Curriculum Vitae
of
Ali HOSSAIN
PhD Student, Laboratoire des Multimatériaux et Interfaces
Université de Lyon

PERSONAL INFORMATION

Ali HOSSAIN

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Sex Male | Date of birth 15/09/1992 | Nationality Bangladeshi

CAREER OBJECTIVES

To build up career in education and research.

RESEARCH INTERESTS

Materials Science, 2D Materials, 1D Materials, Materials Chemistry, Chemical Physics, Nanofabrication, Nanoengineering, Quantum Materials, and Computational Modelling.

EDUCATION AND TRAINING

From 24/09/2018 to 17/09/2020

Erasmus Mundus Master Chemical NanoEngineering

Erasmus Mundus Joint Master Degree offered by three European Universities including University of Aix-Marseille (France), Wroclaw University of Science & Technology (Poland) & University of Rome Tor Vergata (Italy).

- **1st Semester Core Courses:** Solid State Chemistry, Theoretical Chemistry, Computational Modelling, Nanoelectrochemistry, Thermodynamics & Materials Science, Organic Chemistry.
- **2nd Semester Core Courses:** Structure & Crystallography of Solids, Synthesis & Fabrication of Nanoengineering Systems, Fabrication of Smart Polymers, Engineering of Nanomachines, Biophotonics, Biomaterials & Biomedical Devices, Nanostructures in Industrial & Numerical Applications, Economics & Management.
- **3rd Semester Core Courses:** Nanoscale Synthesis Methods, Characterization of Nanoengineering Systems, Nanoscale Energy Technology Nano-Sensors and Microfluidics, Macromolecular and Supramolecular Chemistry, Nanoscale Structural Transformations and Kinetics, Probability and Statistical Methods for Modelling Engineers.
- **4th Semester:** Master Thesis Project
  Thesis Title: ***Micro-Raman investigations with surface mapping of CVD grown graphene on different substrates.***
  Institution: Photonics Micro and Nanostructures Laboratory, Frascati Research Center, ENEA, Rome in collaboration with University of Rome Tor Vergata, Italy.

From 21/11/2015 to 09/05/2017

Master of Science in Physics

Department of Physics, Faculty of Science, University of Rajshahi, Rajshahi-6205, Bangladesh.

- **Courses Studied:** Advanced Solid State Physics, Electronic Communications, Materials Science, Superconductivity, Crystallography and Spectroscopy, Advanced Reactor Physics and Thesis.
- **Thesis Title:** ***Synthesis and Characterization of FeCo Alloy Encapsulated with $CoFe_2O_4$ Nanoparticles Using Sol-gel Route and First Principles Study.***
- **Result:** 3.63 (out of 4.00)
- **Medium of Instruction:** English

From 10/01/2011 to 17/11/2015

Bachelor of Science (Honours) in Physics

Department of Physics, Faculty of Science, University of Rajshahi, Rajshahi-6205, Bangladesh.

- **Core Courses:** Electromagnetism, Vibrations and Waves, Mathematical Methods in physics-I & II, Differential & Integral Calculus, Inorganic and Organic Chemistry, Principles of Statistics, Optics, Thermal Physics, Classical Mechanics, Physical Chemistry, Computer Fundamentals & Programming, Electrodynamics, Atomic & Molecular Physics, Basic Nuclear Physics, Basic Solid State Physics, Electronics, Basic Quantum Mechanics and Relativity , Statistical Mechanics, Numerical Methods, Quantum Mechanics, Pulse and Digital Electronics, Nuclear and Particle Physics, Solid State Physics and Material Sciences, Medical and Radiation Physics, Crystallography & Spectroscopy, Reactor Physics, Non-Conventional Energy.
- **Result:** 3.43 (out of 4.00)
- **Medium of Instruction:** English

ADDITIONAL INFORMATION

Publications

1. **A. Hossain**, M. K. R. Khan, M. S. I. Sarker. A systematic computational study of electronic, mechanical, and optical properties of $Fe_{1-x}Co_x$ alloy, Journal of Physics Communications 4 (2020) 045003
2. **A. Hossain**, M. S. I. Sarker, M. K. R. Khan, M. M. Rahman. Spin effect on electronic, magnetic and optical properties of spinel $CoFe_2O_4$: A DFT study, Materials Science & Engineering B 253 (2020) 114496
3. M. S. I. Sarker, T. Nakamura, **A. Hossain**, Y. Kozawa, S. Sato. Nonlinear optical properties of Rh–Pd and Rh–Pt solid-solution alloy nanoparticles prepared by a laser-induced nucleation method in aqueous solution, OSA Continuum 2 (2019) 2891
4. **A. Hossain**, M. S. I. Sarker, M. K. R. Khan, F. A. Khan, M. Kamruzzaman, M. M. Rahman. Structural, magnetic and electrical properties of sol-gel derived cobalt ferrite nanoparticles, Applied Physics A 124 (2018) 608
5. **A. Hossain**, M. S. I. Sarker, M. K. R. Khan, M. M. Rahman. Microstructural, morphological and electrical properties of sol-gel derived $CoFe_2O_4$ nanomaterials, Journal of Physics: Conf. Series 1086 (2018) 012004

Conference Presentations

1. **A. Hossain**, M. S. I. Sarker, M. K. R. Khan. Study of Magnetic Properties of $CoFe_2O_4$ Nanoparticles (Oral presentation in 10th PhoBiA Annual Nanophotonics International Conference, PANIC-2019, Wroclaw, Poland).
2. **A. Hossain**, M. S. I. Sarker, M. K. R. Khan, M. M. Rahman. Sol-Gel Derived Microstructural, Morphological and Electrical Properties of $CoFe_2O_4$ Nanomaterials (Oral presentation in International Conference on "Physics for Sustainable Development & Technology – 2017, Department of Physics, CUET).
3. **A. Hossain**, M. K. R. Khan, M. L. Ali and M. S. I. Sarker. Investigation of Structural, Electronic, Magnetic and Optical Properties of Spinel $CoFe_2O_4$: A DFT study (Oral presentation in International Conference on Material Science & Nano-electrochemistry-2017, Department of Chemistry, University of Rajshahi).
4. **A. Hossain**, M.K. R. Khan, F. A. Khan and M. S. I. Sarker. Synthesis and Characterization of Fe-Co Nanomaterials Using Sol-Gel Process for High Density Magnetic Devices (Oral presentation in National Conference on Physics-2017, Bangladesh Physical Society).

Honours and awards

- Erasmus Mundus Scholarship by European Agency for Erasmus Mundus Joint Master Degree in Chemical NanoEngineering in 2018.
- National Science and Technology (NST) fellowship by Ministry of Science and Technology, Government of the People's Republic of Bangladesh in 2016.

Memberships

- Student membership in American Physical Society (APS).

PERSONAL SKILLS

Communication skills

- Good communication skills gained through my experience as a research student.

Mother tongue(s) Bengali

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C2
French	A2	A2	A1	A1	A1
Italian	A2	B1	A2	A1	A2

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

Digital skills

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

- Good command of office suite (word processor, spread sheet, presentation software)
- Good command of materials studio software
- Good command in Programming with Fortran 90/95, PERL, C++ and Scilab.

Training & Workshop

- Title: RASPA Workshop
  Date: 1st July to 4th July 2019
  Venue: Wrocław University of Science and Technology, Wrocław, Poland.

- Title: Atomic Astrophysics with Computational Methods Using SUPERSTRUCTURES and R-matrix Codes
  Date: 30th Oct. to 1st Nov. 2017
  Venue: Department of Physics, University of Rajshahi.

REFEREE(S)

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