

PERSONAL INFORMATION

Sorina GARABAGIU

📍 Donat 67-103, 400293 Cluj Napoca (Romania)

☎ +40264584037, ext. 196

✉ sorina.garabagiu@itim-cj.ro

WORK EXPERIENCE

10/2011–Present

Scientific Researcher III

INCDTIM, Cluj Napoca (Romania)

- Fabrication of thin film materials (metals, oxides, semiconductors, Heusler compounds) using Pulsed Laser Deposition (PLD) technique;
- Fabrication of metal/oxides nanocomposite thin films using sputtering techniques and/or electrodeposition;
- Structural, optical and electrochemical characterization of thin film materials;
- Design of thin films thermoelectric devices;
- Fabrication of self-assembled monolayers (SAM) onto conductive substrates;
- Design of various devices used for the characterization of thin films;
- Synthesis and characterization of noble metal nanostructures with various sizes and shapes;
- Project management activities;

11/2009–09/2011

Scientific Researcher

INCDTIM, Cluj Napoca (Romania)

- Gold nanoparticles synthesis of various shapes (nano-spheres, nanorods);
- Analysis of size dependent properties of nanostructures: Localized Surface Plasmon Resonance (LSPR), Metal Enhanced Fluorescence (MEF);
- Functionalization of gold nanostructures using bio-molecules: aminoacids and proteins;
- Design of electrochemical sensors for bio-molecules, using nanoparticles modified electrodes (by Cyclic Voltammetry, Differential Pulse Voltammetry and Square Wave Voltammetry)
- Electrochemical determination of HOMO and LUMO, and optical determination of band gap for organic compounds;

12/2007–10/2009

Research Assistant

INCDTIM, Cluj Napoca

- Study of synthesis methods for noble metal nanoparticles and electrochemical detection methods for biomolecules;
- Synthesis of gold and silver nanoparticles;
- Electrochemical fabrication of porous anodic aluminium oxide, with different pore sizes;
- Electrochemical detection (cyclic voltammetry) of various metal ions using aminoacid functionalized electrodes.

EDUCATION AND TRAINING

10/2008–12/2011

PhD

Babes-Bolyai University, Faculty of Physics, Cluj Napoca (Romania)

Title of the PhD thesis: *Metallic nanostructures with applications in the detection of some bio-molecules*

10/2007–02/2009 **Master Degree in Bio-Medical Physics**
 Babes-Bolyai University, Faculty of Physics, Cluj Napoca (Romania)
 MD thesis title: *Gold nanoparticles and aminoacids*

10/2003–06/2007 **B.Sc. Physics; Medical Physics**
 Babes-Bolyai University, Faculty of Physics, Department of Biomedical Physics, Cluj Napoca (Romania)

02/2009–03/2009 **Certificat of Project Manager**
 Cluj-Napoca (Romania)

PERSONAL SKILLS

Other language(s)

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

Organisational / managerial skills

- Secondary Proposer at the COST Action Proposal OC-2020-1-24657 "European Network for Innovative and Advanced Epitaxy", OPERA
- Member of MP1308COST Action TO-BE "Towards Oxide-Based Electronics" and of Romanian Physics Society
- Member in the organizing committee of: Processes in isotopes and Molecules 2013 International Conference;
- Involved in the management activities of several research projects.

Job-related skills

Scientific papers published: 19 (according to Web of Science – see Appendix 1 for a selection), numerous participations to National and International Conferences

Number of citations (according to Web of Science, without self-citations): 198

Hirsch: 8

Researcher ID: <http://www.researcherid.com/rid/B-1602-2012>

Reviewer at: Journal of Physical Chemistry, Electrochimica Acta, Materials Research Bulletin, Materials Science and Engineering C, Materials Letters; New Journal of Chemistry

Contributor to: Wooden churches in Transylvania: Cluj and Salaj, 2017; ISBN 978-606-543-857-6.

Co-editor at: Processes in Isotopes and Molecules 2013 Conference Proceedings (AIP Conference Proceedings, vol.1565; ISBN: 978-0-7354-1193-7)

Participation to summer schools and courses:

- Technologies for Oxide Electronics School, TO-BE COST ACTION 2018, Sant Feliu de Guíxols (Catalonia, Spain) 15-17 March 2018
- TSST PLD course 2017, 6-10 June 2017, Enschede, Holland;

- Nano-Bio-Med 2013, 14-18 October 2013, ICTP, Trieste, Italy;
- 1st EBSA BIOPHYSICS COURSE on Membrane Biophysics and Lipid-Protein Interaction, June 6-11, 2010, Bordeaux-Arcachon, France;
- Introduction to Confocal Raman and Scanning Probe Microscopy Workshop, March 5-6, 2008, Cluj-Napoca, Romania;
- NANOMA 2 Summer School, August 2008, Cluj-Napoca, Romania

Digital skills

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

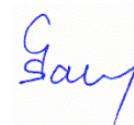
Digital skills - Self-assessment grid

- Microsoft Office
- OriginLab software, Gaussian (entry level), Gaus View (entry level), C++
- Web design (Java script - entry level), for the research projects webpages
- Photo editing (skill acquired as "amateur" photographer)

Date,

11 January 2022

Signature,



Appendix 1:
Selected papers:

Pustan M.; Birleanu C.; Merie V.; Zarbo L.; **Garabagiu S.**; Marconi D. - *Effect of deposition oxygen pressure on the properties of cuprous oxide thin films*, IOP Conference Series-Materials Science and Engineering, 724, art. no: 012052 (2020)

Garabagiu S., Borodi G., Marconi D. - *Copper-based ternary chalcogenides thin films fabricated by PLD as potential thermoelectrics*, Materials Letters, 243, 125-127 (2019)

Bilc Dl., Floare CG., Zarbo LP., **Garabagiu S.**, Lemal S., Ghosez P. - *First-Principles Modeling of SrTiO₃ Based Oxides for Thermoelectric Applications*, Journal of Physical Chemistry C, 120, 45, 5678-25688 (2016)

Marutoiu C., Bratu I., Trosan L., Neamtu C., Marutoiu VC., Pop D., Tanaselia C., **Garabagiu S.** - *Scientific investigation of the Imperial Gates belonging to the wooden church from Sacel, Turda County, Romania*, Spectrochimica Acta Part A-Molecular and Biomolecular Spectroscopy, 152, 311-317 (2016)

Garabagiu S., Pestean C., Stefan R. - *In vivo fluorescence studies of whole blood after chitosan bio-functionalized gold nanorods administration*, Journal of Luminescence, 143, 271-274 (2013)

Garabagiu S., Bratu I. - *Thiol containing carboxylic acids remove the CTAB surfactant onto the surface of gold nanorods: An FTIR spectroscopic study*, Applied Surface Science, 284, 780– 783 (2013)

Garabagiu S., Mihailescu Gh. - *Thinning anodic aluminum oxide films and investigating their optical properties*, Materials Letters, 65, 1648–1650 (2011)

Garabagiu S. - *A spectroscopic study on the interaction between gold nanoparticles and hemoglobin*, Materials Research Bulletin, 46, 2474-2477 (2011)

Garabagiu S., Mihailescu G. - *Simple hemoglobin-gold nanoparticles modified electrode for the amperometric detection of acrylamide*, Journal of Electroanalytical Chemistry, 659, 196-200 (2011)

G. Mihailescu, L. Olenic, **S. Garabagiu**, G. Blanita, E. Cosma-Fagadar, A. S.Biris - *Coupling Between Plasmonic Resonances in Nanoparticles and Porphyrins Molecules*, Journal of Nanoscience and Nanotechnology, 10 (4), 2527-2530 (2010).

L. Olenic, G. Mihailescu, S. Pruneanu, D. Lupu, A. R. Biris, P. Margineanu, **S. Garabagiu**, A. S. Biris, *Investigation of carbon nanofibers as support for bioactive substances*, J Mater Sci: Mater Med 20:177–183 (2009)

Date,

11 January 2022

Signature,

