Europass Curriculum Vitae

Personal information



First name / Surname	**Mihai Varlam**
Address	[redacted]
Telephone	[redacted] [redacted]
Fax)	[redacted]
E-mail	mihai.varlam@icsi.ro
Nationality	Romanian
Date of birth	[redacted]
Gender	Male

Desired employment / Occupational field

Work experience

Dates	**December 2016 – present**
Occupation or position held	**General Manager of ICSI Rm. Valcea**
Main activities and responsibilities	Management of scientific activities Management of human resources Defining research and development strategy of the institute Assure the financing funds for the activity – look for various call for projects and develop proposals
Name and address of employer	**National R&D Institute for Cryogenics and Isotopic Technologies, ICSI Rm. Valcea, Romania, National Centre for Hydrogen and Fuel Cell Uzinei street, no.4, Ramnicu Valcea, Romania**
Type of business or sector	**Management, Research & Development**
Dates	**November 2009 – December 2016**
Occupation or position held	**Director – Coordinator of National Centre for Hydrogen and Fuel Cell**
Main activities and responsibilities	Management of research project developed in the NCHFC Management of human resources Defining research and development strategy of the centre Assure the financing funds for the activity – look for various call for projects and develop proposals
Name and address of employer	**National R&D Institute for Cryogenics and Isotopic Technologies, ICSI Rm. Valcea, Romania, National Centre for Hydrogen and Fuel Cell Uzinei street, no.4, Ramnicu Valcea, Romania**
Type of business or sector	**Research & Development**
Dates	**January 2002 - November 2009**

Occupation or position held	**Scientific Contract agent**
Main activities and responsibilities	Working in gas group – Isotope Measurement Unit Developing projects for Isotope using for Global Climate Change Investigation Gas flow studies for elaborate the mathematical model for absolute isotope amount ratio mass spectrometer Development of Nitrous oxide absolute isotope amount ratio measurement Applying of SSTKIA method for Hydrogen fuel cell PEM type study New developments and applications of using Steady-State Transient Kinetic Isotope Analysis for Hydrogen Fuel Cell systems
Name and address of employer	**Joint Research Centre – Institute for Reference Materials and Measurements Retieseweg 111, Geel, Belgium**
Type of business or sector	**Research & Development**
Dates	**February 1996 – January 2002**
Occupation or position held	**Head of Research & Development Department** **Scientific Researcher I – starting with 2000, - Decision no.130/06/10/2000**
Main activities and responsibilities	Develop new research projects and manage the laboratories activity Elaborating strategy, develop and coordinate the high vacuum research program – designing and development of high-vacuum equipment – Romanian made Coordinate the mass spectrometry laboratory activity- Isotope ratio analysis and quantitative gas analysis Develop new methods and techniques using molecular diffraction for surface analysis – catalysis studies by molecular scattering Developing and coordinate the gas-surface interaction research group Elaborate the working strategy and defining the new Romanian research activity direction in the field of Hydrogen Fuel Cell technology (2000)
Name and address of employer	**National R&D Institute for Cryogenics and Isotopic Technologies, ICSI Rm. Valcea, Uzinei street, no.4, Ramnicu Valcea, Romania**
Type of business or sector	**Research & Development**
Dates	**June 1991-February 1996**
Occupation or position held	**Senior Researcher – Research group leader – Principal researcher II**
Main activities and responsibilities	Coordinate the mass spectrometry group Isotope hydrological studies Research exploratory projects in the gas-surface analysis Develop new methods for Hydrogen isotope measurements
Name and address of employer	**National R&D Institute for Cryogenics and Isotopic Technologies, ICSI Rm. Valcea, Uzinei street no.4, Ramnicu Valcea, Romania**
Type of business or sector	**Research & Development**
Dates	**January 1990-June1991**
Occupation or position held	**Scientific researcher – CP III**
Main activities and responsibilities	Working in the cyclotron accelerator – neutron backscattering analysis – modelling and developing experiments
Name and address of employer	**National Research Institute for Nuclear Engineering Bucharest**
Type of business or sector	**Research**
Dates	**September 1984-january 1990**
Occupation or position held	**Junior researcher**
Main activities and responsibilities	Theoretical works for modeling ionic optics for mass spectrometry Modeling and designing Isotope Ratio Mass Spectrometers for Hydrogen isotope ratio measurements Rarefied gas flow calculations for vacuum systems
Name and address of employer	**“G” plant Research Unit**
Type of business or sector	**Research & Development**

Education and training

Dates	**March 1991-september 1996**
Title of qualification awarded	**Doctor in Physics**
Principal subjects/occupational skills covered	▸ Topic : Molecular and Atomic Physics - Title of doctoral thesis – *Gas-surface interaction at low pressure and cryogenic temperatures*
Name and type of organisation providing education and training	**Physics Faculty, University of Bucharest**
Level in national or international classification	

Dates	**September 1979-june 1984**
Title of qualification awarded	**Physics engineering graduated**
Principal subjects/occupational skills covered	Nuclear Physics – Physics of Nuclear Reactors
Name and type of organisation providing education and training	**Faculty of Physics, University of Bucharest**
Level in national or international classification	

Personal skills and competences

Mother tongue(s) Romanian

Other language(s)

Self-assessment	**Understanding**				**Speaking**				**Writing**	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
English	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
French	B1	Independent user	B1	Independent user	B1	Independent user	B1	Independent user	A2	Basic user

(*) Common European Framework of Reference for Languages

Social skills and competences

I worked in a multicultural environment and understood how important is to work together and to become a part of a unified effort in order to achieve a given target. I do believe that I got the required ability to adapt to diverse situations. I participated at various seminars and training course, organized by JRC-IRMM, directly aimed or related to the significance of the team work. Also, I'm coordinating a quite large activity staff, I assume (I hope at least) that I have good communication skills.

Project management	First of all, it must be emphasis that I graduated a Project management course organised by JRC-European Commission I was director of four POS projects (with a total financing of about 100 mil. Euro) from which resulted important research facilities which are active now at NRDIICT Ramnicu Valcea: - Hy-Ro -2.0 – Extension of National Center for Hydrogen - new Research Laboratories to complete the existing capabilities of the existing NCHFC - ROM-EST – Research laboratories for energy storage – Lithium-Ion Battery Laboratory - CRYO-HY – improvement of research capability of NRDIICT by creating a new Low Temperature Laboratory infrastructure. - ROMHY-ISO – POS type project based on a recognised researcher from abroad, to coordinate a research group in Romania. Specifically, it is about a SSITKA methodology for investigation of physical and chemical processes for Fuel Cell
Organisational skills and competences	Staring with 1991, I have coordinated and organised the activity of researcher staff, in a position of group leader or Head of department afterward. I was responsible for a team of 50 people and I had to manage the entire activity, starting from budget, financing until human resources issues. During my stage at JRC, I was following also a training course for project management. During 2009-2016 I was coordinating a 30 people group which are working in the Hydrogen Fuel Cell technology, a large governmental investment. Therefore, I had to tackle with practically the activity starting from the building and equipment acquisition until working group organisation. Now, I am coordinating ICSI Rm Valcea as General Director
Technical skills and competences	Expert in working and development of mass spectrometers Designing and development of vacuum equipment Good knowledge of working with laboratory equipment Good knowledge of vacuum equipment manufacturing technology Good knowledge of gas mixing and measurements systems Expert in Hydrogen energy technologies – production, storage, applications Expert in Isotope separation and isotope fractionation
Teaching activity	Professor 2009-20016– Hydrogen Energy – UPB - Energy Faculty
Computer skills and competences	Good command of Microsoft Office package Good knowledge of Microsoft Project Programming in MATLAB and MATHEMATIKA Good knowledge and basic programming in Visual Basic Good knowledge of National Instruments LabView Virtual instrumentation Good knowledge of graphic design application Photoshop
Artistic skills and competences	I graduated a music school (first and secondary level, until college) and I play piano. I like very much classical music.
Other skills and competences	Hobby – biking
Driving licence	Category B
Additional information **Publications** **Awards**	**3 books and 2 chapters in books, more than 150 articles and presentations in national/international scientific journals and proceedings, more than 30 projects as a manager, 12 Gold Medals, 5 Silver medal, 1 Bronze medal and 5 Special Awards at International Expositions**

Annexes

Annex 1: List of Published papers indexed by Thomson Reuters Master Journal List (ex-ISI Master Journal List)
Annex 2: Published papers indexed by Thomson Reuters Master Journal List (ex-ISI Master Journal List) without impact factor (IF)
Annex 3: Published papers in proceedings with ISSN or ISBN
Annex 4: List of published books/chapters
Annex 5: The experience accumulated in research projects
Annex 6: Patent applications
Annex 7: Member of national and international scientific organizations and professional societies
Annex 8: Scientific reviewer/expert
Annex 9: International recognition

Summary main achievements:

Identification data:
BrainMap ID: U-1700-028B-3719
WOS ID: EAB-9311-2022
SCOPUS author ID: 162 4285 4600
ORCID: 0000-0002-9962-6008
H-index: **20** (*Scopus*); **19** (*Web of Science*); **23** (*Google Scholar)*

Data: 16.09.2025 **Dr. Mihai Varlam**

ANNEX 1

List of Published papers indexed by Thomson Reuters Master Journal List (ex-ISI Master Journal List)

1. Sorlei, S. I., Bizon, N., **Varlam, M.,** Raceanu, M., Carcadea, E., & Raboaca, S. M. (2025, June). Performance Evaluation of a New Efficient Energy Management Strategy for Fuel Cell Hybrid Electric Vehicles. In 2025 17th International Conference on Electronics, Computers and Artificial Intelligence (ECAI) (pp. 1-14). IEEE.
2. Adriana Marinoiu, Mircea Raceanu, Elena Carcadea, **Mihai Varlam**, Nitrogen-Doped Graphene Oxide as Efficient Metal-Free Electrocatalyst in PEM Fuel Cells, Nanomaterials, 2023, 13(7), 1233; https://doi.org/10.3390/nano13071233, ISSN: 2079-4991, relative influence score/2021: 1,595, Impact factor/2022: 5,300; Q1 MPDI, Switzerland
3. Bizon, N., Takorabet, N., Thounthong, P., **Varlam, M**., Carcadea, E., & Raceanu, M. (2022, June). DC microgrid operation using an energy management strategy based on power following. In 2022 14th International Conference on Electronics, Computers and Artificial Intelligence (ECAI) (pp. 1-6). IEEE.
4. Iordache, A. M., Nechita, C., Zgavarogea, R., Voica, C., **Varlam, M.,** & Ionete, R. E. (2022). Accumulation and ecotoxicological risk assessment of heavy metals in surface sediments of the Olt River, Romania. Scientific reports, 12(1), 880.
5. Nechita, C., Iordache, A. M., Costinel, D., Botoran, O. R., Dănilă, G., Ionete, R. E., & **Varlam, M**. (2022). A tree ring Proxy evaluation of declining causes in Pinus sylvestris L. and Pinus nigra JF Arnold in Northeastern Romania. Forests, 13(2), 336.
6. Carcadea, E., Ismail, M.S., Ingham, D.B., Patularu L., Schitea D., Marinoiu A., Ion-Ebrasu D., Mocanu, D., **Varlam, M.**, Effects of geometrical dimensions of flow channels of a large-active-area PEM fuel cell: A CFD study, International Journal of Hydrogen Energy, 46(25), pp. 13572-82, 2021
7. A. Marinoiu, E. Carcadea, A. Sacca, A. Carbone, C. Sisu, A. Dogaru, M. Raceanu, **M. Varlam**, One-step synthesis of graphene supported platinum nanoparticles as electrocatalyst for PEM fuel cells, International Journal of Hydrogen Energy, 46(22), pp.12242-53, 2021
8. Carcadea, E., & **Varlam, M.** (2021). Finite Volume Method Used for Numerical Investigations of Electrochemical Devices. In Numerical Methods for Energy Applications (pp. 341-369). Cham: Springer International Publishing.
9. Sorlei, I. S., Bizon, N., Thounthong, P., **Varlam, M**., Carcadea, E., Culcer, M., ... & Raceanu, M. (2021). Fuel cell electric vehicles—A brief review of current topologies and energy management strategies. Energies, 14(1), 252.
10. A. Marinoiu, M. Andrulevicius, A. Tamuleviciene, T. Tamulevicius, M. Raceanu, **M. Varlam**, Synthesis of well dispersed gold nanoparticles on reduced graphene oxide and application in PEM fuel cells, Applied Surface Science, Volume 504, Article number 144511, 2020
11. A. Marinoiu, E. Carcadea, A. Sacca, A. Carbone, C. Sisu, A. Dogaru, M. Raceanu, **M. Varlam**, One-step synthesis of graphene supported platinum nanoparticles as electrocatalyst for PEM fuel cells, International Journal of Hydrogen Energy, 2020
12. A. Marinoiu, M. Raceanu, E. Carcadea, M. Andrulevicius, A. Tamuleviciene, T. Tamulevicius, C. Capris, **M. Varlam**, Efficient method to obtain Platinum–Cobalt supported on graphene oxide and electrocatalyst development, International Journal of Hydrogen Energy, 2020
13. A. Marinoiu, M. Raceanu, M. Andrulevicius, A. Tamuleviciene, T. Tamulevicius, S. Nica, D. Bala, **M. Varlam**, Low-cost preparation method of well dispersed gold nanoparticles on reduced graphene oxide and electrocatalytic stability in PEM fuel cell, Arabian Journal of Chemistry, Volume 13, Issue 1, Pages 3585-3600, 2020
14. D. Ion-Ebrasu, B.G. Pollet, S. Caprarescu, A. Chitu, R. Trusca, V. Niculescu, R. Gabor, E. Carcadea, **M. Varlam**, B.S. Vasile, Graphene inclusion effect on anion-exchange membranes properties for alkaline water electrolyzers, International Journal of Hydrogen Energy, 2020
15. Lazar, O. A., Marinoiu, A., Raceanu, M., Pantazi, A., Mihai, G., **Varlam, M**., & Enachescu, M. (2020). Reduced graphene oxide decorated with dispersed gold nanoparticles: Preparation, characterization and electrochemical evaluation for oxygen reduction reaction. Energies, 13(17), 4307
16. Carcadea, E., **Varlam, M**., Ismail, M., Ingham, D. B., Marinoiu, A., Raceanu, M., ... & Ion-Ebrasu, D. (2020). PEM fuel cell performance improvement through numerical optimization of the parameters of the porous layers. International Journal of Hydrogen Energy, 45(14), 7968-7980
17. Badea Gheorghe; Felseghi, Raluca-Andreea; **Varlam M.**, Filote Constantin, Culcer Mihai, Iliescu Mariana, Raboaca Maria Simona, Design and Simulation of Romanian Solar Energy Charging Station for Electric Vehicles, Energies, Volume: 12, Issue: 1, Pages: 74, 2019
18. A. Marinoiu, M. Raceanu, E. Carcadea, **M. Varlam**, I. Stefanescu, Iodinated carbon materials for oxygen reduction reaction in proton exchange membrane fuel cell. Scalable synthesis and electrochemical performances, Arabian Journal of Chemistry, Volume 12, Issue 6, Pag. 868-880, 2019

19. S. Enache, M. Dragan, **M. Varlam**, K. Petrov, Electronic percolation threshold of self-standing Ag-LaCoO3 porous electrodes for practical applications, Materials, Volume 12, Issue 15, Art. 2359, 2019
20. S.-L. Badea, S. Stanica, R. Tamaian, V.-C. Niculescu, **M. Varlam**, C.-V. Pirvu, Enhanced open-circuit voltage and power for two types of microbial fuel cells in batch experiments using Saccharomyces cerevisiae as biocatalyst, Journal of Applied Electrochemistry, Volume 49, Issue 1, Pages 17-26, 2019
21. G. Badea, R.-A. Felseghi, **M. Varlam**, C. Filote, M. Culcer, M. Iliescu, M.S. Raboaca, Design and simulation of romanian solar energy charging station for electric vehicles, Energies, Vol. 12, Issue 1, Art. 74, 2019
22. Carcadea, E., **Varlam, M**., Ismail, M., Ingham, D. B., Marinoiu, A., Raceanu, M., ... & Ion-Ebrasu, D. (2020). PEM fuel cell performance improvement through numerical optimization of the parameters of the porous layers. International Journal of Hydrogen Energy, 45(14), 7968-7980.
23. Adriana Marinoiu, Andrulevičius Mindaugas, Tamulevičienė Asta, Tamulevičius Tomas, Elena Carcadea, Mircea Raceanu**, M. Varlam**, "High performance catalytic system with enhanced durability in PEM fuel cell",accepted in Int J Hydrogen Energy, 2019
24. E. Carcadea, **M. Varlam**, A. Marinoiu, M. Raceanu, M. S. Ismail, D.B. Ingham, Influence of catalyst structure on PEM fuel cell performance - A numerical investigation, Int J Hydrogen Energy, 2019, 44(25), 12829-12849, ISSN: 0360-3199
25. D. Ion-Ebrasu, Pollet, B.G., A. Spinu-Zaulet, A. Soare, E. Carcadea, **M. Varlam**, S. Caprarescu, Graphene modified fluorinated cation-exchange membranes for proton exchange membrane water electrolysis**,** Int J Hydrogen Energy, 2019, 44(21), 10190-10196
26. A. Marinoiu**,** C. Cobzaru, Elena Carcadea, M. Raceanu, D. Schitea, **M. Varlam**, I. Stefanescu, "New catalysts used in the hydrogenolysis reaction of glycerol", Environmental Engineering and Management Journal, în curs de publicare, **2015**, http://omicron.ch.tuiasi.ro/EEMJ/, eISSN: 1843-3707, **18(1), 195-202, 2019**
27. Elena Carcadea, **Mihai Varlam**, Adriana Marinoiu, Mircea Raceanu, M. S. Ismail, D.B. Ingham, Influence of catalyst structure on PEM fuel cell performance - A numerical investigation, International Journal of Hydrogen Energy, ISSN: 0360-3199
28. Elena Carcadea, **Mihai Varlam**, Derek Ingham, Mohammed Ismail, Laurentiu Patularu, Adriana Marinoiu, Dorin Schitea, *The effects of cathode flow channel size and operating conditions on PEM fuel performance: a CFD modelling study and experimental demonstration,* International Journal Of Energy Research,vol. 42, pg 2789-2804, 2018
29. Adriana Marinoiu, Mircea Raceanu**,** Elena Carcadea, **Mihai Varlam**, *Iodine-doped graphene – Catalyst layer in PEM fuel cells*, Applied Surface Science, vol. 456, pg 238-245, 2018
30. Adriana Marinoiu, **Mihai Varlam**, Elena Carcadea, Mircea Raceanu, Amalia Soare, Ioan Stefanescu, A Class of High Performance Electrocatalysts for Oxygen Reduction Reaction of Fuel Cells, using Iodine Doped Graphene, MaterialsToday: Proceedings, vol. 5, Issue 8, Part 1, 2018, pg. 15915-15922
31. Daniela Ion-Ebrasu, Adnana Zaulet, Stanica Enache, Mirela Dragan, Dorin Schitea, Elena Carcadea, **Mihai Varlam**, Konstantin Petrov, Electrochemical Characterization of Metal Oxides as Catalysts for Oxygen Evolution in Alkaline Media, Bulgarian Chemical Communications, vol. 50 Special issue A, pp. 133-138, 2018, ISSN: 0324-1130
32. Marinoiu, A., Raceanu, M., Carcadea, E., Varlam, M., & Stefanescu, I. (2017). Low cost iodine intercalated graphene for fuel cells electrodes. Applied Surface Science, 424, 93-100
33. A. Marinoiu, Raceanu M, Carcadea E, **M. Varlam**, Balan D, Ion-Ebrasu D, Stefanescu I, Enachescu M. Iodine-Doped Graphene for Enhanced Electrocatalytic Oxygen Reduction Reaction in Proton Exchange Membrane Fuel Cell Applications. J Electrochem Energy Convers Storage 2017
34. A. Marinoiu, Gatto I, Raceanu M, **M. Varlam**, Moise C, Pantazi A, Jianu C, Stefanescu I, Enachescu M. Low cost iodine doped graphene for fuel cell electrodes. Int J Hydrogen Energy 2017
35. A. Marinoiu, Raceanu M, Carcadea E, **M. Varlam**, Soare A, Stefanescu I. Doped Graphene as Non-Metallic Catalyst for Fuel Cells. Mater Sci 2017;23 :108 -13
36. Marinoiu, A., Raceanu, M., Carcadea, E., Varlam, M., & Stefanescu, I. (2019). Iodinated carbon materials for oxygen reduction reaction in proton exchange membrane fuel cell. Scalable synthesis and electrochemical performances. Arabian Journal of Chemistry, 12(6), 868-880
37. A. Marinoiu**,** M. Raceanu, Elena Carcadea, A. Mellichio, D. Marinescu, C. Teodorescu, **M. Varlam**, I. Stefanescu Convenient graphene based materials as potential candidate for low cost fuel cell catalyst, Reaction Kinetics, Mechanisms and Catalysis, în curs de publicare, **2016**, ISSN: 1878-5204
38. A. Marinoiu, C. Cobzaru, M. Raceanu, **M. Varlam**, Elena Carcadea, C. Cernatescu, I. Stefanescu, Carbon dioxide conversion to methane over supported nickel base catalysts, Revue Roumaine de Chimie, **2015,** vol. 60, nr. 2-3, pg. 249-256**,** ISSN**:** 0035-3930
39. A. Marinoiu, C. Teodorescu, Elena Carcadea, M. Raceanu, **M. Varlam**, C. Cobzaru, I. Stefanescu, Graphene-based Materials Used as the Catalyst Support for PEMFC Applications, Materials Today: Proceedings, **2015**, vol. 2, nr. 6, pg. 3797–3805, The Selected Papers of 10th International Conference on Physics of Advanced Materials, ICPAM-10

40. Ebrasu, D., Petreanu, I., **Varlam, M**., Schitea D., I. Stefanescu, Vaseashta, A., "On the synthesis and characterization of silica-doped/sulfonated poly-(2,6-dimethyl-1,4-phenylene oxide) composite membranes for fuel cells", Journal of Fuel Cell Science and Technology, 11 (4), 041005, **2014**,
41. A. Marinoiu, C. Cobzaru, Elena Carcadea, M. Raceanu, I. Petreanu, **M. Varlam**, Study about glycerol hydrogenolysis using copper chromite catalysts mixed with bases, Revue Roumaine de Chimie, **2014**, vol. 59, nr. 8, pg. 657-662, ISSN: 0035-3930
42. A. Marinoiu, C. Cobzaru, Elena Carcadea, M. Raceanu, A. Enache, **M. Varlam**, Mathematical modeling of the glycerol hydrogenolysis using copper chromite catalyst.The effect of additional bases, Environmental engineering and management journal, 10/**2014**, eISSN: 1843-3707
43. Petreanu, I.; Ebrasu, D.; Sisu, C., **Varlam Mihai**, Thermal analysis of sulfonated polymers tested as polymer electrolyte membrane for PEM fuel cells, Journal of Thermal Analysis and Calorimetry**,** 110 (1), 335-339, 2012
44. Marinoiu, A.; Raceanu, M.; Cobzaru, C., Carcadea E, **Varlam Mihai**, Low temperature CO retention using hopcalite catalyst for fuel cell applications, Reaction Kinetics Mechanisms and Catalysis, 112 (1), 37-50, 2014
45. JV Davies, G. Tsotridis, **M. Varlam**, S. Valkiers, M. Berglund, P.Taylor, SSITKA Investigation of CO and H_2 Competitive Adsorption at PEM Fuel Cell Anode Catalysts, International Journal of Mass Spectrometry, 291 (3), 152-158, 2010
46. Anna Stolarz, **Mihai Varlam**, Roger Wellum, Gas permeability of thin polymide foils prepared by in-situ polymerization, Nuclear Instruments & Methods in Physics Research A 590 (1-3), 185-190, 2008
47. **M. Varlam**, S.Valkiers, J.Davies and G.Tsotridis, Steady State Isotopic Transinet Kinetic Analysis Study for PEM fuel cell analysis – EU Report 23229 EN (2008)
48. S. Valkiers, **M. Varlam,** M .Berglund, P. Taylor, R. Gonfiantini, P. de Bievre, Absolute measurements of isotope amount ratios on gases Part II. Application of the measurement models developed on real gases, International Journal of Mass Spectrometry, 269 (1-2), 71-77, 2008
49. **M.Varlam**, S.Valkiers, M.Berglund, P.Taylor, , R. Gonfiantini, P. de Bievre Absolute isotope amount ratio measurements on gases Part I: Measurements of isotope amount ratios-basic theory, International Journal of Mass Spectrometry, 269 (1-2), 78-84, 2008
50. S.Valkiers, **M. Varlam**, M. Berglund, P.Taylor, , R. Gonfiantini, P. de Bievre, Application of the developed models on real gases, International Journal of Mass Spectrometry 269 (1-2), 71-77, 2008
51. Varlam, Carmen; Stefanescu, Ioan; **Varlam, Mihai**; Applying the direct absorption method and LSC for C-14 concentration measurement in aqueous samples, RADIOCARBON Volume: 49 Issue: 2, 281-289, 2007
52. S.Valkiers, **M.Varlam**, M.Berglund, P.Taylor, K.Russe, J.Wang, M.Milton, P.de Bievre, Preparation of Synthetic Isotopic Mixtures for the Calibration of Carbon and Oxygen Isotope Ratio Measurements (in Carbon Dioxide) to the SI, International Journal of Mass Spectrometry 264 (1), 10-21, 2007
53. Carmen Varlam, Ioan Stefanescu**,** A. Feru, I. Popescu, A. Enache, M. Raceanu, **Mihai Varlam**, Tritium measurement using direct liquid scintillation counting in environmental aqueous samples, Journal of Environmental Protection and Ecology, vol. 8 (1), 77-84, 2007
54. Valkiers, S.; **Varlam, M**.; Berglund, M, Synthetic isotope mixtures for the calibration of ion current ratio measurements in carbon and oxygen in carbon dioxide, Geochimica et Cosmochimica Acta, 71 (15), A1050-A1050 S, 2007
55. Valkiers, S.; **Varlam, M.;** Russe, K.; et al., Quantification of the degree-of-isotopic-equilibrium of carbon and oxygen isotopes in mixtures of CO_2 gases, International Journal of Mass Spectrometry, 263 (2-3), 195-203, 2007
56. Carmen Varlam, Ioan Stefanescu**,** A. Feru, I. Popescu, A. Enache, M. Raceanu, **Mihai Varlam**, Tritium measurement using direct liquid scintillation counting in environmental aqueous samples, Journal of Environmental Protection and Ecology, vol. 7 (1), 162-169, 2006
57. Carmen Varlam, Ioan Stefanescu, **Mihai Varlam**, V. P atrascu, M. Raceanu, A. Enache, C. Bucur, The use of tritiated wastewater from NPP Cernavoda to estimatr maximum soluble pollutants on Danube-Black Sea Channel, Fusion Science and Technology, 48 (1), 716-719, 2005
58. **Mihai Varlam**, Nicusor Chiriloaie, Dumitru Steflea, The surface dynamics investigation at low temperature by molecular beam technique, 1005-1110 in "Application of Surface and Interface Analysis" , J.Wiley&Sons, 2001
59. Mihai Varlam, Study of isotopic defined Hydrogen beams scattering from Palladium single-crystal surface, 128-129, Atomic Collision in Solids, Paris, 2001
60. **Mihai Varlam**, Ioan Stefanescu, Hydrologic studies based on Deuterium and Oxygen-18 isotopic measurements – Materials and Geo-environment Vol.45, No.1-2, 1999
61. Carmen Varlam, **Mihai Varlam**, Ioan Stefanescu, Determination of Low Level Tritium activity concentration in natural water samples by liquid scintillation spectrometry – Materials and Geo-environment Vol.45, No.1-2, 1999
62. **Mihai Varlam**, Dumitru Steflea, An experimental investigation of Debye-Waller factor in Hydrogen and Deuterium scattering from Cu[111] surface – Rarefied Gas Dynamics, Ed. R.Brun, R.Campargue, Vol.I, 1999

ANNEX 2

Published papers indexed by Thomson Reuters Master Journal List (ex-ISI Master Journal List) without impact factor (IF)

1. Raceanu Mircea, Marinoiu Teodora Adriana, Carcadea Elena, **Varlam Mihai**, Control Method and Start-up Sequence of a Two-Fuel Cell Hybrid Electric Vehicle to Increase Energy Efficiency, European Exhibition of Creativity and Innovation - Euroinvent 2023, 13.05.2022 Iaşi, Romania
2. Marinoiu Adriana, Raceanu Mircea, Borta Simona, Schitea Dorin, Carcadea Elena, **Varlam Mihai**, Process for obtaining the gas diffusion layer, based on carbon fibers, for fuel cells, European Exhibition of Creativity and Innovation - Euroinvent 2023, 13.05.2022 Iaşi, Romania
3. Marinoiu Teodora Adriana, Carcadea Elena, Raceanu Mircea, Capris Ioan Catalin, **Varlam Mihai**, Graphene materials doped with cerium oxide and their production process, (CBI no. A/00763/09.12.2021), the 27th International Exhibition of Inventions "INVENTICA 2023", 21-23.06.2023, Iasi, Romania
4. Raceanu Mircea, Marinoiu Teodora Adriana, Carcadea Elena, **Varlam Mihai,** Control method and starting sequence of a hybrid electric vehicle with two fuel cells to increase energy efficiency (CBI no. A/00762/09.12.2021), the 27th International Exhibition of Inventions "INVENTICA 2023", 21-23.06.2023, Iasi Romania
5. Daniela Ion-Ebrasu, Radu Dorin Andrei, Adriana Marinoiu, Elena Carcadea, **Mihai Varlam,** Platinum-functionalized CVD Growth Graphene Foam for Fuel Cells Applications, Graphene 2023, 26.06 – 02.07.2023, Manchester, Marea Britanie
6. Marinoiu Teodora Adriana, Simona Nica, Carcadea Elena, Capris Catalin, **Varlam Mihai**, participation in PROINVENT 2022, October 26 – 28, 2022, Cluj Napoca, with the work "Graphene covalently functionalized with azulenes and their preparation process", Patented work (application no.: A/00804/2020; BOPI no. 5/2021)
7. Mircea Răceanu, Adriana Marinoiu, Elena Carcadea, **Mihai Varlam**, PROINVENT 2022, 26 – 28 Octombrie 2022, Cluj Napoca, with the work "Control method and starting sequence of a hybrid electric vehicle with two fuel cells for increasing energy efficiency", Patented work (nr.: A/00762/09.12.2021)
1. Anisoara Oubraham, Simona Borta, Adriana Marinoiu, Simona Nica, **Mihai Varlam** - Hydrogen separation using metal organic frameworks, presentation at the National Chemistry Conference 2022 – edition XXXVI, 04 – 07.10.2022, Calimanesti-Caciulata, Romania
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ANNEX 4

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ANNEX 5

The experience accumulated in research projects

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4. CRYO-HY – Improvement of research capability of NRDIICT by creating a new Low Temperature Laboratory infrastructure, about €12.4 million-– *project coordinator*
5. ROM-EST – Research laboratories for energy storage – Lithium-Ion Battery Laboratory, about €7 million-– *project coordinator.*
6.ROMHY-ISO – Hydrogen Isotopes for Energy Applications, *project coordinator*
7. Hy-Ro -2.0 – Extension of National Center for Hydrogen - new Research Laboratories to complete the existing capabilities of the existing NCHFC, about €5.7 million - *project coordinator*
8**.** Ro-HydroHub-Romanian Hydrogen and New Energy Technologies Hub, about €28 million - *project coordinator.*

b. National Projects

1. "Research regarding the design and experimental characterization of membrane-electrode assembly for fuel cells with proton exchange membrane", Project CEEX-RELANSIN, *project manager*
2. "Integrated electricity production system based on hydrogen fuel cells", Project MENER, *project manager*
3. "Conversion and energy storage technology using hydrogen fuel cells for telecommunication", Proiect MENER, *project participation*
4. "Regenerative energy converter based on electrolyser - fuel cell system; Architectural design and realization", PNCDI-II – *project participation*
5. "Innovative system for electricity generation using high temperature PEM fuel cells powered by hydrogen produced by acetic acid reforming" PNCDI-II 2008-2011– *project participation*
6. "Research and development of a membrane reactor for producing ultrapure hydrogen for fuel cells", Project PNCDI – II, *project participation*
7. "Super-conducting system for storing electricity under magnetic form", Project PNCDI – II, 2008-2011, project participation
8. "Mini plant for producing energy from renewable sources - applications for residential microunits and assemblies", Project PNCDI – II, *project participation*
9. "Optimized system for producing thermal energy from renewable sources using the heat pump", 2008-2011, Project PNCDI – II, *project participation*
10. "Online measurement system for the tritium concentration in water by BIXS method", 2008-2011, Project PNCDI – II, *project participation*
11. "Developing a system for processing and extraction of hydrogen. Analysis of physical and chemical processes involved in order to optimize a small-scale compact system" Program Nucleu PN 03-10 04 02 - project manager
12. "Analysis of contamination hydrogen fuel cells with polymeric membrane: impact, and mitigation mechanisms", Program Nucleu PN 09-19 01 04 project manager
13. "ISOTOPES FOR HYDROGEN ENERGY - Towards the understanding of the specifics of reactions involved in the Hydrogen Fuel Cell integrated system using Steady-State Isotope Transient Kinetic Analysis – "Proof-of-concept" for a hydrogen fuel cell power station", POS CCE PROJECT, 2.1.2, SMIS 12013, 2010-2012, *project manager*
14. "CRYO-HY: Developing the R&D Infrastructure of ICSI by creating a low temperature laboratory for energetic applications of cryogenic fluids", POS CCE projects, 2.2.1, SMIS 13844, 2010-2013, *project manager*
15. "Integrating renewable energy using hydrogen-based technologies", Program Nucleu PN 09-19 01 04, 2013-2014 - *project manager*
16. Theoretical and experimental investigations on CO retention systems at low temperatures, for PEM fuel cells and their applications/ PN 09 19 01 09, Ctr. 19N/2009
17. Technical and economic prospects and opportunities for recycling CO_2 to methane using renewable hydrogen, PN 09 19 01 11, Ctr. 19N/2009

18. "Advanced strategic planning on developing a turbopump for a rocket engine powered by liquid fuel", STAR ROSA Project, 2012-2014, *project manager*
19. "Developing a concept and a technological assessment auxiliary power source with PEM fuel cells, used in space applications, *PEM SAPU*", STAR ROSA Project, 2013-2015, *project manager*
20. ROMEST, "Research Laboratory for energy storage ", POS CCE project, contract no. 660/2014, 2014-2015 - *project manager*
21. "Establishing the strategic directions and priority objectives of research- development and innovation in the energy sector during 2016-2020 in relation to the requirements of energy efficiency and sustainable and clean energy promoted by national and European energy policy", Sectorial Plan, 2014-2015, *project manager/coordinator*
22. "Development of a portable power generator – charger type, based on hydrogen electrochemistry, designed for maintaining energy support of the combatant's equipment in the tactical field" (OutHyPower), contract 284/2014, 2014-2017 - *project participation*
23. Project PN III 85PED "Backup Emergency Hydrogen-Based Power Source", 2017-2018, *project key member*
24. Project PN III 53PED Experimental validation of a hydrogen fuel cell automotive propulsion system on a Lightweight Vehicle - Hydrogen Mobility Demonstrator
25. Project 25PCCDI "Hydrogen energy revolution driver – fuel cells, on the way from research towards production by mitigation of main technological barriers", 2018-2020, *project manager*
26. Extension of National Center for Hydrogen – POC – 2002-2004- *project manager*
27. Romanian Hub for Hydrogen and New Energy Technologies – POCIDIF – *project manager*

ANNEX 6

Patent and patent applications. Innovations:

Patent applications

- CBI nr. A/00845/26.08.2011; publicata in BOPI 4/201, Procesor de hidrogen pentru alimentarea pilelor de combustibil, autori: Anghel Vasile, Stefanescu Ioan, **Varlam Mihai**, Culcer Mihail;
- Brevet de inventie nr. 129408/30.03.2018, Procedeu de realizare a placilor bipolare cu sistem de racire de tip lichid inclus pentru ansamblurile de pile de combustibil PEM, autori: Patularu Laurentiu, Schitea Dorin, **Varlam Mihai**, Stefanescu Ioan, Marinoiu Teodora;
- Brevet de inventie nr. 129407/30.12.2019, Statie energetica de mica putere si procedeu de optimizare si alimentare a consumului de hidrogen si aer, autori: **Varlam Mihai**, Culcer Mihail, Raceanu Mircea, Iliescu Mariana, Enache Adrian, Stefanescu Ioan, Stanciu Vasile;
- Brevet de inventie nr. 131246/28.01.2022, Procedeu de ranforsare mecanica a membranelor polimere de tip PEM, utilizate in generatoare electrochimice, autori: Patularu Laurentiu Gabriel, Stanica Enache, Schitea Dorin, Ion-Ebrasu Daniela, **Varlam Mihai**, Stefanescu Ioan;
- CBI nr. A/00813/11.11.2015, Senzor de umiditate ultrasubtire de Nb-NbO cu caracteristica de detectie regenerativa, autori: Enache Stanica, Ion-Ebrasu Daniela, Rizoiu Alexandru, **Varlam Mihai**, Stanciu Vasile, Stefanescu Ioan;
- Brevet de Inventie nr.131917/29.11.2018, Procedeu de sinteza a unor electrozi nanostructurati pe baza de oxid de niobiu pentru sisteme electrochimice de producere a energiei electrice, autori: Ion-Ebrasu Daniela, Enache Stanica, **Varlam Mihai**, Stanciu Vasile, Stefanescu Ioan;
- Brevet de inventie nr.131664/30.10.2020, Tehnologie de realizare a catozilor bateriilor de tip Li-Ion cu densitate energetica ridicata, autori: Buga Mihaela-Ramona, Balan Ovidiu Mihai, Enache Stanica, Bubulinca Constantin, Badea Silviu, Chitu Alin, **Varlam Mihai**, Stanciu Vasile, Stefanescu Ioan;
- Brevet de inventie nr. 132433/30.04.2020, Metoda termica directa si eficienta de sinteza a materialelor perovskite de tip LaCoO3, in aer, din precursori oxidici ai lantanului si cobaltului, autori: Enache Stanica, Dragan Mirela-Anca, **Varlam Mihai**;
- Brevet de inventie nr. 133589/30.05.2025, Procedeu de realizare a unui sistem de etanșare a fluidelor în pile de combustibil de tip PEM, autori: Patularu Laurentiu Gabriel, Schitea Dorin Marius, Chitu Alin Mugurel, **Varlam Mihai**, Carcadea Elena;
- Brevet de inventie nr. 133529/28.01.2022, Procedeu de obtinere a unui nanocompozit pe baza de grafene dopate cu aur, autori: Marinoiu Adriana, Raceanu Mircea, Capris Catalin, Carcadea Elena, Ion Simona Filofteia, **Varlam Mihai**;
- Brevet de inventie nr. 132950/28.06.2019, Grafene dopate cu iod si procedeu de obtinere a acestora, autori: Marinoiu Adriana, Carcadea Elena, Raceanu Mircea, Patularu Laurenti, **Varlam Mihai**;
- Brevet de inventie nr. 133322/30.04.2020, Procedeu de sinteza de membrane perfluorosulfonice cu depuneri de oxid de grafena, autori: Ebrasu Daniela, Adnana-Spinu Zaulet, Elena Carcadea, **Varlam Mihai**;

- Brevet de inventie nr. 134113/29.10.2021, Procedeu de preparare materiale grafenice dopate cu azot in camp de microunde., autori: Marinoiu Teodora Adriana, Carcadea Elena, Raceanu Mircea, Capris Ioan Catalin, **Varlam Mihai**;
- Brevet de inventie nr. 134488/29.10.2021, Materiale carbonice cu depuneri de nanoparticule de platina si procedeu de obtinere a acestora, autori: Marinoiou Teodora Adriana, Carcadea Elena, Sisu Elena Claudia, Andrei Radu Dorin, Raceanu Mircea, Capris Ioan Catalin, **Varlam Mihai**;
- Brevet nr. 134638/30.04.2025, Procedeu de obtinere materiale grafenice dopate cu nanoparticule de aur, autori: Marinoiu Teodora Adriana, Carcadea Elena, Raceanu Mircea, Capris Ioan Catalin, **Varlam Mihai**;
- CBI nr. A/ 00569/11.09.2020, BOPI nr. 2/2021 pag 20, Procedeu de obtinere a stratului de difuzie a gazelor, pe baza de fibre de carbon, pentru pile de combustibil, autori: Marinoiu Teodora Adriana, Raceanu Mircea, Borta Simona, Schitea Dorin, Carcadea Elena, **Varlam Mihai**;
- CBI nr. A/00683/30.10.2020. BOPI nr. 1/2023, pag. 27, Sistem telescopic de pozitionare in vid de mare precizie cu pasaj de rotatie cu fluid magnetic, autori: Curuia Marian, Soare Sorin, Jianu Catalin, Brill Catalin, **Varlam Mihai**;
- Brevet de inventie nr. 134964/28.02.2023, Procedeu de preparare materiale grafenice functionalizate cu iod in camp de microunde, autori: Marinoiu Teodora Adriana, Carcadea Elena, Capris Ioan - Catalin, Raceanu Mircea, **Varlam Mihai**;
- Brevet de inventie nr 134946/28.02.2023, Procedeu de sinteza de grafene poroase functionalizate cu azot pentru dispozitive electrochimice de producere a energiei electrice, autori: Ion-Ebrasu Daniela, Andrei Radu Dorin, Jianu Catalin Constantin, Enache Stanica, Enache Adrian, Carcadea Elena, **Varlam Mihai**;
- Brevet de inventie nr. 135059/30.01.2024, Procedeu de obtinere a unui material nanohibrid pe baza de grafene functionalizate covalent cu azulene, autori; Marinoiu Teodora Adriana, Ion Simona-Filofteia, Carcadea Elena, Capris Ioan-Catalin, Varlam Mihai;
- CBI nr. A/00508/26.08.2021, BOPI 3/2022, PAG.32, Materiale grafenice functionalizate cu azulene obtinute in camp de microunde, autori: Marinoiu Teodora Adriana, Ion Simona-Filofteia, Carcadea Elena, Raceanu Mircea, Capris Ioan-Catalin, **Varlam Mihai**;
- CBI nr. A/00509/26.08.2021, BOPI 4/2022, pag.45, Covoare supercapacitor de umplere a spatiului: arhitectura fractala pentru aplicatii in dispozitive extensibile de stocare a energiei; metode de fabricatie bazate pe imprimare laser 2D, autori: Tiliakos Athanasios, **Varlam Mihai**;
- Brevet nr. 135821/29.11.2023, Metoda de control a puterii unui sistem de pile de combustibil din componenta unui vehicul electric hibrid, autori: Raceanu Mircea, Marinoiu Teodora Adriana, Carcadea Elena, **Varlam Mihai**;
- Brevet de inventie nr. 135737/29.03.2024, Materiale grafenice dopate cu oxid de ceriu si procedeu de obtinere a acestora, autori: Marinoiu Teodora Adriana, Carcadea Elena, Raceanu Mirce, Capris Ioan Catalin, **Varlam Mihai**;
- Cerere brevet nr. A/00176/11.04.2023. BOPI 8/2023, pag.27, Materiale grafenice functionalizate cu platina-azot si procedeu de obtinere a acestora, autori: Marinoiu Teodora Adriana, Carcadea Elena, Marin Elena, **Varlam Mihai**;
- Cerere brevet nr.A/00503/14.09.2023. bopi 6/2024, pag.41, Celule electrochimice Li-ion de tip punguta cu catod pe baza de oxizi stratificati bogati in nichel folositi in conjunctie cu sisteme de electroliti cu grad ridicat de siguranta termica, autori: Spinu Zaulet Adnana, Buga Mihaela-Ramona, Ungureanu Giorgian Cosmin, Chitu Alin Mugurel, Vaireanu Danut-Ionel, **Varlam Mihai**;
- Cerere brevet nr. A/00805/06.12.2023.BOPI 5/2024, pag 33, Procedeu de obtinere materiale grafenice functionalizate cu fier, autori: Marinoiu Adriana, Carcaea Elena, Marin Elena, Capris Ioan Catalin, **Varlam Mihai**;
- CBI A/00711/18.11.2024, BOPI nr. 4/20205, pag. 36, Motopropulsor hibrid cu pile de combustibl, metoda de control al puterii a acestuia si un vehicul, autori: Raceanu Mircea, Bizon Nicu, Corbu Alin, Enache Adrian, Iliescu Mariana, Culcer Mihail, **Varlam Mihai**.

ANNEX 7

Member of national/international scientific organizations and professional societies:

- Member of Presidential Committee for Climate Change
- Society of Physics from Romania;
- Romanian Nuclear Energy Association;
- European Society of Physics

ANNEX 8

Scientific reviewer/expert

- Scientific evaluator in the national research programs
- Member in evaluation commissions for Applied Physics Programs

ANNEX 9

International Recognition

- Diploma obtinuta cu ocazia celei de-a 15-a Expozitie Internationala de Inventii, cercetare stiintifica si tehnologii noi INVENTIKA 2011 Bucuresti pentru "Procesor de hydrogen pentru alimentarea pilelor de combustibil", autori: Anghel Vasile, Stefanescu Ioan, **Varlam Mihai**, Culcer Mihai;
- Diplomă de Excelenţă şi Medalia de aur la Salonul Internaţional de Inventică PRO INVENT 2015, 25-27.03.2015, Cluj-Napoca, România pentru invenţia "Procedeu de ranforsare mecanică a membranelor polimere de tip PEM utilizate în generatoare electrochimice", autori: L. Patularu, S. Enache, D. Schitea, D. Ion Ebrasu, **M. Varlam**, I. Stefanescu;
- Diplomă de Excelenţă şi Medalia de Aur cu menţiune specială la cea de-a XIV-a ediţie a Salonului Internaţional al Cercetării, Inovarii şi Inventicii – PRO INVENT 2016, 23-25.03.2016, Cluj Napoca, România pentru invenţia cu titlul: "Procedură de realizare de electrozi nanostructuraţi pe bază de oxizi metalici pentru sisteme electrochimice de producere a energiei electrice", autori: D. Ion-Ebrasu, S. Enache, **M. Varlam**, V. Stanciu, I. Stefanesc;
- Diplomă şi Medalia de Aur la cea de-a VIII-a ediţie EUROINVENT – European Exhibition of Creativity and Innovation, 20-21.05.2016, Iasi, România pentru invenţia: "Procedeu de realizare a plăcilor bipolare cu sistem de răcire de tip lichid inclus pentru ansamblurile de pile de combustibil PEM";
- Diplomă şi Medalia de Aur pentru la cea de-a VIII-a ediţie EUROINVENT – European Exhibition of Creativity and Innovation, 20-21.05.2016, Iasi, România pentru invenţia: "Procedeu de ranforsare mecanică a membranelor polimere de tip PEM, utilizate în generatoare electrochimice", autori: L.G. Patularu, S. Enache, D. Schitea, D. Ion-Ebrasu, **M. Varlam**, I. Stefanescu;
- Diplomă de Excelenţă şi Medalia de Argint la Salonul Internaţional al Cercetării, Inovării şi Inventicii PRO INVENT 2017, Martie 2017, Cluj Napoca, România pentru invenţia: "Tehnologie de realizare a catozilor bateriilor de tip Li-Ion cu densitate energetică ridicată", autori: R.M. Buga, O.M. Balan, S. Enache, C. Bubulinca, S.L. Badea, A.M. Chitu, **M. Varlam**, V. Stanciu, I. Stefanescu;
- Diplomă de participare, Medalia de Aur şi Diplomă de Excelenţă la European Exhibition of Creativity and Innovation – Euroinvent 2017, 25-27.05.2017, Iaşi, România pentru invenţia: "Tehnologie de realizare a catozilor bateriilor de tip Li-Ion cu densitate energetică ridicată", autori: R.M. Buga, O.M. Balan, S. Enache, C. Bubulinca, S.L. Badea, A.M. Chitu, **M. Varlam**, V. Stanciu, I. Stefanescu;
- Diplomă de participare, Medalia de Aur şi Diplomă de Excelenţă la Salonul Internaţional al Cercetării, Inovării şi Inventicii PRO INVENT 2017, Martie 2017, Cluj Napoca, România pentru invenţia: "Tehnologie de realizare a catozilor bateriilor de tip Li-Ion cu densitate energetică ridicată", autori: R.M. Buga, O.M. Balan, S. Enache, C. Bubulinca, S.L. Badea, A.M. Chitu, **M. Varlam**, V. Stanciu, I. Stefanescu;
- Diploma de Excelenta si Medalia de Aur la Salonul International al Cercetarii Stiintifice, Inovarii si Inventicii PRO INVENT 2018, 21-23 Martie 2018, Cluj Napoca, Romania si Diploma de Excelenta din partea Asociatiei "Justin Capra pentru inventia "Metoda si sistem de generare a hidrogenului prin hidroliza catalitica a borohidrurii de sodiu", autori: Elena Carcadea, Adriana Marinoiu, Alin Chitu, Jenel Arhip, **Mihai Varlam**;
- Diploma de Excelenta si Diploma de Excelenta din partea Asociatiei "Justin Capra pentru inventia "Tehnologie de realizare a catozilor bateriilor de tip Li-Ion cu densitate energetica ridicata", autori: Mihaela Buga, Mihai Balan, Stanica Enache, Constantin Bubulinca, Silviu Badea, Alin Chitu, **Mihai Varlam**, Vasile Stanciu, Ioan Stefanescu;
- Diploma de Excelenta si Medalia PRO INVENT la Salonul International al Cercetarii Stiintifice, Inovarii si Inventicii PRO INVENT 2019, pentru inventia: "Metoda si algoritm de management energetic pentru o sursa auxiliara de putere cu topologie hibrida, alimentata cu hidrogen", autori: Raceanu Mircea, Iliescu Mariana, Culcer Mihail, Enache Adrian, **Varlam Mihai**, Stefanescu Ioan, Stanciu Vasile
- Diploma de Excelenta si Medalia INVENTICA 2019 Iasi pentru inventia "Procedeu de sinteza de membrane perfluorosulfonice cu depuneri de oxid de grafena", autori: Daniela Ion Ebrasu, Adnana Spinu Zaulet, Elena Carcadea, **Mihai Varlam**
- Diploma de Excelenta si Medalia INVENTICA 2019 Iasi pentru inventia "Metoda si algoritm de management energetic pentru o sursa auxiliara de putere cu topologie hibrida, alimentata cu hidrogen", autori: Raceanu Mircea, Iliescu Mariana, Culcer Mihail, Enache Adrian, **Varlam Mihai**, Stefanescu Ioan, Stanciu Vasile
- Certificat de Excelenta INVENTICA 2019 Iasi pentru "Metoda si algoritm de management energetic pentru o sursa auxiliara de putere cu topologie hibrida, alimentata cu hidrogen", autori: Raceanu Mircea, Iliescu Mariana, Culcer Mihail, Enache Adrian, **Varlam Mihai**, Stefanescu Ioan, Stanciu Vasile – premiu oferit de catre domnul Presedinte Marian Velcea – Asociatia inventatorilor Justin Capra

- Medalia de Aur la Salonul International al Cercetarii Stiintifice, Inovarii si Inventicii PRO INVENT 2020, 18-20-11.2020, Cluj Napoca, Romania pentru: "Metoda eficienta si curata de sinteza a pulberilor perovskite cristaline de tip LaCoO3 in aer din precursori oxidici", autori: Anca Dragan, Stanica Enache, **Mihai Varlam**;
- Diplomă şi Medalie de argint la Salonul International al Cercetarii Stiintifice, Inovarii si Inventicii PROINVENT 2021, 20-22.10.2021, Cluj Napoca, Romania pentru: "Procedeu de sinteza de grafene poroase functionalizate cu azot pentru dispozitive electrochimice de producere a energiei electrice"/A/00803/03.12.2020, autori: Ion-Ebraşu Daniela, Andrei Radu Dorin, Jianu Cătălin Constantin, Enache Stănica, Enache Adrian, Carcadea Elena, **Varlam Mihai**;
- Diplomă de Excelenţă şi Medalia de Argint la Expozitia Internationala de Inventica "INVENTICA 2021", Editia a XXV-a, 23-25.06.2021, Iasi, Romania pentru invenţia: "Procedeu de obţinere materiale grafenice dopate cu nanoparticule de aur", autori: Marinoiu Teodora Adriana, Carcadea Elena, Răceanu Mircea, Capriş Ioan Cătălin, **Varlam Mihai**;
- Medalie de argint, la Salonul International de Inventica "EUROINVENT – 2022", organizat de Univeristatea Tehnica "Gheorghe Asachi", Iasi, 26-28 mai 2022 pentru brevetul Grafene covalent functionalizate cu azulene si procedeu de obtinere a acestora – autori: Adriana Marinoiu, Simona Nica, Elena Carcadea, Catalin Capris, **Mihai Varlam**;
- Diplomă de Excelenţă şi Medalia de Aur la Salonul Internaţional al Cercetării Ştiinţifice, Inovării şi Inventicii PRO INVENT – Cluj Napoca, 26-28 octombrie 2022 pentru invenţia cu titlu "Grafene covalent funcţionalizate cu azulene şi procedeu de obţinere a acestora" (CBI nr. A/00804/03.12.2020; BOPI nr. 5/2021), autori A.T. Marinoiu, S. Nica, E. Carcadea, C.Capris**, M. Varlam**;
- Diplomă de Excelenţă şi Medalia de Aur la Salonul Internaţional al Cercetării Ştiinţifice, Inovării şi Inventicii PRO INVENT – Cluj Napoca, 26-28 octombrie 2022 pentru invenţia cu titlu "Metodă de control şi secvenţă de pornire a unui vehicul electric hibrid cu două pile de combustibil pentru creşterea eficienţei energetice" (CBI nr. A/00762/09.12.2021; BOPI nr. 5/2022), autori M. Raceanu, A.T. Marinoiu, E. Carcadea, **M.Varlam**;
- Diploma de Excelenta si Medalia de Aur Salonul Internaţional al Cercetării Ştiinţifice, Inovării şi Inventicii PRO INVENT – Cluj Napoca, 25-27 octombrie 2023 pentru inventia cu titlul: "Procedeu de obtinere a stratului de difuzie a gazelor, pe baza de fibre de carbon, pentru pile de combustibil", autori: Marinoiu Teodora Adriana, Raceanu Mircea, Borta Simona, Schitea Dorin, Carcadea Elena, **Varlam Mihai**;
- Premiul special oferit de ICECHIM la cea de-a 27-a ediție a Salonului Internațional de Invenții, INVENTICA 2023, 21-23.06.2023, Iasi, Romania pentru: „Graphene Materials doped with Cerium Oxide their Production Process", autori: Marinoiu Teodora Adriana, Carcadea Elena, Răceanu Mircea, Capriş Ioan Cătălin, **Varlam Mihai**;
- Medalie de aur şi Diplomă de onoare la cea de-a 27-a ediție a Salonului Internațional de Invenții, INVENTICA 2023, 21-23.06.2023, Iasi, Romania pentru: „Graphene Materials doped with Cerium Oxide their Production Process", autori: Marinoiu Teodora Adriana, Carcadea Elena, Răceanu Mircea, Capriş Ioan Cătălin, **Varlam Mihai**;
- Medalie de argint şi Diplomă de Excelenţă la cea de-a 27-a ediție a Salonului Internațional de Invenții, INVENTICA 2023, 21-23.06.2023, Iasi, Romania pentru: Control Method and Start-up Seqwuence of a Two-Fue Cell Htbrid Electric Vehicle to Increase Eneregy Efficiency, autori: Răceanu Mircea, Marinoiu Teodora Adriana, Carcadea Elena, **Varlam Mihai**;
- Diploma de Onoare si Medalia de Aur la Salonul International de inventica INVENTICA 2024 pentru "Process for preparing graphene materials functionalized with iodine in the microwave field", autori: Marinoiu Teodora Adriana, Caraea Elena, Capirs Ioan-Catalin, Raceanu Mirce, **Varlam Mihai**;
- Premiul de Excelenta si Medalia de Aur, acordat de catre ICECHIM Bucuresti, la Salonul International de inventica INVENTICA 2024 pentru "Process for preparing graphene materials functionalized with iodine in the microwave field", autori: Marinoiu Teodora Adriana, Caraea Elena, Capirs Ioan-Catalin, Raceanu Mirce, **Varlam Mihai**;
- Certificat de Excelenta acordat de catre Corneliu Group Association la Salonul International de inventica INVENTICA 2024 urmatoarelor persoane: Marinoiu Teodora Adriana, Caraea Elena, Capirs Ioan-Catalin, Raceanu Mirce, **Varlam Mihai**, cu recunostinta si consideratie pentru contributia in lumea inovatiei;
- Certificat de Excelenta la Salonul International de inventica INVENTICA 2024 acordat de catre Healthy Vibe Holistic Treatment pentru : Marinoiu Teodora Adriana, Caraea Elena, Capris Ioan-Catalin, Raceanu Mirce, **Varlam Mihai**, cu inventia "Process for preparing graphene materials functionalized with iodine in the microwave field";
- Certificat de Excelenta si Premiul Special acordat de catre Universitatea Politehnica din Timisoara pentru inventia: "Process for preparing graphene materials functionalized with iodine in the microwave field", in cadrul Salonului International de inventica INVENTICA 2024 Iasi;

- Certificat de Participare, Diploma si Medalia de Bronz la The 17'th Edition of EUROINVENT – European Exhibition of Creativity and Innovation Iasi 2025 pentru inventia: "Process of obtaining functionalized iron graphene materials", autori: Marinoiu Adriana, Carcadea Elena, Marin Elena, Capris Ioan-Catalin, **Varlam Mihai**;
- Diploma de Excelenta si Medalia de Argint la Salonul International de inventica INVENTICA 2025 Iasi pentru: "Process for obtaining graphene functionalized with platinum and iron", autori: Adriana Marinoiu, Elena Marin, Mircea Racenu, Sebastian Baltoiu, **Mihai Varlam**;
- Certificat de Excelenta acordat de catre Universitatea Politehnica din Timisoara la Salonul International de inventica INVENTICA 2025 Iasi pentru "Process for obtaining graphene functionalized with platinum and iron", autori: Adriana Marinoiu, Elena Marin, Mircea Racenu, Sebastian Baltoiu, **Mihai Varlam**.