

CURRICULUM VITAE

LUIZA BUIMAGA-IARINCA

PERSONAL DETAILS

Birth Oct 27, 1981, Orsova, Romania

Married with Stefan Buimaga-Iarinca. Daughter: Alessia, born in 2008.

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REFERENCES

ResearcherID: <http://www.researcherid.com/rid/B-5639-2011>

ResearchGate: https://www.researchgate.net/profile/Luiza_Buimaga-Iarinca/?ev=hdr_xprf

orcid.org/0000-0002-4600-0765

EDUCATION

2008-2011 PhD. in Physics *Physics Department of Babes Bolyai University of Cluj-Napoca, Romania*

2004-2005 MSc. in Biophysics *Physics Department of Babes Bolyai University of Cluj-Napoca, Romania*

2000-2004 BSc. in Physics *Physics Department of Babes Bolyai University of Cluj-Napoca, Romania*

WORK EXPERIENCE

2011-to date Researcher (CS III), full-time

Department of Molecular and Biomolecular Physics, National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania

2008-2011 Junior Researcher (CS), full-time

Department of Molecular and Biomolecular Physics, National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania

2008-2011 PhD. Student, part-time

Physics Department of Babes Bolyai University of Cluj-Napoca, Romania

2006-2008 Research Assistant, full-time

Department of Molecular and Biomolecular Physics, National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania

SKILLS

Computational physics / nanotechnology: Application of ab-initio methods in the study of electronic structures of organic molecules interacting with metallic surfaces (SIESTA package); Computational methods for molecular electronics development; Numerical simulation of nanostructures self-assembly on metallic surfaces; computational approach of molecule - substrate interactions and of mechanisms of inter-molecular interactions on metallic surfaces.

Computational chemistry: Molecular docking on host-guest systems (ligand-protein interactions).

Data processing and editing: C, C++, Python, Matlab, Office, Latex, Gimp, Mercury, VMD, Chimera, Xmgrace, wxMacMolPlt

RESEARCH INTERNSHIPS

November 2016 *Visiting Researcher* at the Laboratory for Micro and Nanotechnology, Paul Scherrer Institute, Switzerland, in Thomas Jung's Group.

TRAININGS

- Working training on BioLogic System offered by Remedlab to perform electrochemical measurements.
- Training on molecular deposition on surface with the Dip Pen Nanolithography - DPN 5000 System offered by NanoInk

TRAVEL GRANTS

- **European Biophysical Society** to attend The 9th EBSA European Biophysics Congress, held in Lisbon, Portugal, 13 to 17 July 2013
- **European Biophysical Society** and **Romanian Society for Pure and Applied Biophysics** to cover the accommodation at The 8th EBSA European Biophysics Congress, held in Budapest, Hungary, 23 to 27 of August 2011
- **Romanian Society for Pure and Applied Biophysics** to attend Basic Concepts, New Techniques and Application Perspective, October 1-6, 2010, Vulcan, Romania
- **Bioelectrochemical Society** to attend International Spring School Biophysics and Bioelectrochemistry for Medicine, Cisnadioara, May 6-10, 2009
- **Romanian Cultural Institute** to attend The International Autumn School for Biophysics and Medicine, Mangalia, 11-16 Oct. 2007 Research

BIBLIOGRAPHIC LIST

ARTICLES

1. C. Morari, L. Buimaga-larinca, I. Rungger, S. Sanvito, S. Melinte, and G.-M. Rignanese, "Charge and spin transport in single and packed ruthenium-terpyridine molecular devices: Insight from first-principles calculations" **Scientific Reports** 6, 31856 (2016)
2. L. Buimaga-larinca, N. Ivošević DeNardis, P.T. Vernier, A. Calborean and C. Morari, "The Effect of the Electric Field on the α -GPC Interaction with Au(111) Surface: A First Principles Study" **J. Phys. Chem. C**, 120 (18), 9740–9749 (2016)
3. Mircea Bogdan, Calin G. Floare, L. Buimaga-larinca, Cristian Morari, Adrian Pirnau, "NMR study and computational assays of meclofenamic Na salt and β -cyclodextrin inclusion complex" **J. Incl. Phenomena and Macrocyclic Chemistry** 85: 111–120 (2016)
4. A. Calborean, F. Martin, D. Marconi, R. Turcu, I.E. Kacso, L. Buimaga-larinca, F. Graur, I. Turcu "Adsorption mechanisms of L-Glutathione on Au and controlled nano-patterning through Dip Pen Nanolithography" **Materials Science and Engineering C** 57(1) 171 (2015)
5. C. Muntean, I. Bratu, N. Leopold, C. Morari, L. Buimaga-larinca, M. Purcaru "Subpicosecond surface dynamics in genomic DNA from in vitro-grown plant species: A SERS assessment" **Phys. Chem. Chem. Phys.** 17(33) 21323-21330 (2015)

6. A. Calborean, L. Buimaga-larinca, F. Graur "DFT charge transfer of hybrid molecular Ferrocene/Si structures" *Physica Scripta* 90 055803 (2015)
7. C. Tripon, C. Muntean, L. Buimaga-larinca, A. Calborean "DFT investigation of the vibrational properties of AT base pairs in the presence of Ca^{2+} and Mn^{2+} ions" *Biomedical Spectroscopy and Imaging* 4(2) 189 (2015)
8. L. Buimaga-larinca, C. Morari "Adsorption of small aromatic molecules on gold: a DFT localized basis set study including van der Waals effects" *Theoretical Chemistry Accounts* 133(7) 1502 (2014)
9. C. Morari, C. Muntean, C. Tripon, L. Buimaga-larinca, A. Calborean "DFT investigation of the vibrational properties of GC Watson-Crick and Hoogsteen base pairs in the presence of Mg^{2+} , Ca^{2+} and Cu^{2+} ions, *Mol. Mod.* 20(4) 2220 (2014)
10. L. Buimaga-larinca, C. Floare, C. Morari "DFT study of the trioxotriangulene derivatives in bulk state", *Chem. Phys. Lett* 48-52 598 (2014).
11. L. Buimaga-larinca, C. Morari "Effect of Conformational Symmetry upon the Formation of Cysteine Clusters on the Au(110)-(1x1) Surface: A First-Principles Study" *J. Phys. Chem. C* 117(39) 20351 (2013)
12. L. Buimaga-larinca, C. Morari "Adsorption of cysteine clusters on Au(110)-(1x1) surface: a DFT study" *RSC Advances* 3(5) 5036 (2013)
13. C. Stan, M. Cristescu, L. Buimaga-larinca, C. Cristescu "Investigation on series of length of coding and non-coding DNA sequences of bacteria using multifractal detrended cross-correlation analysis" *Journal of Theoretical Biology* 321 54 (2013)
14. A. Calborean, L. Buimaga-larinca "DFT simulation of vibrational properties of adenine adsorbed on gold surface: The effect of periodic boundary conditions" *Computational and Theoretical Chemistry* 993 106 (2012)
15. L. Buimaga-larinca, A. Calborean "Electronic structure of the II-cysteine dimers adsorbed on Au(111): a density functional theory study" *Phys. Scr.* 86 035707 (2012)

IN EXTENSO CONFERENCE PAPERS

16. **L. Buimaga-larinca**, A. Calborean, "Predicting The Properties Of The Lead Alloys From DFT Calculations" AIP Conference Proceedings 1700 050003 (2015)
17. H. Popeneciu, A. Calborean, C. Tudoran, **L. Buimaga-larinca** "DFT Investigation on the Electronic Structure of Faujasite" AIP Conference Proceedings 1565 67 (2013)
18. **L. Buimaga-larinca**, C. Floare, A. Calborean, I. Turcu "DFT Study On Cysteine Adsorption Mechanism On Au(111) And Au(110)" AIP Conference Proceedings 1565 29 (2013)
19. **L. Buimaga-larinca**, A. Calborean "The scaling of computational time as a function of number of processors for Quantum Monte Carlo study of CO molecule" in: A. Bot (Ed.) "2012 IEEE 5th Romania TIER 2 Federation Grid, Cloud and High Performance Computing Science (RO-LCG)" 57 (2012)
20. **L. Buimaga-larinca**, N. Tosa "DFT Study Of Cysteine Adsorption On Gold Defect Surfaces" AIP Conference Proceedings 1425 22 (2011)

SELECTED CONFERENCES

TALKS

- From computational design to molecular electronics on nanopatterned surfaces, Luiza Buimaga-larinca, Daniel Marconi, Alia Colniță, Cristian Morari, Ioan Turcu, The 16th edition of the National Seminar of Nanoscience and Nanotechnology Bucharest, Library of the Romanian Academy, June 6th 2017, Bucharest, Romania

- Electronic and transport properties of ruthenium-terpyridine as molecular device, C. Morari, L. Buimaga-larinca, 11th International Conference On Physics Of Advanced Materials (ICPAM-11), 8-14 Sept., 2016, Cluj-Napoca, Romania
- Organic Molecules – Metallic System Interaction: A DFT Approach, L. Buimaga-larinca, C. Morari, I. Turcu, IC-ANMBES 2016 – June 29-July 1, 2016, Brasov, Romania
- Assessing the computational needs for DFT calculations on atomic-scale properties of the lead alloys, L. Buimaga-larinca, A. Calborean, Fifth Romania Tier 2 Federation "Grid, Cloud & High Performance Computing Science" RO-LCG, 28-30 Oct 2015, Cluj Napoca
- Challenges in computational nanotechnology: a case study, L. Buimaga-larinca, C. Morari, F. Farcas, A. Bot, Mathematical Modeling and Computational Physics Conference, 8 - 12 July 2013, Dubna, Russia.
- The scaling of computational time as a function of number of processors for Quantum Monte Carlo study of CO molecule, L. Buimaga-larinca, A. Calborean, Fifth Romania Tier 2 Federation "Grid, Cloud & High Performance Computing Science" RO-LCG, 25-27 Oct 2012, Cluj Napoca, Romania

POSTERS

Strong electric field effects on the adsorption mechanism of phosphatidylcholine on Au(111) surface, L. Buimaga-larinca, C. Morari, A. Calborean, I. Turcu, The 10th EBSA European Biophysics Congress, Dresden, Germany, 2015.

Self-assembly of cysteine on Au(110)-(1x1): a first principles study, L. Buimaga-larinca, C. Morari, The 9th EBSA European Biophysics Congress, Lisbon, Portugal, 2013.

Electronic structure of cysteine dimers adsorbed on gold: a DFT study, L. Buimaga-larinca, C. Morari, The 9th International Conference on Physics of Advanced Materials, Iasi, Romania, 2012. - *The ICPAM-9 Sponsor's Prize for "the most original contribution presented by a young scientist"*

DFT study of cysteine adsorption on gold defect surfaces, L. Buimaga-larinca, C. Morari, N. Tosa, Procesess in Isotopes and Molecules, Cluj-Napoca, Romania, October 2011, *The "best poster" Award*

Adsorption of cysteine on gold (111) surfaces: a DFT study, L. Buimaga-larinca, C. Morari, N. Tosa, The 8th European Biophysics Congress, Budapest, Hungary, 2011.

PROFESSIONAL AWARDS

- Diploma of Excellence for Physics at the national contest "Young Researchers in Science and Engineering", 2nd edition (2016), offered by Municipality of Cluj-Napoca together with prof. Rada Mihalcea to recognize young researchers in science and engineering who, through their work, have demonstrated excellence and have made extraordinary contributions in their field of specialty.
- ICPAM-9 Sponsor's Prize for the most original contribution presented by a young scientist - "Electronic structure of cysteine dimers adsorbed on gold: a DFT study". Received at the 9th International Conference on Physics of Advanced Materials, 2012, Iasi, Romania
- Best poster Award - DFT study of cysteine adsorption on gold defect surfaces –Received at the International Conference on Processes in Isotopes and Molecules, 2011 Cluj-Napoca, Romania

OTHERS

- Referent for J. Chem. Phys, J. Mol. Struct., J Mol. Mod, J Phys Cond Mat.
- Member of Romanian Society of Physics and of Romanian Society of Pure and Applied Biophysics