

PERSONAL INFORMATION

Maria-Simona Guțoiu

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Sex F | Date of birth 19/07/1980 | Nationality Romania

WORK EXPERIENCE

03.06.2016-up to present

Scientific research III

„National Institute for Research and Development for Isotopic and Molecular Technologies” 67-103 Donat PO 5 Box 700, 400293, Cluj-Napoca, Romania (<http://www.itim-cj.ro/index.php?menu=1>)

Chemical synthesis of magnetic nanocomposite with different structure. Structural, microstructural and magnetic characterisation of synthesized nanoparticles.

Research and Development

01.12.2011-2016

Scientific research

„National Institute for Research and Development for Isotopic and Molecular Technologies” 67-103 Donat PO 5 Box 700, 400293, Cluj-Napoca, Romania (<http://www.itim-cj.ro/index.php?menu=1>)

Chemical synthesis of magnetic nanocomposite with different structure. Structural, microstructural and magnetic characterisation of synthesized nanoparticles.

Research and Development

19.10.2007-01.01.2010
01.07.2010 – 30.11.2011

Research assistant

„Babeş-Bolyai” University , str. Mihail Kogălniceanu, nr. 1, Cluj-Napoca, România (<http://www.ubbcluj.ro/ro/>)

Samples preparations, structural, microstructural and magnetic investigation of samples and accomplishment of tasks according to contracts provisions.
Educational activities (lab activities).
Promotion of physics discipline within different meetings.

Education
Research and Development

20.03.2006 - 18.10.2007

Lab assistant II

„George Baritiu” High School, Emil Isac Str., no. 10, Cluj-Napoca, Romania (<http://www.colegiulbaritiu.ro/>)

Preparing of educational lab resources for carrying out properly physics, chemistry and biology lab classes.

I was involved in equipping the laboratory using the financial funds received from „Ministry of Education, Research and Innovation”.

Lab related activities.

Education

EDUCATION AND TRAINING

01.10.2007 - 20.12.2011

PhD in physics

`Babes-Bolyai` University, Mihail Kogalniceanu Str., no. 1, Cluj-Napoca, Romania
Faculty of Physics

This thesis was supported by Romanian Ministry of Education, grant PNCD II 72-186/2008 - NANOMAT
Title of PhD thesis: `Structural and magnetic properties of hard/soft exchanged coupled materials`.

01.10.2006 – 29.02.2008

Master diploma in `Solid State Physics`

`Babes-Bolyai` University, Mihail Kogalniceanu Str., no. 1, Cluj-Napoca, Romania
Faculty of Physics

Subject: `Magnetic and structural properties of MnBi phase and nanocomposite materials of MnBi/αFe`.

01.10.2004 – 30.06.2005

Master diploma in : `Complex Molecular Systems`

`Babes-Bolyai` University, Mihail Kogalniceanu Str., no. 1, Cluj-Napoca, Romania
Faculty of Physics

Subject: `Edition and quantification GABA in Magnetic Resonance Spectroscopy`.

01.10.2004 – 30.06.2005

Master diploma in `Atomic and Nuclear Methods in the Environmental Study`

`Babes-Bolyai` University, Mihail Kogalniceanu Str., no. 1, Cluj-Napoca, Romania
Faculty of Physics

Subject `Positron Emission Tomography`.

01.10.1999 – 30.06.2003

Blachelor degree in `Chemistry-Physics`

`Babes-Bolyai` University, Mihail Kogalniceanu Str., no. 1, Cluj-Napoca, Romania Faculty of
`Chemistry and Chemical Engineering`

Graduation paper: `Magnetic and spectroscopic studies of metallic complex of L-glutamic acid`.

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B1

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

Communication skills

- Excellent adaptability at multicultural environment; team working proved in ERASMUS scholarships. Good communication skills proved as NUCA volunteer (animal protection).

Digital skills

Good knowledge of Microsoft Office, Kaleida, Origin, Eva.
Basic knowledge of Powder Cell, FullProf, Photoshop.

 ADDITIONAL INFORMATION

Publications

- S. Guțoiu**, E. Dorolti, O. Isnard, I. Chicinas, V. Pop
 `Magnetic and structural behaviour of Nd₂Fe₁₄B/α-Fe and (NdDy)₂Fe₁₄B/α-Fe obtained by mechanical milling and annealing`.
 JOAM Vol. 12, No. 10, October 2010, p. 2126-2131
- E. Dorolti, A. Todoran, **M.S. Guțoiu**, A.F. Takacs, I. Chicinas, F. Popa, V. Pop
 `Physical properties of bonded nanocomposite type hard-soft magnets`.
 Mater. Science Forum 672 (2011), 84-87
- V. Pop, **S. Guțoiu**, E. Dorolti, O. Isnard, I. Chicinas
 `The influence of short time heat treatment on the structural and magnetic behavior of Nd₂Fe₁₄B/α-Fe nanocomposite obtained by mechanical milling`.
 J. Alloys. Compd. 509 (2011) 9964-9969
- V. Pop, **S. Guțoiu**, E. Dorolti, C. Leostean, O. Isnard, I. Chicinas, O. Pana
 `The influence of milling and annealing on structural and magnetic behavior of Nd₂Fe₁₄B/α-Fe magnetic nanocomposite`.
 J. Alloy. Compd. 581 (2013) 821-827
- O Pana, C. Leostean, M. L. soran, M. Stefan, S. Macavei, **S. Guțoiu**, V. Pop, O. Chauvet
 `Synthesis and characterization of Fe-Pt based multishell magnetic nanoparticles`.
 J. Alloy. Compd. 574 (2013) 477-485
- **S Guțoiu**, O Isnard, I Chicinas, F Popa, A Takacs, V. Pop `The influence of milling and annealing conditions on the structural and magnetic behavior of Nd₂Fe₁₄B/alpha-Fe hard/soft magnetic nanocomposite`.
 J. Alloy. Compd. 646 (2015) 859-865
- C Leostean, O Pana, M Stefan, A Popa, D Toloman, M Senila, **S Guțoiu**, S Macavei, `New properties of Fe₃O₄@SnO₂ core shell nanoparticles following interface charge/spin transfer`.
 Applied Surface Science, 427 (2018)192-201
- M Stefan, A Popa, O Pana, C Leostean, D Toloman, D Lazar, F Pogacean, S Macavei, **S Guțoiu**, `Efficient photocatalytic removal of RhB using magnetic Fe₃O₄-SnO₂ nanocomposites containing Sn²⁺ interstitial impurities`.
 Journal of Materials Science: Materials in Electronics, 29(2018)14132-14143

Projects

I was part as the team member in several research projects:

PNCDI II 72-186/2008 – Nanocomposite magnetic materials enhanced by exchange interactions - NANOMAT

PNCDI II –71- 119/18.09.2007 – Configurations of superparamagnetic and ferromagnetic ordered nanoparticles

PNCDI II 71- 015/2007 – Soft magnetic nanocrystalline powders and materials based on Fe and Ni, obtained by mechanosynthesis . Preparation, properties, obtaining of nanocrystalline compacts for applications

PNCDI II 22-098/2008 – Reduction of the gaseous emissions with greenhouse effect using supported metal catalysts. Getting of technology, preparation, and physical-chemical characterization -REGES

PNCDI II 32-119/2008 – Getting technology, structural and electronic characterization of the supported metal catalysts with direct application in environment protection – TOCSEM

PN09-44 02 17 – Magnetic nanoparticles based on rare earth metals coupled by exchange interactions

PN2-PCE ID_ 119/2011 - Core-shell composite nanoparticles based on Fe and Pt having adjustable magnetic, dispersive and functional properties

PN16-30 02 05 – Advanced nanoparticles for production and storage of energy

PN18 03 02 03 Nanocomposite materials with applications in decontamination, nanomedicine, photovoltaic systems and storage/processing of information - IZOMOL

PN19 35 02 03 – Multifunctional magnetic materials with controllable architectures and properties with high invention potential – IZO-MOL-EA.

Dubna partnership Project 4411-4-15/17 – Investigation of self-orientation exchange in the coupling of hard / soft magnetic nanoparticles using neutron scattering techniques

Subsidiary contract No 269/08.06.2018 to the Contract TTC-ITIM ID P_40_404/105533 – Cosmetic products with photoprotective activity based on plant extracts

Teaching activities

CEEPUS teacher at NanoBioMedical Centre, Adam Mickiewicz University, Poznan, Poland - 20.06/29.06. 2014, The topic of lectures delivered: `Synthesis, structural, microstructural and magnetic characterization of hard/soft magnetic nanocomposite. Future perspective regarding chemical synthesis methods`.