PERSONAL INFORMATION

Morari Ioan Cristian

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Researcherid page: www.researcherid.com/rid/C-2131-2011
Researchgate page: https://www.researchgate.net/profile/Cristian_Morari

Sex M | Date of birth 9/10/1970 | Nationality Romanian

WORK EXPERIENCE

2006 - Senior Researcher

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

Research areas: molecule-surface interaction; surface and interface phenomena; electronic transport; characterization and design of batteries for industrial applications

2004 - 2006 Post-doctoral Researcher

Universite Catholique du Louvain, Louvain la Neuve, Belgium

Numerical simulation of transport phenomena at nanoscopic scale; theoretical molecular electronics

2001 - 2004 Research Associate

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

Theoretical investigation of molecular properties: vibrational analysis, intermolecular interaction and molecular docking

1998 - 2001 Scientic coworker

Theoretical Chemistry, FB-8, University of Siegen, Germany

PhD student: development of the FORTRAN code to be used for the simulation of time dependent scattering in chemical reactions

1996 - 1998 Research Assistant

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

Theoretical and experimental investigation of molecular properties (mainly IR and Raman spectra)

EDUCATION AND TRAINING

1998 - 2001 Doktor der Naturwissenschaften

Theoretical ChemistryDepartment, University of Siegen, Germany

- Thesis: Time dependent investigation of reactive scattering processes. Ph.D. work under the guidance of Prof. R. Jaquet

1996 - 1998 Master of Science

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

- Thesis: Adsorbtion of the hydrogen on the metals: a study using the electrostatic images method. Supervision: Prof. O. Cozar

1990 - 1994 Bachelor of Science

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

- Diploma work: Theoretical studies on Sr_2 molecule, Supervision: Prof. O. Cozar.

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

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

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user

SCIENTIFIC SKILLS

Quantum Technologies	Computational characterization of granular aluminum as superconducting qubits material; ab-initio calculations of electronic properties of molecular Qubits.
Quantum chemistry and Nanotechnology	Numerical simulation of molecular properties using the standard quantum chemistry codes. The investigations that I currently performed include: vibrational spectra, computation of electronic structures and molecular geometries. Numerical simulation of structural and electronic properties for surface, molecule-surface and interface states. Electronic structure properties and transport properties for metal-molecule-metal systems (TansSIESTA, Smeagol codes).
Solid state physics	Application of the ab-initio methods to the study of electronic structures and transport properties on nanodevices. I use both plane waves (ABINIT) and localized basis sets (SIESTA) approaches.
Energy storage	Investigation of batteries by electrochemical impedance spectroscopy (EIS). Numerical simulation of structural & redox processes in batteries (using GAMESS and SIESTA).
Programming and Numerical modeling	Development of several codes (wavepacket dynamics, post-processing codes for SIESTA). Participation to the ABINIT project. Numerical simulation of transport processes in nanostructures.

ADDITIONAL INFORMATION

Membership	European Biophysics Society Romanian Physics Society
Referent for	J. Chem. Phys, J. Mol. Struct., J Mol. Mod, Sci Rep.