



PERSONAL INFORMATION

Delia PĂTROI

 National Institute for R&D in Electrical Engineering ICPE-CA Bucharest, Advanced Materials Department, 313, Splaiul Unirii, district 3, Bucharest 030138

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 delia.patroi@icpe-ca.ro

WORK
EXPERIENCE2016-present **Senior researcher II**

National Institute for Research & Development in Electrical Engineering ICPE - Advanced Research- Advanced Materials Department, 313, Splaiul Unirii, 030138 Bucharest, Romania

- Research in the field of characterization of metallic, ceramic and carbonaceous materials specific of electrical engineering using a large area of characterization techniques: X-ray diffraction, Scanning Probe Microscopy, Scanning Electron Microscopy, Optical Microscopy, Hardness testing, Magnetic measurements trough Alternating Gradient Force Magnetometry, Vibrating Sample Magnetometry, Hysteresisgraph.
- Development of some new metallic materials with improved magnetic and structural properties.
- Research and characterization in the field of metallic and magnetic thin films (nanostructures and nanopatterns).

Business or sector Scientific Research

2008-2015 **Senior researcher III**

National Institute for Research & Development in Electrical Engineering ICPE - Advanced Research- Laboratory for Electrical Materials and Products Characterization, 313, Splaiul Unirii, 030138 Bucharest, Romania

- Researche in the field of characterization of metallic, ceramic and carbonaceous materials specific of electrical engineering using a large area of characterization techniques: X-ray diffraction, Scanning Probe Microscopy, Scanning Electron Microscopy, Optical Microscopy, Hardness testing, Magnetic measurements trough Alternating Gradient Force Magnetometry, Vibrating Sample Magnetometry, Hysteresisgraph.
- Development of some new metallic materials with improved magnetic and structural properties.
- Research and characterization in the field of metallic and magnetic thin films (nanostructures and nanopatterns).

Business or sector Scientific Research

2006-2008 **Junior researcher**

National Institute for Research & Development in Electrical Engineering ICPE - Advanced Research- Laboratory for Electrical Materials and Products Characterization, 313, Splaiul Unirii, 030138 Bucharest, Romania

- Research in the field of characterization of metallic, ceramic and carbonaceous materials used in electrical engineering using a large area of characterization techniques: X-ray diffraction, Scanning Probe Microscopy, Scanning Electron Microscopy, Optical Microscopy, Hardness testing, Magnetic measurements trough Vibrating Sample Magnetometry, Hysteresisgraph.
- Development of some new metallic materials with improved magnetic and structural properties.

Business or sector Scientific Research

2005-2006

Assistant junior researcher

National Institute for Research & Development in Electrical Engineering ICPE - Advanced Research - Laboratory for Electrical Materials and Products Characterization , 313, Splaiul Unirii, 030138 Bucharest, Romania

- Characterization and testing of metallic, ceramic and carbonaceous materials used in electrical engineering using Optical Microscopy, Hardness testing, etc.

Business or sector Scientific Research

EDUCATION AND TRAINING

2008-2012

PhD in Material Science and Engineering

EQF Level 8

“Politehnica” University of Bucharest, Faculty of Material Science and Engineering

- Post-graduate studies in Material Science and Engineering
- Development and characterization of new nanostructured magnetic thin films with applicability in micro-technologies

2004-2006

Diploma of master in Technical and Applicable Magnetism

EQF Level 7

“Politehnica” University of Bucharest, Faculty of Electrical Engineering

- Post-graduate studies in technical and applicable magnetism field
- Magnetic measurements techniques, magnetic materials, magnetic sensors and actuators

2004-2006

Diploma of master in electronics, non-destructive testing (NDT) and metrology

EQF Level 7

University of Bucharest, Faculty of Physics

- Electronics and implementation of some materials in electronics
- NDT and metrology regarding materials characterization field

1999-2004

Bachelor of Science - Engineer in Physics

EQF Level 6

University of Bucharest, Faculty of Physics

- Technological Physics

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B1	B1	B1	B1	B1
French	B1	B1	B2	B2	B2
Italian	B1	B1	B2	B2	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills

- Experience of working in team
- Good communication skills gained through my experience as deputy head of laboratory, project manager

Organisational / managerial skills

- Project Responsible (2005 – 2008) at 2 CEEX national research projects
- Participant (2005 – 2015) at over 80 national research projects and at 13 international research projects, 3 international research projects as Project Manager
- Deputy head of Laboratory for Electrical Materials and Products Characterization (2010-2011, 2012-2015)

Job-related skills

- Ability to use complex characterization techniques:
 - X-ray diffraction, Scanning Probe Microscopy, HRTEM/ TEM, SAED, EELS, EFTEM, Scanning Electron Microscopy, Optical Microscopy, Hardness testing,
 - Magnetic measurements: Alternating Gradient Force Magnetometry, Vibrating Sample Magnetometry, Hysteresisgraph
- Good knowledge of control and quality assurance / certification

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Independent user	Independent user	Basic user	Basic user

Levels: Basic user - Independent user - Proficient user
[Digital competences - Self-assessment grid](#)

- A good familiarity with instruments Microsoft Office (Word, Excel, Power Point),
- Elementary knowledge of application Origin

Other skills

Internships and training courses:

- Training course on HRTEM (TEM, SAED, EELS, EFTEM, STEM, STEM-EDX), 18.02.-2.03.2018, Milano, Italy
- International Autumn School on Fundamental and Electron Crystallography, 8-13.10.2017, Sofia, Bulgaria
- Training course XRD Thin Film Analysis (XRR, HRXRD, GIDXRD), 4-8 apr. 2011, Karlsruhe, Bruker AXS GmbH, Germany
- Scanning Probe Microscopy, Qualified user Ntegra Aura, NTMDT Rusia, 2010
- PhD research stage at INRIM Torino, Italy, March-June 2010 regarding: Preparation of magnetic thin films with RF sputtering. Amorphous and crystalline continuous magnetic thin films, with nanopatterned structures, structural and magnetic characterizations
- KMM-NoE Integrated Post-Graduate School, Skill Path 1st Intensive Session of Electron Microscopy, Cracovia, Poland, 29.05 – 2. 06. 2006
- KMM-NoE Integrated Post-Graduate School, 2nd Skill Path Intensive session: Advanced characterization techniques based on large scale facilities, Italy, Ancona, 12 - 16 March 2007
- Course "Management of research projects" organized within CEEX Program - M II / Contract No. 6062 by MCT - National School of Political and Administrative Studies, 01.10.2006 - 30.11.2006; (Certificate No. 0047/12.12.2007)
- Summer school „New experimental approaches to Magnetism”, Romania, Constanta, 7-16 September 2005
- Training in the field of Atomic Force Microscopy performed within the FP6-SSA-17240-INDUMAT Project, Scientific Supervisor: Dr. Fausto Fiorillo, Materials Department, IEN "Galileo Ferraris" Torino, Italy, August 2005

ADDITIONAL
INFORMATION

 Publications
(selection)

h index: 6

ORCID: 0000-0003-1579-423X

ResearcherID: H-4455-2013

Scopus Author ID:
24344730500

- Paula Cucos, Lorenzo Sorace, Catalin Maxim, Sergiu Shova, **Delia Patroi**, Andrea Caneschi, Marius Andruh, Cobalt(II) Ions Connecting [Co(II)₄] Helicates into a 2-D Coordination Polymer Showing Slow Relaxation of the Magnetization, *Inorganic Chemistry*, 56 (19), pp 11668–11675, DOI: 10.1021/acs.inorgchem.7b01640, Publication Date (Web): September 15, 2017, impact factor 4.857
- Magdalena-Valentina Lungu, Eugeniu Vasile, Mariana Lucaci, **Delia Pătroi**, Natalia Mihăilescu, Florentina Grigore, Virgil Marinescu, Alexandra Brătulescu, Sorina Mitrea, Arcadie Sobetskii, Arcadii A. Sobetskii, Marcela Popa, Mariana-Carmen Chifiriuc, Investigation of optical, structural, morphological and antimicrobial properties of carboxymethyl cellulose capped Ag-ZnO nanocomposites prepared by chemical and mechanical methods, *Materials Characterization*, Volume 120, October 2016, pp. 69-81, ISSN 1044-5803, <http://dx.doi.org/10.1016/j.matchar.2016.08.022>, 2016, impact factor 2.383
- V. Larin, L. V. Panina, E.-A. Patroi, **D. Patroi**, V. Bashev, N. Kutseva, Directed crystallization of glass-coated microwires, *Phys. Status Solidi A*, 213: 384–389, doi: 10.1002/pssa.201532579, 2016, impact factor 1.616
- **D. Patroi**, V.D. Zhaketov, Yu. V. Nikitenko, M.M.Codescu, E.A. Patroi, E.Manta, Neutron depolarization investigations of spring exchange interaction nanocomposites, *Optoelectronics and Advanced Materials – Rapid Communications*, vol.9, Iss. 9-10, ISSN: 18426573, 2015, impact factor 0.394
- Teodor Sandu, Andrei Sarbu, Celina Maria Damian, **Delia Patroi**, Tanta Verona Iordache, Temenuzhka Budovina, Boyko Tsyntsarski, M. Ferhat Yardim, Ahmet Sirkecioglu, Functionalized bicomponent polymer membranes as supports for covalent immobilization of enzymes, *Reactive and Functional Polymers*, Vol. 96, pp. 5–13, doi:10.1016/j.reactfunctpolym.2015.09.001, 2015, impact factor 2.515
- Penu, R., Obreja, A.C., **Patroi, D.**, Diaconu, M., Radu, G.L., Graphene and gold nanoparticles based reagentless biodevice for phenolic endocrine disruptors monitoring, *Microchemical Journal*, vol. 121, pp.130-135, Publisher Elsevier Inc., DOI: 10.1016/j.microc.2015.03.002, ISSN: 0026265X, 2015, impact factor 3.583
- Liana Anicai, Aurora Petica, **Delia Patroi**, Virgil Marinescu, Paula Proteasa, Stefania Costovici, Electrochemical synthesis of nanosized TiO₂ nanopowder involving choline chloride based ionic liquids, *Materials Science and Engineering B* 199, pp.87–95, Publisher Elsevier Ltd, DOI: 10.1016/j.mseb.2015.05.005, ISSN: 09215107, 2015, impact factor 2.122
- Claudia Maria Simionescu, Alina Tatarus, Christu Tardei, **Delia Patroi**, Mioara Dragne, Daniela C. Culita, Rodica-Elena Patescu, Laurentiu Teodor Busuioc, Ioana Melinte, Nano and Micro-hydroxyapatite Particles for Lead Removal from Wastewater, *Revista de Chimie*, vol. 66, nr. 5, pp.732-742, Accession Number: WOS:000355126000028, ISSN: 00347752, 2015, impact factor 0.677
- Lungu Magdalena, Tsakiris Violeta, Enescu Elena, **Pătroi Delia**, Marinescu Virgil, Tâlpeanu Dorinel, Pavelescu Dan, Dumitrescu Gheorghe, Radulian Alexandru, Development of W-Cu-Ni Electrical Contact Materials with Enhanced Mechanical Properties by Spark Plasma Sintering Process, *Acta Physica Polonica A*, vol. 125, Iss.2, pp. 327-330, DOI: 10.12693/APhysPolA.125.327, ISSN: 05874246, 2014, impact factor 0.604
- Geanta V., Voiculescu I., Ștefănoiu R., Savastru D., Csaki I., **Pătroi D.**, Leonat L., Processing and characterization of advanced multielement high entropy materials from AlCrFeCoNi system, *Optoelectronics and Advanced Materials – Rapid Communications*, vol. 7, Iss. 11- 12, pp.874-880, ISSN: 18426573, 2013, impact factor 0.402
- Proteasa Paula, Codescu Mirela, Pătroi Eros, **Pătroi Delia**, Marinescu Virgil, Electroplating in magnetic field and characterization of NiCoMnP alloy films with permanent magnet, *Optoelectronics and Advanced Materials – Rapid Communications* vol. 7, nr. 1-2, pp. 90 – 95, ISSN: 18426573, 2013, impact factor 0.402
- Voiculescu I., Geanta V., Ștefănoiu R., **Patroi D.**, Binchinciu H., Influence of the chemical composition on the microstructure and microhardness of AlCrFeCoNi High Entropy Alloy, *Revista de Chimie*, vol. 64, nr.12, p.1441-1444, ISSN 0034-7752, 2013, impact factor 0.304
- **Patroi D.**, Codescu M.M., Patroi E.A., Marinescu V., Structural and magnetic behavior of DC sputtered Alnico type thin films, *Optoelectronics and Advanced Materials – Rapid Communications*, vol. 5, nr. 10, pp. 1130 - 1133, ISSN: 18426573, 2011, impact factor 0.304

Patents/patent requests
(selection)

- **Pătroi Delia**, Pătroi Eros-Alexandru, Dionezie Bojin, Codescu Mirela-Maria, Magnetic materials as thin layers based on AlNiCo alloys, **128449 B1/2016**
- A. Bara, C. Banciu, **Delia Patroi**, L. Leonat, G.A. Rimbu, Process for obtaining a carbon-carbon composite, **126305 B1/ 2015**
- E.A. Pătroi, R. Erdei, M. M. Codescu, E. Manta, **Delia Patroi**, Metallic microwires for electromagnetic shielding fabric, **126211 B1/2015**
- M. M. Codescu, R. Erdei, A. Iorga, W. Kappel, E. Manta, F. Oprea, E.A. Pătroi, **Delia Patroi**, V. Midoni, I. Zapodeanu, M. Burlacu, D. Buteica, P. Nechita, Security paper with electronic detection and validation, **126675 B1/2015**
- **Pătroi Delia**, Pătroi Eros-Alexandru, Dionezie Bojin, Codescu Mirela-Maria, Constantinescu-Goldner Cătălin Methods for obtaining thin magnetic layers such as AlNiCo, **128389 B1/2015**
- Malaeru Teodora, Neamtu Jenica, Georgescu Gabriela, Marinescu Virgil, **Patroi Delia**, Method of obtaining conductive adhesive composition based on nanostructured silver, **A 00857/13.10.2014**
- Peter Ioan, Scutaru Gheorghe, Gavrila Horia, Petrescu Lucian, Paltanea Gheorghe, Paltanea Veronica, Kappel Wilhelm, Pătroi Eros-Alexandru, **Patroi Delia**, Manta Eugen, Iorga Alexandru, Method for assessing the effect of how cutting iron sheets on losses in electric machines, **A/00335/ 11.05.2016**
- Malaeru Teodora, Pătroi Eros-Alexandru, Georgescu Gabriela, Manta Eugen, **Patroi Delia**, Method for obtaining vegetable oil magnetic nanofluid, **A/00619/7.09.2016**

 National prizes/awards
received through a selection
process
(selection)

- Bronze medal, Magnetic materials as thin layers based on AlNiCo alloys, D. Pătroi, E.A. Patroi, D. Bojin, M. M. Codescu, 44th International Exhibition of Inventions of Geneva, Switzerland, 2016
- Excellence diploma and gold medal, Process for obtaining a carbon-carbon composite, Bara Adela, Banciu Cristina, Patroi Delia, Leonat Lucia Nicoleta, Rimbu Gimi Aurelian, The International Exhibition of Research, Innovation and Inventions PRO INVENT, ed. XIV, 2016, Cluj Napoca, Romania
- Special award of Romanian Association of Nonconventional Technologies awarded for the invention Process for obtaining a carbon-carbon composite, Bara Adela, Banciu Cristina, Patroi Delia, Leonat Lucia Nicoleta, Rimbu Gimi Aurelian, The International Exhibition of Research, Innovation and Inventions PRO INVENT, ed. XIV, 2016, Cluj Napoca, Romania
- Excellence diploma and gold medal, Security paper with electronic detection and validation, M. M. Codescu, R. Erdei, A. Iorga, W. Kappel, E. Manta, F. Oprea, E.A. Pătroi, Delia Patroi, V. Midoni, I. Zapodeanu, M. Burlacu, D. Buteica, P. Nechita, The International Exhibition of Research, Innovation and Inventions PRO INVENT, ed. XIV, 2016, Cluj Napoca, Romania
- Grand Prix of Technical University of Moldova, Security paper with electronic detection and validation, M. Codescu, R. Erdei, A. Iorga, W. Kappel, E. Manta, F. Oprea, E.A. Pătroi, Delia Patroi, V. Midoni, I. Zapodeanu, M. Burlacu, D. Buteica, P. Nechita, The International Exhibition of Research, Innovation and Inventions PRO INVENT, ed. XIV, 2016, Cluj Napoca, Romania

- Excellence diploma and gold medal, Metallic microwires for electromagnetic shielding fabric, A.E. Patroi, R. Erdei, M.M. Codescu, E. Manta, D. Patroi, A. Iorga, C. Morari, C. Loghin, The International Exhibition of Research, Innovation and Inventions PRO INVENT, ed. XIII, 2015, Cluj Napoca, Romania
- Excellence diploma and gold medal, Metallic microwires for electromagnetic shielding fabric, A.E. Patroi, R. Erdei, M.M. Codescu, E. Manta, D. Patroi, A. Iorga, C. Morari, C. Loghin, The International Exhibition of Research, Innovation and Inventions PRO INVENT, ed. XIII, 2015, Cluj Napoca, Romania
- Gold medal and diploma, Security paper with electronic detection and validation, M. M. Codescu, R. Erdei, A. Iorga, W. Kappel, E. Manta, F. Oprea, E.A. Pătroi, Delia Patroi, V. Midoni, I. Zapodeanu, M. Burlacu, D. Buteica, P. Nechita, EIS „INFOINVENT”, 25-28 NOV. 2015, Chişinău, Rep. of Moldova
- Silver medal, Security paper with electronic detection and validation, M. M. Codescu, R. Erdei, A. Iorga, W. Kappel, E. Manta, F. Oprea, E.A. Pătroi, Delia Patroi, V. Midoni, I. Zapodeanu, M. Burlacu, D. Buteica, P. Nechita, The 64th World Exhibition of Innovations, Research and New Technologies, INNOVA, Eureka 2015, Brussels, Belgium
- Gold medal, Process for obtaining a carbon-carbon composite, A. Bara, C. Banciu, Delia Patroi, L. Leonat, G.A. Rimbu, The 64th World Exhibition of Innovations, Research and New Technologies, INNOVA, Eureka 2015, Brussels, Belgium
- Silver Medal, Metallic microwires for electromagnetic shielding fabric, Pătroi Eros Alexandru, Erdei Remus, Codescu Mirela Maria, Manta Eugen, Pătroi Delia, Iorga Alexandru, Morari Cristian, Loghin Carmen, The International Exhibition of Inventions and New Technologies – INVENTIKA 2014, Bucharest, Romania
- Silver Medal, Metallic microwires for electromagnetic shielding fabric, Patroi E.A., Erdei R., Codescu M.M., Manta E., Patroi D., Iorga A., Morari C., The International Exhibition of Inventions – Bucharest 2011.

Member of professional
associations

Member of professional associations:
Romanian Society of Magnetic Materials - SRMM
Romanian Society of Materials „Teodor Segarceanu” (A.R.M.)
Romanian Electron Microscopy Society -SMER
European Electron Microscopy Society–ESM
Extrajudicial Technical Experts and Consultants Society- SETEC AGIR

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