

PERSONAL INFORMATION **Monica Baia**



PROFESIONAL EXPERIENCE

- 02/2023 – present **Professor**
Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
Educational and research activities
- 03/2008 – 02/2023 **Associate Professor**
Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
Educational and research activities
- 08/2014 – present **Senior Researcher**
Babes-Bolyai University, Interdisciplinary Research Institute in Bio-Nano-Sciences, Cluj-Napoca (Romania)
Research activities
- 10/2012–06/2014
10/2008–10/2010 **Maternity leave**
- 10/2003–02/2008 **Lecturer**
Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
Educational and research activities
- 10/1999–02/2003 **University research assistant**
Julius Maximilians University, Institute of Physical Chemistry, Würzburg (Germany)
Educational and research activities

OTHER PROFESIONAL EXPERIENCE

- 04/2020-07/2020 **Interim-dean**
Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
Administrative work
- 01/2019-04/2020 **Vice-dean**
Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
Responsible with the research activity of the faculty, working with the student's leadership, administrative activities
- 10/2018–Present **Member of the Council of the Doctoral School of the Faculty of Physics**
Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
Administrative work

EDUCATION AND TRAINING

- 08/2013–Present **PhD supervisor / Habilitation**
Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
- 01/10/2005–30/06/2006 **Post-doctoral senior researcher**
Friedrich-Schiller University, Institute of Physical Chemistry, Jena (Germany)

Curriculum vitae

03/2005-05/2005	Invited visiting researcher Friedrich-Schiller University, Institute of Physical Chemistry, Jena (Germany)
01/10/1999–28/02/2003	PhD in Natural Sciences (Dr. rer. nat.) Julius Maximilians University, Institute of Physical Chemistry, Würzburg (Germany)
01/1999–04/1999	Erasmus-Socrates master student Julius Maximilians University, Institute of Physical Chemistry, Würzburg (Germany)
10/1998–06/1999	Master Degree in Physics, Atomic Physics Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
10/1997–06/1998	Master Degree in Physics, Biophysics and Medical Physics Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)
10/1993–06/1997	Degree in Physics Babes-Bolyai University, Faculty of Physics, Cluj-Napoca (Romania)

PERSONAL SKILLS

Mother tongue(s) Romanian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	B2
German	B2	B2	A2	A2	B1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills Good communication skills gained through my experience as professor and as a leader or member in different research teams; involvement in writing and running joint projects

Organisational / managerial skills Handling the management of projects both in term of people and budget, supervising doctoral, master and bachelor thesis.

Member of the Organizing Committee of the 1st, 2nd, 3rd and 4th international Conference on Advanced Spectroscopies on Biomedical and Nanostructured Systems, (Cluj-Napoca 2004, 2006, 2008, 2011) and 31st European Congress on Molecular Spectroscopy 26 - 31 August, 2012, Cluj- Napoca, Romania, organized by the Faculty of Physics, Babes-Bolyai University.

Digital skills Using computer, analyzing data with Origin and Excel software, processing text and images with specific software, theoretical simulations.

ADDITIONAL INFORMATION

- Honours and awards**
- IN HOC SIGNO VINCES prize of the National University Research Council (2007).
 - Certificate of Merit awarded by Babes-Bolyai University for the research activity (2006) and teaching activity (2019)
 - Excellentia Award conferred by the Babes-Bolyai University Students Council for the academic activity (2021)
 - Gold Medals received at the 16th edition of the International Exhibition of Research, Innovations and Inventions - PRO INVENT Cluj-Napoca, 21 - 23 March 2018 and at the EUROPEAN EXHIBITION OF CREATIVITY AND INNOVATION - EUROINVENT Iasi, 20-21 May 2018.
 - Special Award for Environmental Protection awarded to the Faculty of Physics and Faculty of Chemistry and Chemical Engineering of the Babes-Bolyai University for the invention presented at PRO INVENT 2018
- Memberships**
- Member of the Romanian Physical Society
 - Member of the National Council for the Recognition of University Degrees (03.2011-09.2012 and 09.2024- present)
- Editorial activity**
- Member of the Editorial Boards:

Curriculum vitae

- Catalysts, MDPI, <https://www.mdpi.com/journal/catalysts/editors>
- Spectroscopy Journal, MDPI, <https://www.mdpi.com/journal/spectroscj/editors>
- Journal of Applied and Theoretical Physics Research, <http://verizonaonlinepublishing.com/AppliedandTheoreticalPhysicsResearchEditors.aspx>
- Studia Physica UBB, <http://studia.ubbcluj.ro/serii/physica/>
- Lead Guest editor of a special issue entitled Progress and Perspectives in Visible-Light-Driven Photocatalysis, published in International Journal of Photoenergy <http://www.hindawi.com/journals/ijp/si/501047/>.
- Guest editor of a special issue
 - *Molecular Spectroscopy – An Interdisciplinary Approach*, published in Journal of Molecular Structure, Vol. 1073, 2014. <http://www.sciencedirect.com/science/journal/00222860/1073>
 - *Nanostructures and nanosurfaces for biomedical and environmental applications*, published in Asian Chemistry Letters vol. 16, no. 3 (July-Sept.) 2012. <http://asianchemistryletters.in/content1/vol-16-no-2-1>
 - *Electrochemical Applications of Carbon-Based Nanomaterials*, published in Molecules, https://www.mdpi.com/journal/molecules/special_issues/Electrochemical_Nano
 - *The Importance of Shape-Tailoring at Nano- and Micro-Levels in Catalytic and Photocatalytic Applications*, published in Catalysts, https://www.mdpi.com/journal/catalysts/special_issues/nano_micro_photo_catal.
 - *A Special Section on Carbonaceous-Containing Nanomaterials for Multi-Functional Applications*, Journal of Nanoscience and Nanotechnology, Volume 21, Number 4, April 2021. <http://www.aspbs.com/jnn/>
 - *Recent Progress in Functional Materials and Their Applications*, a special issue of Materials, https://www.mdpi.com/journal/materials/special_issues/U7GYB14GO9

Scientometric data

- Hirsch-index: 27 (Baia + Bolboaca (previous name); source WOS 10.04.2025)
- Number of publications: 130 publications (94 ISI), 4 books and 6 book chapters.
- National patent 129023/2017: Procedure of obtaining nanocomposites based on aerogel and noble metals with double functionality
- National patent application 2410-A/00737/16.11.2022: Method for obtaining composites based on polystyrene and graphene oxide functionalized with compounds containing nitrogen and phosphorus atoms acting as flame retardants.
- The total citations of the papers: 2186 citations (Baia + Bolboaca) without self-citations (WOS 29.04.2024)
- ResearcherID [C-4315-2011](https://orcid.org/0000-0001-9151-4315).

Research topics

- vibrational investigations of pharmaceuticals, photocatalysts, carbon-based nanomaterials, nanostructures for environmental and biomedical applications by Raman and IR spectroscopy, SERS.

Projects

- Manager of the following projects:
 - UBB project TP-T nr. 30944 /2007-2010/ Study of the interaction of some pharmaceutical and ecological relevant molecules with nanostructured systems in order to identify new bio-physical- chemical properties and applications, financed by UBB, 75000 lei / 20830 euro.
 - PN II RU_TE 81/2010 / New SERS based sensors for detection of water chemical pollutants, 2010-2013, financed by UEFISCDI, 571482 lei / 135067 euro
 - PN-III-P2-2.1- 589 PED/2022 / Nanocomposites based on recycled cellulose and carbon nanohorns for building materials with improved fire action resistance, 2022-2024, financed by UEFISCDI, 598795 lei / 122203 euro
 - Coordinator of the national network of the **COST BM1401** - Raman-based applications for clinical diagnostics (Raman4clinics)–Raman for clinics) 2014-2018 and **CA18225** - Taste and Odor in early diagnosis of source and drinking Water Problems (WaterTOP)

Curriculum vitae

and MC member of the project

- Mentor of Postdoctoral Fellow - project PN-III-P1-1.1-PD 32/2018 / Two-photon excited time- resolved photoluminescence imaging and spectroscopy studies on single polymer-stabilized gold nanoparticles towards their applicability as optical contrast agents and PN-III-P1-1.1-PD 159/2020/ Development of SERS-active, NIR-responsive urchin-like gold nanoagents (GNUs) for stimuli-triggered theranostic applications against hematological malignancies
- Member in the research team of 7 international research projects (COST 540- Photocatalytic technologies and novel nanosurfaces materials-PHONASUM (2006-2010), Romania-Bulgaria bilateral project - Synthesis, physico-chemical and morphological characterization and toxicity testing of TiO₂ and SiO₂ polymeric nanoparticles, with respect to their application as drug carriers) (2005-2007), Romania-Hungary bilateral project (Preparation and Characterization of Visible Light Activated Photocatalysts for Water and Air Decontamination) (2007-2009), Romania-Greece bilateral project - Efficient wastewater treatment with nanocrystalline transition metal oxides modified with noble metals and nonmetals (2012-2013), COST BM1401 -Raman-based applications for clinical diagnostics (Raman4clinics)– Raman for clinics, 2014-2018), COST Action CA17140- Cancer Nanomedicine - from the bench to the bedside-Nano2Clinic, 2018-2022, COST CA18112 - Mechanochemistry for Sustainable Industry, 2018-2022) and 17 national grants.

Teaching activities

Courses, seminars, and labs at:

Batchelor level: Spectroscopy and lasers, Biomolecular structures and biomaterials, Clean energy technologies, Optics

Master level: Biomaterials and bionanostructures

Doctoral level: Advanced methods in Atomic and Molecular Physics, Ethics and Academic integrity

