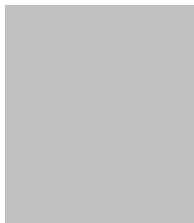


## PERSONAL INFORMATION

## MARCELA-ELISABETA BARBINTA-PATRASCU



📍 University of Bucharest, Faculty of Physics, Department of Electricity, Solid state Physics and Biophysics, 405 Atomistilor Street, Bucharest-Magurele, jud. Ilfov, CP MG – 11, postal code 077125, ROMANIA

✉ [marcela.barbinta@unibuc.ro](mailto:marcela.barbinta@unibuc.ro);

🌐 State personal website(s):

<https://www.brainmap.ro/marcela-elisabeta-barbinta-patrascu>

[https://www.researchgate.net/profile/Marcela\\_Barbinta](https://www.researchgate.net/profile/Marcela_Barbinta)

<https://scholar.google.com/citations?user=8eEhnc4AAAAJ&hl=en&authuser=1>

<https://www.linkedin.com/in/marcela-patrascu-a12a3693/>

<https://publications.waset.org/profile/7469633354>

Web of Science ResearcherID: [B-2582-2013](#)

Scopus ID: AU-ID ( "Barbinta-Patrascu, M. E." [26039467000](#) ) OR AU-ID ( "Elisabeta Barbinta-Patrascu, Marcela" [57216736516](#) )

ORCID iD: <https://orcid.org/0000-0001-7219-6514>

Sex F | Nationality: Romanian

## WORK EXPERIENCE

February 2021 – Present

### Associate Professor, PhD

University of Bucharest – Faculty of Physics, Department of Electricity, Solid State Physics and Biophysics, Bucharest-Magurele, PO Box: MG 11, 077125 Romania, <http://www.fizica.unibuc.ro/fizica/>

**Type of business or sector:** Higher education, Academic activity, Scientific research activity, Didactic and research

#### **Main activities and responsibilities:**

**Teaching activities:** Courses, seminars and practical laboratories supporting disciplines: *Systems and Processes in Living Matter, General Chemistry, Biochemistry, Bioenergetics.*

I am the first initiator of „green nanotechnology” methods at Faculty of Physics (University of Bucharest).

I am the first initiator of multifunctional chlorophyll a – labeled phytosomes (containing curcumin, chitosan and folic acid-functionalized silver nanoparticles).

**Tutorship:** License and Master Diploma in Medical Physics; Member in the coordinating committee of PhD students; Tutor of Medical Physics Master's students.

**Research activities - Main Topics of interest:** Eco-NanoTechnology; Bio-pesticides; Biomimetics; Artificial Cell Membranes; Optical microscopy of biological structures; Green Nanotechnology; Multifunctional Biogenic nanoparticles and biohybrids; Eco-friendly methods to obtain antioxidant, antimicrobial and antitumoral nanomaterials/ biohybrids; Molecular Genetics; BioPlastics; Bioenergetics; Green Chemistry; (Bio)Chemistry; BioPhysics.

I am the first initiator of multifunctional chlorophyll a – labeled phytosomes, which contain curcumin, chitosan and folic acid-functionalized silver nanoparticles.

February 2009 – January 2021

### Lecturer, PhD

University of Bucharest – Faculty of Physics, Department of Electricity, Solid State Physics and Biophysics, Bucharest-Magurele, PO Box: MG 11, 077125 Romania, <http://www.fizica.unibuc.ro/fizica/>

**Type of business or sector:** Higher education, Academic activity, Scientific research activity, Didactic and research

Main activities and responsibilities:

**Teaching activities:**

Courses, seminars and practical laboratories supporting disciplines: *Systems and Processes in Living Matter, Elements of Biostructure, Genomics and Genetic Engineering, Molecular and cellular biology, General Chemistry, Organic Chemistry, Physical Chemistry, Biochemistry, Bioenergetics, Bioengineering, Human anatomy and physiology, Biophysics.*

**Tutorship: License and Master Diploma in Biophysics/Medical Physics; member in the coordinating committee of PhD students.**

**Research activities - Main Topics of interest**

- **Eco-friendly methods** to obtain antioxidant, antimicrobial and antiproliferative **nanomaterials/ biohybrids**;
- **Eco-design and characterization of Green nanomaterials**;
- **Bio-pesticides**;
- **Materials Science**
- **Nanoscience**
- **Biogenic nanoparticles and biohybrids**:
  - phytosynthesis of metal nanoparticles (AgNPs, AuNPs, CuNPs, PtNPs) and bimetallic nanoparticles, by using various plant materials, following the *Green Chemistry* principles;
  - preparation and characterization of nanobiomaterials based on bio-inspired membranes, chitosan, carbon nanotubes, gold and silver nanoparticles, biopolymers and conducting polymers;
  - preparation of „green” nano-biohybrids with antioxidant, antimicrobial and anti-cancer potential;
- **Biomimetic systems** (Artificial cell membranes, lipid membranes, biological nanosystems, and soft materials):
  - photophysical studies on biological systems, artificial lipid membranes (liposomes); improvement of the protocol for obtaining small unilamellar stable liposomes with chlorophyll a (Chla); finding spectral criteria to monitor the stability of liposomes (using Chla as a spectral marker);
  - spectro-electrochemical techniques with biological applications;
  - simulation and quantification of oxidative stress on plant DNA and on models of cell membranes (liposomes) marked with chlorophyll a;
  - photo-oxidative stress studies on biomimetic membranes – studies by optical methods; investigation of the effects of UV irradiation on different types of liposomes (with antioxidants incorporated in artificial lipid bilayers);
  - spectral monitoring the effects of local anesthetics and other agents on the biomimetic membranes; biophysical studies of the flavonoid insertion in artificial lipid bilayers marked with chlorophyll a;
  - biophysical studies on liposomes/ligand and DNA/ ligand interaction for *drug delivery system* applications.
- **Extraction and purification of phytopigments** (chlorophylls, carotenoids);
- **Preparation and characterization of plant extracts**;
- **Oxidative stress studies on biomimetic systems and on human head hair.**
- Modern methods of biomolecule characterization (DLS, UV-Vis, FT-IR ATR, EPR, fluorescence spectroscopy, gel electrophoresis); evaluation of pro- and antioxidant properties of biomolecules and plant active principles (chemiluminescence technique).
- **Optical microscopy of biological structures**

2003 - 2009

**Assistant professor**

University of Bucharest – Faculty of Physics, Department of Electricity, Solid State and Biophysics, Bucharest-Magurele, PO Box: MG 11, 077125 Romania, <http://www.fizica.unibuc.ro/fizica/>

**Type of business or sector:** Higher education, Academic activity, Scientific research activity, Didactic and research

Main activities and responsibilities

**Teaching activities:**

Management and organization of courses, seminars and laboratory work supporting disciplines: Biochemistry, Bioenergetics, Genetics, Proteomics, Experimental Techniques in Biophysics, Advanced Techniques in Biophysics, Special Problems in Biophysics, Bioconversion Systems of Energy, Introduction to Biophysics, Biological Membrane Transport, Biophysical systems and processes, Biophysics Basics; Bionic and prosthetics

**Tutorship: License and Master Diploma in Biophysics**

**Research activities - Main Topics of interest**

- Quantification of oxidative stress in biosystems;
- Improving the protocol to obtain small unilamellar liposomes with chlorophyll *a*;
- Spectral criteria performing to monitor the stability of chlorophyll *a*-loaded liposomes;
- Simulation and quantification of the effects of oxidative stress on artificial biomembrane models labelled with chlorophyll *a*

2001 - 2003

**Chemical engineer**

SC TECSA BUSINESS SRL

Bd Decebal nr. 14, Bl. S6, Sc. 4, Ap 69, Sector 3, Bucharest, Romania, Tel.: 021.326.76.68, Fax: 021.326.76.67, e-mail: [office@tecsa.ro](mailto:office@tecsa.ro)

**Type of business or sector:** Production

Main activities and responsibilities:

Implementation of the whole process of Romanian and foreign employment of staff: work visas, work permits, residence permits; Carrying out translations of specific documents; Promoting the company's products; The food quality management; Quality management system documents (expert reports, certificates/ test reports); Management of imports of food and work equipment, raw materials.

1999 - 2001

**Consultant engineer**

Central Laboratory for Quality of Seeds and Planting Material, Electrophoresis Department, 10 Aleea Sandu Aldea rd, Bucharest, Romania

**Type of business or sector:** Biochemical analysis, seeds quality testing

Main activities and responsibilities:

Varietal identification and assessment of genetic purity of crops in our country and from import, using biochemical markers

1998-1999

**Scientific researcher**

Institute of Physical Chemistry "I.G.Murgulescu", Oxide Compounds and Materials Science Laboratory, 202 Splaiul Independentei St., P.O.Box 194, 060021 Bucharest - 12, Romania

**Type of business or sector:** Scientific research

Main activities and responsibilities:

Scientific research activity; physico-chemical characterization of biomolecules and polycomponent oxide systems (chemiluminescence technique, spectral methods: UV-Vis, IR, EPR); translation of documents from German, MATHCAD programming.

1995/1998

**Scientific Researcher**

Research Institute for Cereals and Industrial Crops – Fundulea, Romania, Biochemistry and Molecular Genetics Laboratory

915200 Fundulea, 1 Nicolae Titulescu Street, Călărași, ROMANIA

**Type of business or sector:** Scientific research

Main activities and responsibilities:

- Molecular Genetics
- Evaluation of genetic diversity of wheat, corn and sunflower germplasm using molecular markers (RAPD, DAF, AFLP, RFLP);
- The development of methods for extraction, purification and amplification of plant DNA;
- Purity testing of DNA extracts by spectral and electrophoretic methods.
- Finding of resistant genetic sources for use in breeding to reduce disease impact in cereals, industrial and forage crops.

## Education and training

Dates	1.10.2010 – 31.03.2013
Title of qualification awarded	<b>Postdoctoral fellow in Physics</b> Project: <i>Artificial biomembrane models for biophysical studies and bionanotechnological applications</i> (strategic grant POSDRU/89/1.5/S/58852, Project „Postdoctoral programme for training scientific researchers” cofinanced by the European Social Found within the Sectorial Operational Program Human Resources Development 2007 – 2013)
Principal subjects/occupational skills covered	Preparation and characterization of new bionanostructures based on biomimetic membranes for biomedical or biotechnological applications
Name and type of organisation providing education and training	University of Bucharest – Faculty of Physics, Department of Electricity, Solid State and Biophysics, Bucharest-Magurele, PO Box: MG 11, 077125 Romania, <a href="http://www.fizica.unibuc.ro/fizica/">http://www.fizica.unibuc.ro/fizica/</a>
Dates	1999 - 2008
Title of qualification awarded	<b>Doctor in Chemistry</b> (Project: <i>Simulation and quantification of oxidative stress effects on some essential components of biological systems</i> )
Principal subjects/occupational skills covered	<ul style="list-style-type: none"><li>- Evaluation of pro-and antioxidant properties of biomolecules and active principles</li><li>- Modern methods for characterization of biomolecules (electrophoresis, spectral techniques: UV-Vis, IR, fluorescence, EPR);</li><li>- The study of oxidative stress effects on plant DNA and on some purine and pirimidine derivatives by combination of spectral techniques with chemiluminescence method;</li><li>- The use of liposomes with Chla to study the interaction of different agents (antioxidants; anesthetics) with artificial lipid bilayers at molecular level;</li><li>- Quantification of oxidative stress effects by spectral criteria development and by evaluation of pro-and antioxidant capacity in order to monitor the oxidative degradation of artificial lipid membranes with Chla incorporated;</li><li>- The stability study of different Chla liposome systems subjected to <i>in vitro</i> oxidative stress simulation;</li><li>- <i>Photo-oxidative stress on model membranes – studies by optical methods</i>, Investigation of the effects of UVA and UVB simultaneous irradiation on different types of liposomes with antioxidants incorporated in lipid bilayers.</li></ul>
Name and type of organisation providing education and training	University POLITEHNICA of Bucharest, Faculty of Applied Chemistry and Materials Science, Department of Applied Physical Chemistry, 1 Polizu Str, 011061, Bucharest, Romania supervisor: Prof. dr. Aurelia Meghea, e-mail: <a href="mailto:a_meghea@chim.upb.ro">a_meghea@chim.upb.ro</a> , <a href="mailto:a_meghea@gmail.com">a_meghea@gmail.com</a> , <a href="mailto:aurelia.meghea@upb.ro">aurelia.meghea@upb.ro</a> , Tel: +4021 3154193 Fax: +4021 3154193
Level in national or international classification	ISCED 8; Sub-category 840
Dates	1997 - 1998
Title of qualification awarded	<b>International Atomic Energy Agency (IAEA) training, specialization in Molecular Genetics and Plant Breeding field, Sunflower Laboratory, INRA- Montpellier, France</b> (supervisor: Prof.dr. Andre Berville; e-mail: <a href="mailto:berville@supagro.inra.fr">berville@supagro.inra.fr</a> , <a href="mailto:berville@ensam.inra.fr">berville@ensam.inra.fr</a> )

Principal subjects/occupational skills covered	<p><b>Molecular Genetics and Plant Breeding</b></p> <ul style="list-style-type: none"> <li>- improving methods for extraction, purification, hydrolysis and quantification of sunflower DNA; evaluation the genetic diversity of the existing germplasm of wheat, corn and sunflower, using modern techniques of molecular genetics: molecular marking by RFLP (Restriction Fragment Length Polymorphism) and RAPD (Random Amplified Polymorphic DNA); RAPD markers detection of sunflower introgression lines of <i>H. rigidus</i>, <i>H. tuberosus</i>, <i>H. resinosus</i> and <i>H. mollis</i>;</li> <li>- techniques of DNA amplification by radioactive PCR (Polymerase Chain Reaction);</li> <li>- electrophoretic migration of PCR amplification products by polyacrylamide gel techniques using AFLP (Amplification Fragment Length Polymorphism) and DAF (Amplified DNA Fingerprinting)</li> </ul>
Name and type of organisation providing education and training	<b>Sunflower Laboratory, INRA- Montpellier, France</b>
Dates	1995 - 1996
Title of qualification awarded	<b>MASTER of Science</b> in Applied Thermodynamics and Electrochemistry Dissertation thesis: <i>Spectral characterization of DNA extracts of wheat, maize and sunflower</i> <b>the best student (average mark 10 of 10)</b>
Principal subjects/occupational skills covered	Physical Biochemistry, Chemical Physics, Electrochemistry
Name and type of organisation providing education and training	University "Politehnica" of Bucharest - Faculty of Chemistry, Bucharest, Romania
Level in national or international classification	ISCED 7; Sub-category 740
Dates	1990 - 1995
Title of qualification awarded	<b>Engineer, Biochemical Engineering specialization</b> - diploma project: <i>Interactions between electromagnetic radiation and biologically active substances</i> <b>- award for the best results (average mark 9.64 of 10) for the first year of study (1990-1991)</b>
Principal subjects/occupational skills covered	<b>Biochemical engineering specialization</b> Chemistry, Physical Chemistry, Biochemistry, Physical Biochemistry, Recombinant DNA techniques, Chemical Engineering, Biochemical Engineering, Bioreactors, Microbiology, Cellular Biology, Enzymology, Physics, Mechanics, Mathematics, Informatics etc. Member of the research group in Physical Chemistry led by Prof.dr.chem. Aurelia Meghea.
Name and type of organisation providing education and training	University "Politehnica" of Bucharest - Faculty of Chemistry, Bucharest, Romania
Level in national or international classification	ISCED 6; Sub-category 640
Dates	1986 - 1990
Title of qualification awarded	<b>Baccalaureate (in Mathematics-Physics)</b>
Principal subjects/occupational skills covered	Basic education, specialization in Mathematics, Informatics, Physics, Chemistry - member of the scientific teams of mathematics, physics, chemistry - award-winning participant in the national Olympiads of chemistry (Arad, 1990, Turnu-Magurele 1986) and physics (Baia-Mare, 1988).
Name and type of organisation providing education and training	"B.P.Hasdeu" Mathematics-Physics Theoretical High School, Buzau, Romania, <a href="http://bphasdeu.ro">http://bphasdeu.ro</a>
Level in national or international classification	ISCED 5; Sub-category 540

## Summer Schools and training courses

- 1) Research training at the Research Centre for Environmental and Ecological Technology, UPB - CPMT (01.08.2012 - 01.10.2012). Research Topic: "Bionanomaterials with antioxidant properties", coordinator: Prof. Aurelia Meghea.
- 2) Training course in the field of instrumental analysis: "Atomic absorption spectroscopy and elemental analysis", Analytik Jena Romania SRL (5-9.11.2012, Bucharest, Romania).
- 3) Course "Approches pluridisciplinaires de la thérapie génique: du transfert de gène à la clinique", University Paul Sabatier, Toulouse, France (12-16 July 2004).
- 4) FEBS Specialization course: "Recombinant DNA Technology and Protein Expression", Bucharest, Romania (September 2003).
- 5) ICTP-INFM: "New Frontiers in Nano-biotechnology: Monitoring Protein Function with Single - protein Resolution", The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (14-19 July 2003).
- 6) "Genes, Genomics and the Development of the Nervous System Function", The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (July 14-August 1, 2003).
- 7) Training Course of genetic RAPD method (1 week / August 1995, Bucharest), Prof. dr. R. Koebner (John Innes Centre, UK).
- 8) Molecular Techniques Training program (1 week in December 1996, Bucharest, Romania), Prof. dr. P. Gresshoff, IAEA expert (University of Tennessee, USA).
- 9) Tutorial: "Mutagenesis in sunflower" (2 weeks in April 1997, Bucharest), Prof. dr. H. Brunner (IAEA expert Vienna, Austria).
- 10) Tutorial: "AFLP, microsatellites Techniques" (2 weeks in July 1997), Prof. dr. Steven Knapp (University of Oregon, USA).

## Fellowships

**5 research fellowships** as principal investigator:

**1 Postdoctoral fellowship in Physics:** Project: *Artificial biomembrane models for biophysical studies and bionanotechnological applications* (strategic grant POSDRU/89/1.5/S/58852, Project „Postdoctoral programme for training scientific researchers” cofinanced by the European Social Found within the Sectorial Operational Program Human Resources Development 2007 – 2013),

**4 fellowships:** **1)** "Approches pluridisciplinaires de la thérapie génique: du transfert de gène à la clinique", University Paul Sabatier, Toulouse, France (12-16 July 2004); **2)** ICTP-INFM: "New Frontiers in Nano-biotechnology: Monitoring Protein Function with Single - protein Resolution", The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (14 to 19 July 2003) and "Genes, Genomics and the Development of the Nervous System Function in" The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy (July 14-August 1, 2003). **3)** 1997/1998: **IAEA (International Atomic Energy Agency) Fellowship: Research in Molecular Genetics and Plant Breeding** (1997-1998), Sunflower Laboratory, INRA-Montpellier, France (coordinator: Prof. André Berville; [berville@supagro.inra.fr](mailto:berville@supagro.inra.fr), [berville@ensam.inra.fr](mailto:berville@ensam.inra.fr)); **4)** fellowship *FEBS Special Meeting*, 45th ICBL, Ioannina, Greece (May 2004).

## PERSONAL SKILLS

Mother tongue(s)

Romanian

Other language(s)

Self-assessment

European level (\*)

French

English

German

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user

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

**Social skills and competences**

Team spirit and good communication skills gained through my experience as a researcher and as a teacher.  
 Good ability to adapt to multicultural environment, gained through my experience abroad (training, fellows, national and international conferences).  
 Good ability to cooperate in a team.  
 I am a serious, calm and friendly person, easy relating with others, with an equilibrate style in relationships.

**Organisational / managerial skills and competences**

**Vice-President of Biophysics and Medical Physics Section of the Romanian Physical Society**  
**Coordinator of Biophysics program at Faculty of Physics, University of Bucharest.**  
**Member of the Council of Department of Electricity, Solid State Physics and Biophysics, Faculty of Physics, University of Bucharest (2016-2019).**  
**Member of Organizing Committees of the 21 International Conferences (see on the next page)**

I am a well-organized person, able to work in a programmed way with defined tasks and deadlines.  
 Capacity to coordinate the multidisciplinary scientific research work.  
 As a teacher (2003-present), I coordinated more than 100 licence & dissertation thesis and participated in the coordinating committee of more than 15 doctoral works.  
 I organized biochemistry and general chemistry laboratories in the current job.  
 I organized biochemistry laboratories in various research institutions.  
 I have trained scientists and engineers, in biochemistry and molecular genetics.

**Technical skills and competences**

Ability to operate on UV-Vis and FTIR-ATR spectrophotometers; fluorimeters; chemiluminometers; spectrophotofluorimeters; DLS equipment (Nanosizer); electrophoresis equipments; PCR Thermocycler (PCR Machine/ DNA Amplifier); ultrasonic equipments; equipment for artificial cell membranes preparation; optical microscopes; conductometers; computer-assisted teaching PHYWE systems and other laboratory equipments (centrifuges, pH-meters, ovens, mechanical and magnetic stirrers, apparatus for distilled and deionized water preparation, etc.).

**Digital competence****SELF-ASSESSMENT**

Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

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

**European Computer Driving Licence, ECDL****Computer skills and competences**

- good command of office suite (word processor, spread sheet, presentation software, Excel, Access, PowerPoint, Internet Explorer)
- good command of photo editing software gained as an amateur
- good command of Microcal Origin, GPES under Windows, programming (Mathcad, Pascal, BASIC, Fortran)

**Artistic skills and competences**

Literature, arts, music; painting

**Other skills and competences**

Hobby: travels

Review panels

**Reviewer at 32 international journals:**

*Nanomaterials (MDPI); Materials (MDPI); Molecules (MDPI); Polysaccharides (MDPI); Coatings (MDPI); Plants (MDPI); Fibers (MDPI); Sensors (MDPI); Polymers (MDPI); Surfaces (MDPI); Processes (MDPI); Plant Cell, Tissue and Organ Culture (PCTO); Materials Chemistry and Physics (MATCHEMPHYS); Analytical Letters; Process Biochemistry; Current Drug Delivery; Separation and Purification Technology (SEPPUR); Journal of Optoelectronics and Advanced Materials (JOAM); Optoelectronics and Advanced Materials – Rapid Communications (OAM-RC); Journal of Photochemistry & Photobiology, B: Biology (J PHOTOCH PHOTOBIO B); Analytical Methods (Anal. Methods); Saudi Pharmaceutical Journal (SPJ); Materials Research Innovations (MRI); European Food Research and Technology (EFRT); International Journal of Advance Agricultural Research (IJAAR); Surfaces and Interfaces (SURFIN); Journal of Research in Environmental Science and Toxicology (JREST); African Journal of Food Science (AJFS); African Journal of Engineering Research (AJER); Issues in Biological Sciences and Pharmaceutical Research (IBSPR); Journal of Agricultural Biotechnology and Sustainable Development (JABSD); Acta Ecologica Sinica (AES).*

Editorial boards

**Lead Editor – Special Issue: Green Design of Bio-Multifunctional Materials, Journal of Nanomaterials** (<https://www.hindawi.com/journals/jnm/si/163672/>)

**Member of Reviewer Board of the journal Materials (MDPI):**

[https://www.mdpi.com/journal/materials/submission\\_reviewers](https://www.mdpi.com/journal/materials/submission_reviewers)

**Member of Reviewer Board of the journal Nanomaterials (MDPI):**

[https://www.mdpi.com/journal/nanomaterials/submission\\_reviewers](https://www.mdpi.com/journal/nanomaterials/submission_reviewers)

**Member of Editorial Board of the journals:**

**Nanoscience and Nanometrology (since 2016)**

<http://www.sciencepublishinggroup.com/journal/editorialboard?journalid=356>

**Journal of Agricultural Biotechnology and Sustainable Development (JABSD) (2014-2017)**

<http://www.academicjournals.org/JABSD/Editors.htm>

**Member of International Scientific and Technical Committee & Editorial Review Board of World Academy of Science, Engineering and Technology**

<https://publications.waset.org/profile/7469633354>



**Member of Organizing Committees of the International Conferences**

**Member of Organizing Committees of the International Conferences:**

- 1) 14th Symposium with international participation, "NOVEL TECHNOLOGIES AND ECONOMIC DEVELOPMENT", Faculty of Technology, Leskovac, Serbia, October, 22-23, 2021.  
<http://www.tf.ni.ac.rs/novosti/1029-14th-symposium-with-international-participation>  
(Plenary lecture: "MULTIFUNCTIONAL PHYTOGENIC SILVER NANOPARTICLES";  
<http://www.tf.ni.ac.rs/novosti/1029-14th-symposium-with-international-participation>)
- 2) International Conference and Expo On Proteomics and Metabolomics 2020, Montreal, Canada (PROTEOMICS2020) (<http://outlookconferences.com/proteomics-2020/committee.php>)
- 3) Global Congress and Expo on Medical Imaging and Case Reports, April 20-21, 2020, Vancouver, Canada (Medimaging-2020) <https://scientificfederation.com/medimaging-2020/committee.php>
- 4) 6th Annual International Workshop on Materials Science and Engineering (IWMSE 2020) (<http://www.iwmse2020.org/?op=committee>)
- 5) 8<sup>th</sup> International Conference on Material Science and Engineering 2020 (ICMSE 2020)
- 6) Materials Science World Forum, December 01-02, 2020, Bucharest, Romania, (MSWF-2020) <https://www.continuumforums.com/materials-science-congress/committee.php>
- 7) 5th Annual International Workshop on Materials Science and Engineering (IWMSE 2019)
- 8) International Conference on Food and Biosystems Engineering (I.C. FaBE 2019)
- 9) 13th Symposium with international participation, "NOVEL TECHNOLOGIES AND ECONOMIC DEVELOPMENT", Faculty of Technology, Leskovac, Serbia, October, 18-19, 2019.
- 10) 4th Annual International Workshop on Materials Science and Engineering (IWMSE 2018)
- 11) The 2018 International Conference on Environmental Science and Sustainable Energy (ESSE2018)
- 12) The 2018 International Conference on Mechanical Engineering and Materials (ICMEM2018)
- 13) The 2018 International Conference on Material Engineering (ICME2018)
- 14) The 6<sup>th</sup> Annual International Conference on Material Science and Engineering (ICMSE2018)
- 15) The 2017 International Conference on Environmental Science and Sustainable Energy (ESSE2017)
- 16) 3rd Annual International Workshop on Materials Science and Engineering (IWMSE 2017)
- 17) The 2017 International Conference on Electronic Engineering and Wireless Communication (EEWC2017)
- 18) 5th Annual International Conference on Material Science and Engineering (ICMSE2017)
- 19) The 2017 International Conference on Environment Pollution and Human Health (EPHH2017)
- 20) International Conference on Materials Science (ICMS2015)
- 21) International Conference on Advance Materials Research and Application (AMRA 2014)

**Memberships**

**Scientific Affiliation:**

Member of the Romanian Society of Physics (RSP)

**Vice-President of Biophysics and Medical Physics Section of the Romanian Physical Society**

Member of the International Society for Optics and Photonics (SPIE)

Member of the Romanian Society of Pure and Applied Biophysics (RSPAB)

Member of the Romanian Society of Biochemistry and Molecular Biology (RSBMB)

**Publications**

*Scientific publications:*

**75 scientific papers** (of which **59** in ISI journals; **60** papers as first or corresponding author)

**3 Books & 2 Book Chapters**

**Conferences**

**78** communications at international conferences + **39** communications at national conferences

**Honours and awards**

**26 Awards:**

**3** awards at international conferences (2019, 2014; 2012);

**20** awards UEFISCDI (CNCSIS) for scientific publications (2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2010, 2008);

**2** awards from University of Bucharest, UB (2009); **1** prize for the best student (1990);

**1** mention at Romanian National Chemistry Olympiad (1986).

**Citations**

More than 500 citations *cumulated from 3 databases: ISI Web of Science, Scopus & Google Scholar.*

**H-index**

**H-index = 14 (ISI Web of Science); h-index=13 (Scopus); h-index=12 (Google Scholar);**

**i10-index = 15**

## Projects

Research projects: Project Leader in 6 projects and 2 grants, and team member in other 14 research projects

- 1) *Applications of Neutron diffraction and Small angle scattering in modern investigation of bio-based (advanced multifunctional bionanosystems) and inorganic (Romanian rocks) materials*; Project IUCN No.38 (IUCN ORDER no.365/11.05.2021), Theme No. 04-4-1142-2021/2025 (2021, **Project Leader**);
- 2) *Structural investigation of bioactive materials containing "intelligent" biomolecules (DNA), "green" metallic nanoparticles, and artificial cell membranes*, Project IUCN No.68 (IUCN ORDER no.365/11.05.2021), Theme No. 04-4-1141-2020/2022 (2021, **Project Leader**);
- 3) *Development of the laboratory infrastructure for structural investigation of nanomaterials and biopolymers*, Grant IUCN No.19 (IUCN ORDER no.367/11.05.2021), Theme No. 04-4-1142-2021/2025 (2021, **Grant Leader**);
- 4) *Obtaining and investigations of the new biocomposite materials with bio-medical applications by means of neutron scattering and complementary methods*, Project IUCN No.43 (IUCN ORDER no.365/11.05.2021), Theme No. 04-4-1142-2021/2025 (2021, team member);
- 5) *Structural investigation of drug delivery systems consisting of biohybrids based on DNA, biomimetic membranes, "green" nanometals and therapeutic agents*, Project IUCN No. 75 (IUCN ORDER no. 269 /20.05.2020), Theme No. 04-4-1141-2020/2022 (2020, **Project Leader**);
- 6) *Neutron diffraction and Small angle scattering applications in geosciences (Romanian garnet peridotites, Foltea, Sebeshel formation) and biosciences (supramolecular bio-based nanostructures)*, Project IUCN No.48 (IUCN ORDER no. 269 / 20.05.2020), Theme No. 04-4-1121-2015/2020 (2020, **Project Leader**);
- 7) *Development of the infrastructure laboratory for investigating the structure of complex biomolecules*, Grant IUCN No. 17 (IUCN ORDER no. 267 / 20.05.2020), Theme No. 04-4-1121-2015/2020 (2020, **Grant Leader**);
- 8) *Obtaining and investigations of the new biocomposite materials with bio-medical applications by means of neutron scattering and complementary methods*, Project No. 33/2020 (IUCN ORDER no. 269/20.05.2020) of JINR–Romania collaboration (Theme No. 04-4-1121-2015/2020) (2020, team member).
- 9) *The use of neutron diffraction and small angle scattering in geosciences (strong deformed gneisses and granites) and biology (hybrid bio-nano entities)*, Project IUCN No. 40 (IUCN ORDER no. 397 / 27.05.2019), Theme No. 04-4-1121-2015/2020 (2019, **Project Leader**);
- 10) *Investigations of biocomposite materials with bio-medical applications by means of neutron scattering and complementary methods*, Project IUCN No. 44/ 2019 (IUCN ORDER no. 397 / 27.05.2019), Theme No. 04-4-1121-2015/2020 (2019, team member);
- 11) *Green bio-design of 3D hybrid bioarchitectures with applications in biomedical field*, Project IUCN No. 48/ JINR Order No. 322/21.05.2018, Theme No. 04-4-1121-2015/2020 (2018, **Project Leader**);
- 12) *Structural and spectrophotometric characterization of biogenic systems*, Project IUCN No. 46, Theme 04-4-1069-2009/2014 (2014 – 2015, team member);
- 13) *Synthesis, screening and controlled release of some novel thiazole, bithiazole and thiazolidin-4-one compounds with antioxidant, antiproliferative and antimicrobial activity*, 210/2014 Project no.: PN-II-PT-PCCA-2013-4-2075 (2014–2017, team member);
- 14) *Bio-active lipid nanocarriers for co-encapsulation of selective vegetal extracts with enhanced pharmaco-cosmetic performance*, Project IDEAS, PN-II-ID-PCE-2012-4-0111, (2012-2016, team member);
- 15) *"Biophysical studies on hybrid systems composed of carbon nanotubes and artificial lipid membranes"* UB project Nr. 1120/06.06.2012 (June 2012-August 2013, team member);
- 16) Project PNII "Biomaterials for applications in human therapy based on self-assembled lipids in presence of carbon nanotubes and conducting polymers", acronym: BATUBLAPNCP, PC, Nr. 3725 (2009- 5/12/2011, team member);
- 17) *"Fluorescent nanostructures based on complex combinations linked to DNA for optoelectronic devices"*, CEEX, ET 1.3 (2006-2007, team member);
- 18) *"Preparation of supported lipid membranes with liposomes using chlorophyll; studies for biotechnological applications"* -Grant CNCSIS Nr. 34699/2004 (2004-2006, team member);
- 19) *"Testing the UV protection capacity of some compositions and products based on natural plant extracts"* -CNCSIS AT, Code 50 (2003-2005, team member);
- 20) *"Structural and functional changes of immune system induced by gamma irradiation components"* -Contract CERES Nr.3-100/2003 (06.11.2003-28.04.2005, team member);

- 21) Implementation of Molecular Techniques in Sunflower Breeding to Improve Oil Quality and Diseases Resistance” Project: IAEA ROM /5/007/D2(1995/1998, team member);
- 22) “Modern spectral methods of characterization and investigation of the structure of DNA extracted from plants and some cellular biosystems” -MCT project, C376+381/B10/1997 (1995/1998, team member).

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# Marcela-Elisabeta Barbinta-Patrascu

## - List of publications -

### Papers published in ISI Journals:

1. **Marcela-Elisabeta Barbinta-Patrascu**, Mihaela Bacalum, Vlad-Andrei Antohe, Sorina Iftimie, Stefan Antohe, Bio-nanoplatinum phyto-developed from grape berries and nettle leaves: potential adjuvants in osteosarcoma treatment, *Rom.Rep.Phys.* 74(1), 2022. (Q3; **IF<sub>2020</sub>= 1.785**; **AI<sub>S</sub><sub>2020</sub>= 0.268**)
2. **Marcela-Elisabeta Barbinta-Patrascu**; Yulia Gorshkova; Camelia Ungureanu; Nicoleta Badea; Gizo Bokuchava; Andrada Lazea-Stoyanova; Mihaela Bacalum; Alexander Zhigunov; Sanja M. Petrovič, Characterization and Antitumoral Activity of Biohybrids Based on Turmeric and Silver/Silver Chloride Nanoparticles, *Materials* 14(16), 4726, 2021. WOS:000689574500001; <https://doi.org/10.3390/ma14164726> (Q1; **IF<sub>2020</sub>= 3.623**; **AI<sub>S</sub><sub>2020</sub>=0.597**)
3. Gorshkova, Y.; **Barbinta-Patrascu, M.-E.\***; Bokuchava, G.; Badea, N.; Ungureanu, C.; Lazea-Stoyanova, A.; Răileanu, M.; Bacalum, M.; Turchenko, V.; Zhigunov, A.; Juszyńska-Gałązka, E. Biological Performances of Plasmonic Biohybrids Based on Phyto-Silver/Silver Chloride Nanoparticles. *Nanomaterials* 11(7), 1811, 2021. <https://doi.org/10.3390/nano11071811>. WOS:000676478400001 (Q1; **IF<sub>2020</sub>= 5.076**; **AI<sub>S</sub><sub>2020</sub>=0.759**)
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7. S. Savić, S. Petrović, **M. E. Barbinta-Patrascu\***, B. Danilović, L. Stanojević, S. Savić, Z. Petronijević, Baobab fruit shell: biophysical investigations of bioactive compounds and minerals, *Romanian Journal of Physics* 66(1-2), 701, 2021. (Q3; **IF<sub>2020</sub> = 1.888**; **AI<sub>S</sub><sub>2020</sub> = 0.194**)
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14. Irina Zgura, Nicoleta Preda, Monica Enculescu, Lucian Diamandescu, Catalin Negrila, Mihaela Bacalum, Camelia Ungureanu, **Marcela Elisabeta Barbinta-Patrascu**, Cytotoxicity, Antioxidant, Antibacterial, and Photocatalytic Activities of ZnO–CdS Powders, *Materials* 13(1), 182, 2020; WOS:000515499300182; [doi:10.3390/ma13010182](https://doi.org/10.3390/ma13010182). (Q1; **IF<sub>2020</sub>= 3.623**; **AI<sub>S</sub><sub>2020</sub>=0.597**)
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