, 100-103.
22. E. I. Neacșu, V. Constantin, **V. Soare**, P. Osiceanu, M. V. Popa, A. M. Popescu, „*Corrosion Protection of Steel Using ZnNiP Electroless Coatings*”, Chemistry Magazine, vol.64, no.9 (2013), 994-999.
23. I. Florea, R. M. Florea, O. Băltătescu, **V. Soare**, R. Chelariu, I. Carcea, „ *High entropy alloys*”, Journal of optoelectronics and advanced materials ,vol. 15, no. 7- 8 (2013), 761 – 767.
24. **V. Soare**, D. Mitrică, I. Constantin, M. Ghiță, G. Popescu, I. Carcea, I. Florea, „*High entropy alloy with enhanced mechanical properties*”, Metallurgy and new materials researches, vol. 31, no. 1 (2013), 29-39.
25. I. Florea, R. M. Florea, O. Baltatescu, **V. Soare**, C. Roman, I. Carcea, „*Research on electromagnetic properties of high entropy alloys*”, Advanced Materials Research, vol. 837 (2014), 277-282.
26. **V. Soare**, M. Burada, I. Constantin, M. Ghita, V. Constantin, F. Miculescu, A. M. Popescu, „*Synthesis and performance of Zn–Ni–P thin films*”, Chinese Physics B, vol. 24, no. 3 (2015), 036101-1 - 036101-10.

27. **V. Soare**, D. Mitrica, I. Constantin, G. Popescu, I. Csaki, M. Tarcolea, and I. Carcea, „*The Mechanical and Corrosion Behaviors of As-cast and Re-melted AlCrCuFeMnNi Multi-Component High-Entropy Alloy*”, Metallurgical and Materials Transactions A, vol. 46A (2015), 1468-1473.
28. **V. Soare**, D. Mitrica, I. Constantin, V. Badilita, F. Stoiciu, A. M. J. Popescu, I. Carcea, „*Influence of the re-melting on the microstructure, hardness and corrosion behaviour of the AlCoCrFeNiTi high-entropy alloy*”, Materials Science And Technology, vol. 31, no. 10 (2015), 1194-1200.
29. **V. Soare**, M. Burada, I. Constantin, D. Mitrică, V. Bădiliță, A. Caragea, M. Târcolea, „*Electrochemical deposition and microstructural characterization of AlCrFeMnNi and AlCrCuFeMnNi high entropy alloy thin films*”, Applied Surface Science, vol. 358 (2015), 533–539.
30. I. Florea, G. Buluc, R. M. Florea, **V. Soare**, I. Carcea, „*Study on corrosion resistance of high - entropy alloy in medium acid liquid and chemical properties*”, IOP Conference Series: Materials Science and Engineering, vol. 95 (2015), 012013:1-6.
31. M. A. Matara, I. Csaki, G. Popescu, C. A. Popescu, **V. Soare**, A. Soare, D. Mitrică, „*AlCrCuFeNiMn high entropy alloy obtained by powder metallurgy route*”, U.P.B. Scientific Bulletin, Series B, vol. 77, no. 4 (2015), 351-358.
32. **V. Soare**, D. Dumitrescu, M. Burada, I. Constantin, V.I. Soare, P. Capota, A. M. J. Popescu, V. Constantin, „*Recovery of metals from waste electrical and electronic equipment (WEEE) by anodic dissolution*”, Revista de Chimie, 67, 5 (2016), 920.
33. A. M. Popescu, C. Donath, E. I. Neacsu, **V. Soare**, V. Constantin, „*Preliminary study for copper recovery in WEEE leachate by using ionic liquids based on choline chloride*”, Revista de Chimie, vol. 67, no. 6 (2016), 1076-1079.
35. G. Popescu, M. A. Matara, I. Csaki, C.A. Popescu, D. Mitrică, **V. Soare**, I. Carcea, „*Mechanically Alloyed High Entropy Composite*”, IOP Conference Series: Materials Science and Engineering, vol. 145 (2016), 072007.
35. **V. Soare**, M. Burada, D. V. Dumitrescu, I. Constantin, V. Soare, A. M. J. Popescu, I. Carcea, „*Innovative ap-proach for the valorization of useful metals from waste electric and electronic equipment (WEEE)*”, IOP Conference Series: Materials Science and Engineering, vol. 145 (2016), 022039.

### Refereed proceedings

1. **V. Soare**, I. Surcel, D. Taloi, V.I. Soare, „*Thermodynamics and kinetics of the reactions in the Mg-NdF<sub>3</sub>-LiF system*”, Proceeding: International Symposium on Molten Salts – Patras, Greece, sept. 1999.
2. **V. Soare**, I. Surcel, D. Taloi, „*Study of the phase-diagram in the ternary system LiF-NdF<sub>3</sub>-Nd<sub>2</sub>O<sub>3</sub>*”, Proceeding: EuChem Conference on Molten Salts – Lyngby, Denmark, aug. 2000
3. **V. Soare**, C. Gurgu, I. Surcel, A. Rus, „*Study of the anodic gases composition during Nd<sub>2</sub>O<sub>3</sub> – MgO electrolysis in fluoride media*”, Proceeding: EuChem Conference on Molten Salts, Oxford, England, sept. 2002
4. **V. Soare**, C. Gurgu, M. Burada „*Solubility and dissolution kinetic of the Nd<sub>2</sub> (CO<sub>3</sub>)<sub>3</sub> in molten fluorides*”, Proceeding: EuChem Conference on Molten Salts, Oxford, England, sept. 2002
5. **V. Soare**, I. Surcel, C. Gurgu, M. Târcolea, „*New Approach for Titanium Alloy Matrix Composites Synthesis by an Electrochemical Process in Molten Salts*”, Proceeding ICSAM 2007 - The International Conference on Structural Analysis of Advanced Materials (Sept. 2007) Patras, Grecia
6. M. Târcolea, D. Taloi, **V. Soare**, I. Surcel, R. Chelariu, „*Thermodynamic and Kinetic Studies of the Titanium Dioxide Reduction in the Molten Calcium Chloride by an Electrochemical Process*”, EUROMAT, Nurnberg, 2007
7. I. Surcel, **V. Soare**, V. Badilita, D. Gheorghe, C. Serghe, „*Advanced Aluminium Alloy with High Physical – Mechanical Characteristics, for Aeronautical Constructions Applications*”, The Sixth International Congress in Materials Science and Engineering, Romanian Academy of Technical Sciences The „Gh. Asachi” Technical University Iasi, Faculty of Materials Science and Engineering, 24-27.V.2007, Proceeding
8. **V. Soare**, C. Gurgu, I. Surcel, M. Burada, V.I. Soare, „*Electrochemical process for titanium alloy matrix composites obtaining*”, 8<sup>th</sup> International Symposium of Croatian Metallurgical Society - Materials and Metallurgy”, Sibenik CROATIA,
9. **V. Soare**, I. Surcel, M. Burada, C. Gurgu, M. Târcolea, „*Titanium alloy matrix composites obtained through an electrochemical process in molten calcium chloride*”, 1<sup>st</sup> International Round Table on Titanium Production in Molten Salts, Koln, 2008, Germany, Proceedings 2008, ISBN 978-4-7598-0747-0
10. Burada Marian, **Soare Vasile**, Radu Mircea, Dumitru Mitrică, Constantin Ionut, Lungu Petrica Cristian, Ghenescu Veta, Antohe Stefan, „*CuInSe<sub>2</sub> thin films electrodeposition for photovoltaic applications*”, National symposium with international participation „Chemistry priorities for sustainable development” (PRIOCHEM) – V<sup>th</sup> Edition, ICECHIM-Bucharest, 29-30 October 2009, Sinaia, ISBN 978-973-0-06996-9
11. V. Constantin, A.M. Popescu, **V. Soare**, M. Burada, M. Tarcolea, „*Corrosion properties of Zn-Ni-P thin films in aqua and ionic liquid media*”, Euromat 2011, 12-15 September, Montpellier, France
12. G. Popescu, **V. Soare**, D. Mitrica, I. Gheorghe, „*Obtaining and Characterization of Nanostructured Al-Sr Master Alloys*” 2012 TMS Annual Meeting & Exhibition, Orlando, USA, Published in the Supplemental Proceedings: vol. 2, pag. 43-50.
13. D. Mitrica, **V. Soare**, I. Constantin, F. Stoiciu, G. Popescu, „*Microstructural characterization of AlSi7Mg/AlN and AlSiMg/SiC composites obtained by reactive gas injection method*”, 4<sup>th</sup> International Conference Advanced Composite Materials Engineering COMAT, 18-20 October 2012, Brasov, Romania.
14. **V. Soare**, D. Mitrica, G. Popescu, I. Stan, „*Obtaining of AlSr10 and AlTi5B1 nanostructured master alloys by melt spinning*” The 21<sup>th</sup> National Foundry Conference and Exhibition - Iasi, Romania, 13-14 June 2012.
15. **V. Soare**, D. Mitrica, G. Popescu, G. Iacob, „*Obtaining of AlSi7Mg cast alloy by micro-alloying with nanostructured AlSr10 and AlTi5B1 master alloys*” The 21<sup>th</sup> National Foundry Conference and Exhibition - Iasi, Romania, 13-14 June 2012.
16. D. V. Dumitrescu, **V. Soare**, I. Constantin, „*Modern process for obtaining nanostructured ZnO*”, National symposium with international participation „Environment & Progress”, IX<sup>th</sup> edition, 25 October 2013, Cluj-Napoca, Romania.
17. **V. Soare**, M. Burada, D. Mitrică, I. Constantin, D. V. Dumitrescu, „*Investigation of Al-5083 alloy obtained by mechanical alloying*”, 12<sup>th</sup> Young researchers' Conference - Materials Science and Engineering, 11-13 December 2013, Belgrade, Serbia.
18. D. Mitrica, M. Burada, **V. Soare**, M. Ghita, R. M. Florea, F. Miculescu, P. Moldovan, „*Microstructure and properties of aluminum metal matrix composite prepared by in-situ method*”, TMS 143rd Annual meeting & exhibition, 16-20 February 2014, San Diego, USA.
19. I. Constantin, **V. Soare**, M. Burada, D. Mitrica, D. Dumitrescu, P. Moldovan, A. M. Popescu, „*Double layer multifunctional Zn-Ni-P coatings for anticorrosive applications*”, TMS 143rd Annual meeting & exhibition, 16-20 February 2014, San Diego, USA.

20. **V. Soare**, D. Mitrică, I. Constantin, G. Popescu, I. Csaki, M. Tarcolea, I. Carcea, "AlMnCrCuFeNi multicomponent alloy with superior hardness and corrosion resistance", TMS 143rd Annual meeting & exhibition, 16-20 February 2014, San Diego, USA.
21. D. V. Dumitrescu, **V. Soare**, I. Constantin, M. Burada, D. Mitrică, "Microwave field melting of non-ferrous metallic wastes", 10<sup>th</sup> ELSESDIMA International Conference, 18-19 September 2014, Cluj-Napoca, Romania.
22. **V. Soare**, M. Burada, I. Constantin, D. Mitrică, V. Bădiliță, A. Caragea, M. Târcolea, "Electrochemical deposition and microstructural characterization of AlCrFeMnNi and AlCrCuFeMnNi high entropy alloy thin films", 9<sup>th</sup> International Conference on Materials Science and Engineering – BRAMAT 2015, 5 – 7 March 2015, Brasov, Romania.
23. G. Popescu, **V. Soare**, D. Mitrica, I. Csaki, V. Badilita, M. Ghita, I. Carcea, "Study of high entropy alloys synthesis by induction melting and mechanical alloying", 9<sup>th</sup> International Conference on Materials Science and Engineering – BRAMAT 2015, 5 – 7 March 2015, Brasov, Romania.
24. **V. Soare**, D. V. Dumitrescu, M. Burada, I. Constantin, V. I. Soare, P. Capotă, "Study of Metals Recovery from WEEE by Anodic Dissolution", 9<sup>th</sup> International Conference on Materials Science and Engineering – BRAMAT 2015, 5 – 7 March 2015, Brasov, Romania.
25. D. Mitrica, **V. Soare**, I. Constantin, G. Popescu, V. Badilita, F. Stoiciu, A. M. J. Popescu, "Improvement of the Mechanical and Corrosion Resistance Characteristics of AlCrFeMnNi High Entropy Alloy by the Annealing Process", The 19<sup>th</sup> Romanian International Conference on Chemistry and Chemical Engineering – RICCCCE 19, 02-05 September 2015, Sibiu, Romania.
26. M. Burada, **V. Soare**, D. V. Dumitrescu, I. Constantin, M. T. Olaru, V. Badilita, V. Soare, P. Capota, "Separation of Precious Metals from WEEE by Acid Solubilization and Thiourea Extraction", The 19<sup>th</sup> Romanian International Conference on Chemistry and Chemical Engineering – RICCCCE 19, 02-05 September 2015, Sibiu, Romania.
27. A. M. Popescu, V. Constantin, C. Donath, E. I. Neascu, **V. Soare**, M. Gaune-Escard, "Preliminary Study for Copper and Tin Recovery in WEEE Leachate By Using Ionic Liquids Based on Choline Chloride", 3<sup>rd</sup> International Symposium on Sustainable Molten Salt and Ionic Liquid Processing, 4-9 October 2015, Antalya, Turkey.
28. G. Popescu, M. A. Matara, I. Csaki, C.A. Popescu, D. Mitrică, **V. Soare**, I. Carcea, "Mechanically Alloyed High Entropy Composite", ModTech 2016 International Conference – Modern Technologies in Industrial Engineering", 15-18 June 2016, Iasi, Romania.
29. **V. Soare**, M. Burada, D. V. Dumitrescu, I. Constantin, V. Soare, A. M. J. Popescu, I. Carcea, "Innovative approach for the valorization of useful metals from waste electric and electronic equipment (WEEE)", ModTech 2016 International Conference – Modern Technologies in Industrial Engineering", 15-18 June 2016, Iasi, Romania.
30. D. Mitrica, **V. Soare**, I. Constantin, M. Olaru, V. Badilita, V. Soare, F. Stoiciu, G. Popescu, I. Carcea, "Influence of the heat treatment processes on the properties of high entropy alloys based on Al-Cr-Fe-Mn-Ni system", The 3<sup>rd</sup> Mediterranean Conference on Heat Treatment and Surface Engineering – MCHTSE2016, 26-28 September 2016, Portoroz, Slovenia.
31. I. Csaki, G. Popescu, M. A. Matara, R. Trusca, **V. Soare**, D. Mitrica, "Structural Evolution of AlCrFeNi-Mn/Graphite During Mechanical Alloying from 5 to 40 Hours", WORLD PM2016- Congress and exhibition, 9-13 October 2016, Hamburg, Germany.
32. A. M. Popescu, **V. Soare**, C. Donath, E. I. Neascu, I. Constantin, M. Burada, V. Constantin, "The application of deep eutectic solvent ionic liquids for electrocatalytic dissolution and recovery of metals from WEEE", International Conference of Physical Chemistry RomPhysChem-16, 21-23 September 2016, Galati, Romania.
33. D. Mitrica, **V. Soare**, M. T. Olaru, V. Dragut, G. Popescu, C. Predescu, A. Berbecaru, Vi. Soare, M. Ghita, "Influence of the element additions to the microstructural and mechanical characteristics of selected high entropy alloys", 10<sup>th</sup> International Conference on Materials Science & Engineering – BraMat 2017, 8 – 11 March 2017, Brasov, Romania.
34. M. Burada, **V. Soare**, I. Constantin, P. Capotă, V. Draguț, M. Ghita, A. M. J. Popescu, "Sequential electrodeposition of multilayered Sb-Te/Zn-Sn thin films for thermoelectric applications", 10<sup>th</sup> International Conference on Materials Science & Engineering – BraMat 2017, 8 – 11 March 2017, Brasov, Romania.
35. A. M. J. Popescu, V. Constantin, **V. Soare**, M. Burada, I. Constantin, D. V. Dumitrescu, Vi. Soare, M. Ghita, M. Buzatu, "Recovery of precious metals from anodic dissolution slime by extraction in ionic liquids", 10<sup>th</sup> International Conference on Materials Science & Engineering – BraMat 2017, 8 – 11 March 2017, Brasov, Romania.

## Patents:

- „Production of aluminum and lanthanide prealloys consists of electrolysis of lanthanide oxides in modified cryolite, with graphite electrodes”, Patent Number(s) RO116388-B1
- “Process and installation for Mg-Nd master alloys obtaining by electrochemical co-deposition”, Patent Number(s) RO121282 B1
- “Electrolytic process and cell for preparing metal titanium and titanium alloys by electrochemical process”, Patent Number(s) RO123257-B1
- “Process for obtaining of Nd-Fe-B magnetic alloy and resulting magnet”, OSIM, nr. 121793.2008, Romania
- „Process for preparing refractory transition metals by electrochemical reduction”, Patent Number(s) RO125599-A2
- “Process for preparing metal matrix composite materials by electrochemical process”, Patent Number(s) RO125598-A2
- “Silver based brazing alloys, with no cadmium contents, with enhanced properties, and obtaining method” ROA200900678
- “Tin based soldering alloys, with no lead contents, with enhanced properties, and obtaining method”
- “Method and installation for obtaining composite materials with aluminium alloy matrix and carbide reinforcing particles by an in-situ process” ROA201000835
- “Electrochemical process for obtaining CIS thin films for photovoltaic applications” ROA201001036
- “Transparent ZnO electrode for solar cells and deposition method based on thermionic vacuum arc” ROA201000994
- “In-situ method and experimental installation for obtaining AL-Si/AlN composite materials” ROA201100385
- “Electrochemical process for obtaining double layered Ni- Zn- P thin films for anticorrosive applications” ROA201101259
- “Process for obtaining aluminum alloys with enhanced mechanical characteristics by microalloying with nanostructured master alloys” RO2011A01359
- “Process and experimental installation for obtaining porous aluminium alloys with low specific weight” ROA201200809

„Process for aluminum recovery using microwaves for melting metal can wastes” ROA201400301

„Process for silver recovery from used etching solutions” ROA201400293

„Process for the obtaining by electrochemical reduction of a high-melting metal” BI 125599/30.06.2014.

ANNEX 2

### LIST OF NATIONAL AND INTERNATIONAL PROJECTS (SELECTION)

#### INTERNATIONAL PROJECTS:

| Project Grant   | Position                  | Period    |
|---|---------------------------|-----------|
| Romania-Greece international cooperation: “Study on the influence of the electrolyte physical-chemical properties at lanthanide electro deposition in fluoride media” | Romania Project Director  | 1996-1998 |
| Project NATO” Science for Peace” SfP 97 1858: “Improvement of the technological parameters in the electrochemical production of Mg-Nd alloys from oxyfluoride media”  | Project Partners Director | 1998-2003 |

#### NATIONAL PROJECTS:

| Programme/Project  | Position               | Period     |
|--|------------------------|------------|
| Project RELANSIN „ Obtaining Al-TR alloys by molten salts electrolysis”  | Researcher             | 1999-2003  |
| Project RELANSIN „ Low energy consumption technologies for obtaining new lead alloys necessary in the performant accumulator industry”   | Project Coordinator    | 2001- 2004 |
| Project MATNANTECH „ High energy permanent magnets based on neodymium intermetallic compounds”   | Project Coordinator    | 2003-2005  |
| Project CERES „ New, unconventional concept for obtaining titanium alloys by electrochemical processes”  | Project Coordinator    | 2004-2006  |
| Grant CNCISIS „ Physical-chemical processes modeling in elaboration of a new, ecologic method for obtaining titanium”  | Project Coordinator    | 2006-2008  |
| Grant „ New concept for titanium alloys matrix composites synthesis by molten salts electrochemical processes”   | Scientific Coordinator | 2007-2008  |
| Programme PNCDI2, Contract 71-134 „ New types of flexible solar cells based on CIS compounds obtained through electro-deposition”  | Project Coordinator    | 2007-2010  |
| Programme PNCDI2, Contract 71-058 “New methods for metal matrix composite materials synthesis by in-situ processes”  | Team leader            | 2007-2010  |
| Programme PNCDI2, Contract 21/023 „ Energetic technologies implementation by developing a thermal engine based on hydrogen absorbing metallic alloys using solar energy or residual energies”  | Team leader            | 2007-2010  |
| Programme PNCDI2, Contract 72-205 “Nanostructured aluminum alloys with high physical-mechanical characteristics”   | Team leader            | 2008-2011  |
| Programme PNCDI2, Contract 72-221 „ New method for the protection of steel materials against corrosion by electro-deposition of Zn-Ni-P ternary alloys thin films”                             | Project Coordinator    | 2008-2011  |
| PN 09240102 „ Research regarding the obtaining of ultra light Al based alloys by mechanical alloying”  | Researcher             | 2010-2014  |
| PN-II-IN-CI-2012-1, CI 168/2012 “New method for obtaining nanostructured ZnO in microwave field”   | Researcher             | 2012-2013  |
| PN-II-IN-CI-2013-1, CI 191/2013 „Innovative melting of nonferrous metals in microwave field”   | Researcher             | 2013-2014  |
| PN-II-IN-CI-2013-1, CI 190/2013 “Innovative method for the recovery of silver from etching solutions”  | Project Coordinator    | 2013-2014  |
| Programme PNCDI2, Contract 270/2014 “New high entropy alloys/composites with superior mechanical and corrosion resistance characteristics, for high temperature uses”.                         | Researcher             | 2014-2016  |
| PN 09240110 “High-entropy alloys with superior mechanical characteristics and corrosion resistance for high-temperature applications”  | Researcher             | 2014-2015  |
| Programme PNCDI2, Contract 82/2014 “Innovative and ecological technology for the recovery of nonferrous metals from electrical and electronic equipment wastes (WEEE) using microwaves energy” | Project Coordinator    | 2014-2016  |
| PN 09240113 „Studies and researches for the obtaining of new semiconductor materials for applications in renewable energy”   | Researcher             | 2015       |

|   |                        |           |
|---|------------------------|-----------|
| PN 16200304 "High entropy alloys for applications in energy industry"   | Researcher             | 2016-2017 |
| PN 16200202 "Advanced metallic materials with elevated thermoelectric properties"   | Researcher             | 2016-2017 |
| POC-A1-A1.2.3-G 2015 – P 40-397- Promoting unconventional eco-efficient technologies for metal recovery useful from industrial waste by building partnerships for knowledge transfer with economic agents | Scientific Coordinator | 2016-2019 |