



Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)

Address(es)

Telephone(s)

Fax(es)

E-mail

Nationality

Date of birth

Gender

CARCADEA Elena

60 Calea lui Traian Street, 240107 – Ramnicu Valcea, VL, ROMANIA

+4-0350-414095; +4-0250-732744

+4-0250-732746

elena.carcadea@icsi.ro

Romanian

29.11.1973

Female

Occupational field

Academic (research)

Work experience

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

march 2017-present

Coordinator of National Center for Hydrogen and Fuel Cells

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

National Research & Development Institute for Cryogenics & Isotopic Technologies, National Centre for Hydrogen and Fuel Cell, Uzinei street, no.4, Ramnicu Valcea, Romania

Academic research and development

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

september 2016-march 2017

Scientific Researcher 1st degree

- Coordinator of Mathematical Modeling Group in the National Center for Hydrogen and Fuel Cells
- Manager and scientific responsible of national projects

National Research & Development Institute for Cryogenics & Isotopic Technologies, National Centre for Hydrogen and Fuel Cell, Uzinei street, no.4, Ramnicu Valcea, Romania

Academic research and development

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

2009 – august 2016

Scientific Researcher 2nd degree

- Coordinator of Mathematical Modeling Group in the National Center for Hydrogen and Fuel Cells
- Manager and scientific responsible of national projects
- Mathematical modeling of fluid dynamics in porous media for membrane reactors and fuel cells
- CFD analyses with Fluent (6.2.16, 6.3), PEM Fuel Cell Module and COMSOL Multiphysics 4.2
- Research regarding the fuel cell development: fluid flow analysis and mathematical modeling of PEM fuel cells

National Research & Development Institute for Cryogenics & Isotopic Technologies, National Centre for Hydrogen and Fuel Cell, Uzinei street, no.4, Ramnicu Valcea, Romania

Academic research and development

Dates

Occupation or position held

2006 - 2009

Scientific Researcher 3rd degree

Main activities and responsibilities	<ul style="list-style-type: none"> ▪ Mathematical modelling of fluid dynamics in a porous medium; ▪ Applied research in the field of proton exchange membrane fuel cells ▪ Fluid dynamics and mathematical modelling studies for fuel cell systems for increasing the performance based on geometry and parameters optimization
Name and address of employer	National Research & Development Institute for Cryogenics & Isotopic Technologies, Uzinei street, no.4, Ramnicu Valcea, Romania
Type of business or sector	Research & Development

Dates	2004 - 2006
Occupation or position held	Scientific Researcher
Main activities and responsibilities	<ul style="list-style-type: none"> ▪ Software programming in Visual Basic, Arc GIS 8.1.2, Borland C++, Turbo Pascal ▪ Fellowship to Leeds University, UK, for improving the skills in fluid dynamics modelling for fuel cells. Training for using Fluent software and the pre-processor Gambit for fluid flow modelling in a fuel cell assembly.
Name and address of employer	National Research & Development Institute for Cryogenics & Isotopic Technologies , Uzinei street, no.4, Ramnicu Valcea, Romania
Type of business or sector	Research & Development

Dates	1997-2004
Occupation or position held	Matematician
Main activities and responsibilities	<ul style="list-style-type: none"> ▪ Research activities in the field of reliability and risk assessment for industrial plants (e.g. heavy water plants, cryogenics installations); ▪ Studies regarding the impact of industrial activities on the environment; ▪ Drawing digital maps; GIS analyses; ▪ Participation to writing and implementing quality assurance system in ICIT Rm. Valcea
Name and address of employer	National Research & Development Institute for Cryogenics & Isotopic Technologies, Uzinei street, no.4, Ramnicu Valcea, Romania
Type of business or sector	Research & Development

Education and training	
Dates	2002 - 2008
Title of qualification awarded	PhD in Mathematics, Title of doctoral thesis Fluid dynamics modeling in porous media. Mathematical Application to fuel cell
Principal subjects/occupational skills covered	Fuel cell development, fluid flow analysis for a single fuel cell and for stacks, mathematical modeling of fluid dynamics in porous media, mathematical modeling of PEM fuel cells
Name and type of organisation providing education and training	Pitesti University, Faculty of Mathematics and Computer science
Level in national or international classification	Level 6 - Second stage of tertiary education

Dates	January - October 2004
Title of qualification awarded	Training in CFD modeling
Main activities and responsibilities	Modeling of fluid dynamics through porous media Learning the commercial CFD software, Fluent.
Name and address of employer	Leeds University, Leeds LS2 9JT, UK
Type of business or sector	Computational Fluid Dynamics Center

Dates	1998 – 1999
Title of qualification awarded	Eco-Management Post-universitary degree

Principal subjects/occupational skills covered

Eco-Management Sciences

Name and type of organisation providing education and training

Technical University from Cluj Napoca, Romania in consortium with Minnesota University, SUA

Level in national or international classification

Level 5 - First stage of tertiary education: ISCED 5A

Dates

october 1992- june 1997

Title of qualification awarded

Bachelor degree

Principal subjects/occupational skills covered

Mathematics and Computer Science

Name and type of organisation providing education and training

Pitesti University, Computer science and Mathematics Faculty

Level in national or international classification

Level 5 - First stage of tertiary education: ISCED 5A

Personal skills and competences

Mother tongue(s)

Romanian

Other language(s)

Self-assessment

European level (*)

English

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
B2	Independent user	C1	Proficient user	C1	Proficient user	B2	Independent user	B2	Independent user

(*) [Common European Framework of Reference for Languages](#)

Social skills and competences

Friendly, Trustworthy, Hard-working, Communicative, Highly organized, Problem solver, Team player – in the expertise area

Organisational skills and competences

Competent organizer and coordinator, empathic with colleagues, innovative in projects development

Technical skills and competences

Technical skilled in the area of fuel cell and membrane reactor modeling;
Projects financial analysis
CFD analyses with Fluent (6.3, 12), Fluent PEM Fuel Cell Module and COMSOL Multiphysics 4.2

Computer skills and competences

Programming in languages: *Visual Basic*, ArcView 8.1.2, Borland C++, Turbo Pascal
CFD analyses with Fluent (6.3, 12), Fluent PEM Fuel Cell Module and COMSOL Multiphysics 4.2
Operation system: Microsoft Windows XP & Microsoft Windows 7
Productivity suite: Microsoft Office 2003 & 2007;
Multimedia software & Internet browsers

Other skills and competences

Open-minded, curious and inventive

Driving licence

B category

Additional information

Marital status:

Married; one child

References about me:

Prof Horia Ene (scientific coordinator of my PhD Thesis), retired from Institute Simion Stoilow, Romanian Academy, Bucharest, Romania

Annexes

Annex 1: List of relevant published papers

Annex 2: List of published books/chapters

Annex 3: The experience accumulated in research projects

Annex 4: Awards

DATE:
March 2018

SIGNATURE:

Annex 1: List of relevant published papers

Published papers indexed by Thomson Reuters Master Journal List (ex-ISI Master Journal List) with impact factor (IF):

1. **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*, accepted for publication in International Journal Of Energy Research
2. Daniela Ion-Ebrasu, Adnana Zaulet, Stanica Enache, Mirela Dragan, Dorin Schitea, **Elena Carcadea**, Mihai Varlam and Konstantin Petrov, *Electrochemical Characterization of Metal Oxides as Catalysts for Oxygen Evolution in Alkaline Media*, accepted for publication in Special issue of Bulgarian Chemical Communications, ISSN: 0324-1130
3. A. Marinoiu, M. Raceanu, **Elena Carcadea**, M. Varlam, I. Stefanescu, Low cost iodine intercalated graphene for fuel cells electrodes, Applied Surface Science, <http://dx.doi.org/10.1016/j.apsusc.2017.01.295>, 2017
4. A. Marinoiu, Raceanu M, **Carcadea E**, Varlam M, Balan D, Ion-Ebrasu D, Stefanescu I, Enachescu M. Iodine-Doped Graphene for Enhanced Electrochemical Oxygen Reduction Reaction in Proton Exchange Membrane Fuel Cell Applications. J Electrochem Energy Convers Storage 2017;14:31001. doi:10.1115/1.4036684. (IF=0.817)
5. Marinoiu A, Raceanu M, **Carcadea E**, Varlam M, Soare A, Stefanescu I. Doped Graphene as Non-Metallic Catalyst for Fuel Cells. Mater Sci 2017;23:108–13. doi:10.5755/j01.ms.23.2.16216. (IF=0.393)
6. A. Marinoiu, **Elena Carcadea**, C. Cobzaru, C. Cernatescu, Numerical Approach for Catalytic Conversion of CO₂ to Methane over Nickel Base Catalysts, Revista de chimie, 68 (1), pg. 128-133, 2017
7. 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, vol. 118, nr 1, pg 281-296, 2016, ISSN: 1878-5204, Factor de impact: 1.17
8. A. Marinoiu , C. Cobzaru, **Elena Carcadea**, M. Raceanu, I. Atkinson, M. Varlam, I Stefanescu, *An experimental approach for finding low cost alternative support material in PEM fuel cells*, Revue Roumaine de Chimie, vol 61, nr 4-5, pp. 4533-440, ISSN 0035-3930
9. 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, Impact factor: 1.065
10. 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, Factor de impact: 0,311
11. 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. doi:10.1016/j.matpr.2015.08.013, Factor de impact: 0
12. A. Marinoiu, C. Cobzaru, **Elena Carcadea**, M. Raceanu, C. Capris, V. Tanislav, C. Teodorescu, I. Iordache, “*Numerical analysis of Cu and Ni based catalysts in the hydrogenation process of glycerol*”, Environmental Engineering and Management Journal, 2015, vol. 14, no. 9, 2201-2211 <http://omicron.ch.tuiasi.ro/EEMJ/>, eISSN: 1843-3707, Factor de impact: 1.065
13. 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, Factor de impact: 0.311
14. 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, <http://omicron.ch.tuiasi.ro/EEMJ/>, eISSN: 1843-3707, Factor de impact: 1.065
15. A. Marinoiu, C. Cobzaru, **Elena Carcadea**, C. Capris, V. Tanislav, M. Raceanu, “*Hydrogenolysis of glycerol to propylene glycol using heterogeneous catalysts in basic aqueous solutions*”, Reaction Kinetics Mechanisms and Catalysis, 2013, vol. 110, nr. 1, pg. 63-73, doi: 10.1007/s11144-013-0596-8, ISSN: 1878-5204, Factor de impact: 1.17
16. **Elena Carcadea**, D. B. Ingham, I. Stefanescu, R.E. Ionete, H. Ene, “*The influence of permeability changes for a 7-serpentine channels PEM fuel cell performance*”, International Journal of Hydrogen Energy, 2011, vol. 36, nr. 16, pg.10376-10383, ISSN: 0360-3199, Factor de Impact: 3.313
17. **Elena Carcadea**, H. Ene, D. B. Ingham, Roxana Elena Lazar (Ionete), L. Ma, M. Pourkashanian, I. Stefanescu, “*A computational fluid dynamics analysis of a PEM fuel cell system for power generation*”, International Journal of Numerical Methods for Heat & Fluid Flow, 2007, vol. 17, nr. 3, pp. 302-312, ISSN: 0961-5539, Factor de Impact: 1.399
18. L.Ma, M. Pourkashanian, D.B. Ingham, **Elena Carcadea**, “*A Review of the Computational Fluid Dynamics Modelling of Fuel Cells*”, Journal of Fuel Cell Science and Technology, 2005, vol. 2, nr. 4, pg. 246-257, ISSN 1550-624x, Factor de Impact: 0.994
19. **Elena Carcadea**, H. Ene, D.B. Ingham, Roxana Elena Lazar (Ionete), L. Ma, M. Pourkashanian, I. Stefanescu, “*Numerical Simulation of Mass and Charge Transfer for a PEM fuel cell*”, International Communications in Heat and Mass Transfer, 2005, vol. 32, nr. 10, pg. 1273 – 1280, ISSN 0735-1933, Factor de Impact 2.782.

Published papers indexed by Thomson Reuters Master Journal List (ex-ISI Master Journal List) without impact factor (IF) or by other international databases:

Published papers in specialized volumes without ISI cotation

1. **Elena Carcadea**, M. Varlam, Derek B. Ingham, Laurentiu G Patularu, Adriana Marinoiu, Daniela Ion-Ebrasu, I. Stefanescu, *Effect of Gdl(+MPL) Compression on the PEM Fuel Cell Performance*, ECS Transaction, doi: 10.1149/07514.0167ecs, ECS Trans., 2016, vol 75, nr 14, pg. 167-177, ISSN: 1938-5862, Indexed in Scopus

2. I. Stefanescu, M. Varlam, **Elena Carcadea**, M. Buga, "Perspective privind stocarea electrochimica a energiei la ICSI Rm. Valcea", Volumul Conferintei "Stiinta moderna si energia -Producerea, Transportul si utilizarea energiei, pg. 216-224, ISSN 2066-4125, 2016
3. **Elena Carcadea**, M. Varlam, I. Stefanescu, D. Ingham, A. Marinouiu, L. Patularu, M. Raceanu, D. Schitea, *A CFD Simulation for an Air Breathing PEMFC for Power Source Portable Applications*, ECS Transaction, doi: 10.1149/06917.0971ecst ECS Trans., **2015**, vol. 69, nr 17, pg. 971-982, ISSN: 1938-5862, Indexed in Scopus
4. A. Marinouiu, **Elena Carcadea**, M. Raceanu, C. Cobzaru, M. Varlam, *Carbon Dioxide Conversion To Methane Over Nickel Base Catalyst*, Advances in Environmental and Agricultural Science, WSEAS, Energy, Environmental and Structural Engineering Series/ 32, **2015**, ISBN: 978-1-61804-270-5, ISBN: 978-1-61804-270-5
5. I. Stefanescu, M. Varlam, **Elena Carcadea**, New approaches on the energy storage technologies in Romania, Buletinul Agir, Supliment 1/2015, pg. 54-60, ISSN-L 1224-7928, BDI: INDEX COPERNICUS INTERNATIONAL, ACADEMIC KEYS, getCITED, Online: ISSN 2247-3548
6. I. Stefanescu, M. Varlam, **Elena Carcadea**, "ROM-EST – Un catalizator in domeniul stocarii energiei", Volumul Conferintei "Stiinta moderna si energia -Producerea, Transportul si utilizarea energiei, pg. 73-88, ISSN 2066-4125, **2015**
7. A. Marinouiu, **Elena Carcadea**, M. Raceanu, I. Petreanu, E. Marin, C. Teodorescu, A review regarding a "man-portable" lightweight flexible fuel cell concept small power supply, Progress of Cryogenics & Isotopes Separation, 2015, vol. 18, nr 1, pg. 81-88, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS),
8. **Elena Carcadea**, M. Varlam, I. Stefanescu, L. Patularu, A. Marinouiu, V. Tanislav, S. Enache, *Effects of Flow Field on PEM Fuel Cell Performance*, Progress of Cryogenics and Isotopes Separation, vol. 17, nr. 2, pg. 74-81, National Institute of Scientific Information (INIS), ISSN: 1582-2575, **2014**, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory
9. L. Patularu, D. Schitea, S. Enache, M. Varlam, D. Ion-Ebrasu, **E Carcadea**, A. Marinouiu, G. Rasoi, A. Craciunescu, *PEMFC Short Stack Development at ICSI Ramnicu Valcea, from Sketch to Applications*, Progress of Cryogenics and Isotopes Separation ISSN: 1582-2575, vol. 17, nr. 2, pg. 82-89, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS)
10. A. Marinouiu, **Elena Carcadea**, M. Răceanu, I. Petreanu, M. Varlam, *The Use Of Nickel As A Catalyst For Carbon Dioxide Hydrogenation*, Progress of Cryogenics & Isotopes Separation, vol. 17, nr. 2, pg. 101-112, ISSN: 1582-2575, **2014**, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS)
11. **Elena Carcadea**, M. Varlam, A. Marinouiu, I. Ștefănescu, M. Răceanu, L. Pătularu, D. Ebrașu, V. Tanislav, C. Capriș, "The Influence of Catalyst Properties on CO Oxidation Reaction – A Theoretical Approach", "Progress of Cryogenics and Isotopes Separation", vol. 17, nr. 1/2014, pg. 24-31, ISSN: 1582-2575
12. A. Marinouiu, **Elena Carcadea**, R. Ionete, M. Raceanu, C. Cobzaru, I. Iordache, C. Teodorescu, A. Enache, M. Varlam, *Carbon Dioxide Reusing for Methane Fuel Obtaining Over Heterogeneous Catalysts as a Possible Source of Energy*, Progress of Cryogenics and Isotopes Separation, ISSN: 1582-2575, vol. 17, nr. 1, **2014**, pg. 16-23, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS)
13. A. Marinouiu, **Elena Carcadea**, I. Petreanu, C. Șișu, M. Răceanu, C. Capriș, V. Tanislav, D. Schitea, D. Ebrasu, L. Pătularu, "Carbon Monoxide Retention for Fuel Cell Application Using Heterogeneous Catalysts", Progress of Cryogenics and Isotopes Separation, ISSN: 1582-2575, vol. 17, nr. 1, **2014**, pp. 32-39, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS)
14. S. Gherghinescu, A. Ciocan, **Elena Carcadea**, D. Ebrașu, "Efficient Methods for Flue Gas Heat Recovery and Conversion Into Electricity", Progress of Cryogenics and Isotopes Separation, ISSN: 1582-2575, vol. 17, nr. 1, **2014**, pg. 40-51, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
15. I. Stefanescu, M. Varlam, **Elena Carcadea** "Realizări și provocări în tehnologiile de dezvoltare a pilelor de combustibil cu hidrogen - cazul României", Volumul Conferintei "Stiinta moderna si energia -Producerea, Transportul si utilizarea energiei, pg. 161-169, ISSN 2066-4125, **2014**
16. L. Pătularu, S. Enache, D. Schitea, I. Ștefănescu, M. Varlam, M. Raceanu, D. Ebrașu, **Elena Carcadea**, A. Craciunescu, "Influența compresiunii stratului de difuzie a gazului asupra performanței pilelor de combustibil de tip PEM", Volumul Conferinței "Știința moderna si energia - Producerea, Transportul si utilizarea energiei, pg. 122-129, ISSN 2066-4125, **2014**
17. **Elena Carcadea**, M. Varlam, A. Marinouiu, I. Stefanescu, M. Raceanu, V. Tanislav, *Numerical Investigation of Carbon Monoxide Oxidation*, Progress of Cryogenics and Isotopes Separation, ISSN: 1582-2575, vol. 16, nr. 2, **2013**, pg. 40-45, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
18. A. Marinouiu, **E. Carcadea**, C. Cobzaru, C. Capriș, V. Tanislav, M. Raceanu, I. Iordache, *The efficient catalytic conversion of glycerol into valuable chemical*, Progress of Cryogenics and Isotopes Separation, ISSN: 1582-2575, vol. 16, nr. 1, **2013**, pg. 36-43, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS)
19. I. Ștefănescu, M. Varlam, **Elena Carcadea** "Tehnologie alternativa de stocare si generare a energiei sub forma de metan regenerabil", Știința moderna si energia -Producerea, Transportul si utilizarea energiei, **2013**, pg. 186-196, ISSN: 2066-4125
20. **Elena Carcadea**, M. Varlam, M. Raceanu, M. Iliescu, A. Enache, M. Culcer, E. Daniela, A. Marinouiu, V. Tanislav, C. Capriș, "Energy systems based on renewable resources and hydrogen storage - an overview and a scenario analyses", Progress of Cryogenics and Isotopes Separation", ISSN: 1582-2575, vol. 16, nr. 1, **2013**, pg. 5-12, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
21. A. Marinouiu, **Elena Carcadea**, C. Teodorescu, D. Marinescu, I. Petreanu, M. Raceanu, L. Patularu, *The catalytic conversion of renewable feedstocks*, "Progress of Cryogenics and Isotopes Separation", ISSN: 1582-2575, vol. 16, nr. 2, **2013**, pg. 30-39, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).

Information (INIS)

22. D. Ion-Ebrasu, G. Dorcioman, E. Axente, N. Mihailescu, L. Patularu, E. Carcadea, M. Varlam, I. Stefanescu, A. Iulianelli, S. Liguori, A. Vaseashta, A. Basile, *Modified Nafion/TiO₂ membranes for proton exchange membrane fuel cells*, 5th European Fuel Cell Piero Lunghi Conference and Exhibition, EFC **2013**, pg 91-92, ISBN: 978-888286297-8, Indexed in Scopus
23. M. Răceanu, C. Cobzaru, A. Marinoiu, **Elena Carcadea**, M. Varlam, *Effect of the catalytic ink preparation method on the performance of membrane electrode assemblies*, Buletinul Institutului Politehnic din Iasi, Sectia Chimie si Inginerie Chimica, pg. 81-88 ISSN 0254-7104
24. **Elena Carcadea**, Varlam, M., Ioan Stefanescu, Marinoiu A., Tanislav V., Capris C., "Parametrical study of steam methane reforming in a membrane reactor", vol. 15, nr. 2, **2012**, ISSN: 1582-2575, pg. 25-34, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
25. A. Marinoiu, C. Cobzaru, **Elena Carcadea**, V. Tanislav, C. Capris, *Mathematical Modeling of Catalytic Hydrogenation Process of Glycerol to Propylene Glycol*, Revista "Progress of Cryogenics and Isotopes Separation", ISSN: 1582-2575, vol. 15, nr. 2, **2012**, pp. 35-40, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
26. **Elena Carcadea**, M. Varlam, Ioan Stefanescu, M. Culcer, M. Iliescu, Enache A., V. Tanislav, C. Capris, "*Heat Transfer Modelling of Steam Methane Reforming*", Progress of Cryogenics and Isotopes Separation, vol. 15, nr. 1, **2012**, ISSN: 1582-2575, pg 53-58, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
27. **Elena Carcadea**, M. Varlam, I. Stefanescu, V. Tanislav, L. Patularu, D. Schitea, H. Ene, *Study of flow field design for improving PEMFC performance*, Progress of Cryogenics and Isotopes Separation, vol. 14, nr. 2, pg. 21-30, ISSN 10582-2575, **2011**, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
28. **Elena Carcadea**, M. Varlam, I. Stefanescu, V. Tanislav, H. Ene, B. Nicolescu, "*Mathematical modeling of steam methane reforming in a membrane reactor – preliminary result*", Progress of Cryogenics and Isotopes Separation, vol 14, nr. 1, ISSN 10582-2575, **2011**, pg. 65-72, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
29. Mihai Varlam, Mihai Balan, Mircea Raceanu, Mihail Culcer, **Elena Carcadea**, Using steady-state isotope transient kinetic analysis to investigate reaction mechanism in a membrane methane reformer for hydrogen production, European Fuel Cell **2011** Piero Lunghi Conference & Exhibition, 2011, ISBN: 978-888286254-1, Indexed in Scopus
30. **Elena Carcadea**, M. Varlam, I. Stefanescu, D.B. Ingham, V. Tanislav, H. Ene, Mathematical Investigation and CFD simulation of methane steam reforming in a membrane reactor, Proceedings of the 4th European Fuel Cell Piero Lunghi Conference and Exhibition, **2011**, pg. 331-332, ISBN: 978-888286254-1, Indexed in Scopus
31. I. Ștefănescu, M. Varlam, **Elena Carcadea** "CRYO-HY - Un nou laborator de cercetare românesc ce vine în sprijinirea tehnologiilor energetice", Volumul Conferinței "Știința modernă și energia - Producerea, Transportul și utilizarea energiei, **2011**, pg. 254-264, ISSN: 2066-4125
32. **Elena Carcadea**, Mihai Varlam, **Ioan Stefanescu**, Derek B. Ingham, Vasile Tanislav, Catalin Capris, Horia Ene, Bogdan Nicolescu, "A CFD investigation of membrane reactor for methane steam reforming", Progress of Cryogenics and Isotopes Separation, vol. 13, nr. 1, **2010**, ISSN: 1582-2575, Abstracting and indexing in: Contemporary Science Association, EBSCO, Ulrich's Periodicals Directory, National Institute of Scientific Information (INIS).
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Annex 2: List of published books/chapters

1. Ioan Stefanescu, Mihai Culcer, Mihai Varlam, Roxana Elena Ionete, Vasile Stanciu, *Elena Carcadea*, Mariana Iliescu, Adrian Enache, Mircea Raceanu, Laurentiu Patularu, Daniela Ebrasu, Vasile Tanislav - Book "Fuel Cells – Between Theory and Practice" (in Romanian), Ed. CONPHYS, Rm. Valcea, 2010, ISBN 978-973-750-197-4
2. Roxana Elena Ionete, *Elena Carcadea*, Mihai Culcer - Chapter 17. European Research Environment in the Field of Hydrogen and Fuel Cell, in book "Complex Behaviour of the Distributed Generation System: Intelligent Management of the Renewable Energy Resources for assuring the DG System Power Quality and a Sustainable Development", Publishing house of the University of Pitești, 2010, Pitești, ISBN 978-606-560-128-4 (hardcover), ISBN 978-606-560-129-1 (e-book).
3. Roxana Elena Ionete, *Elena Carcadea*, Mihai Culcer - Chapter 17. European Research Environment in the Field of Hydrogen and Fuel Cell, in book "Advances in Energy research: Distributed Generation System integrating Renewable Energy Resources", Nova Science Publishers, Inc. USA, ISBN: 978-1-61209-991-0, 2011
https://www.novapublishers.com/catalog/product_info.php?products_id=22516
4. Roxana Elena Ionete, Eusebiu Ilarian Ionete, *Elena Carcadea*, Ioan Stefanescu - Cartea "Technological risk. Risk assessment aspects for liquid hydrogen isotopic distillation facilities" (in Romanian), Ed. CONPHYS, 2009, ISBN 978-973-750-147-9
5. *Elena Carcadea*, Horia Ene, Bogdan Nicusor Niculescu, Roxana Elena Ionete, Ioan Stefanescu - Book "Fluid dynamics modeling in fuel cells with proton exchange membrane" (in Romanian), Ed. CONPHYS, 2009, ISBN 978-973-750-146-2

Annex 3: The experience accumulated in research projects

Research Projects

International Projects:

- "HyLAW, Identification of legal rules and administrative processes applicable to Fuel Cell and Hydrogen technologies' deployment, identification of legal barriers and advocacy towards their removal", Fuel Cells and Hydrogen Joint Undertaking ('FCH JU') Project, Coordinator Hydrogen Europe, 2017-2020, participant
- "Hydrogen and Fuel Cell Co-ordination (HY-CO)", EC ERAC-CT-2004-011744 FP6 project, participant

Romanian National Research Projects:

- Project PN III 85PED "Backup Emergency Hydrogen-Based Power Source", 2017-2018, project manager
- Project PN II 284 "Development of a portable power generator – charger type, based on hydrogen electrochemistry, designed for maintaining energy support of the combatants equipment in the tactical field, 2014-2017, project manager
- Project PN "Theoretical and experimental investigations regarding the systems for CO retention at low temperature for PEM fuel cell and their applications", 2013-2014, coordinator
- Project PN " The integration of Renewable Energy using hydrogen based technologies", 2013, participant
- Project POS 2.1.2, Contract 119/2010, 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 - participant
- Project PN II "Mathematical modeling and experimental investigation of material degradation in a PEM fuel cell" – ICIT team coordinator
- PNCDI 2: „Miniinstalation for energy production from renewable sources. Application for microunits and residential assemblies” - participant
- PNCDI 2: "Fuzzy systems for simulating and evaluating scenarios with technological and ecological risks and actions mode in the climatic changing context" - participant
- Project CEEX-Modulus I "Heat and water management for PEM fuel cell systems" - ICIT team coordinator
- Project CNCSIS "Development of a computational model for heat and water management in a proton exchange membrane fuel cell", participant
- Project CEEX-Modulus III "Promoting and supporting the integration of the Romanian research in the field of energy conversion and renewable energy sources in the European technology platform for hydrogen and fuel cells", participant
- Project CEEX-Modulus III, „Promoting the participation to European research program in the hydrogen and fuel cells domain", participant;
- Project PN - "Analyses and optimization of PEM fuel cell from geometry and heat and water management points of view" – participant

- Project Sectorial Plane “Developing integrated research platforms in the energetic domain” - participant
- Project PN – “Study regarding the fluid dynamics in hydrogen fuel cells” – participant
- Project MENER – “Technology for energy conversion and storage using hydrogen fuel cells, for telecommunication” – participant;
- Project MENER – “Integrated system for energy production using fuel cells with hydrogen and polymer electrolyte membrane” - participant

Annex 4: Awards

1. First Prize awarded by the National Authority for Scientific Research – Romania, for the fundamental research project “Conversion technologies and energy storage in hydrogen fuel cells”, Bucharest 2005