

Curriculum vitae

Personal information

Surname(s) / First name(s) **Himanshu**
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Email(s) himanshu@ill.fr, yhimanshu721@gmail.com
Nationality(-ies) Indian
Date of birth Feb 14 1995
Gender Male

Education

Place and Date	University of Rennes 1 (France), September 2019 – February 2020
Title of qualification awarded	Master in Materials Science Exploring Large scale Facilities (Erasmus Mundus MaMaSELF)
Key courses	Crystallography, Magnetism, Physics of surfaces, Scientific case study, Seminars, Structure and Dynamics, Thin Films (synthesis techniques and characterization), X-ray Physics, Condensed Matter: Statistical Physics
Score	16.72/20
Place and Date	University of Montpellier (France), 1st – 15th September 2019
Title of qualification awarded	Summer school on synchrotron and neutron facilities (Erasmus Mundus MaMaSELF)
Place and Date	University of Montpellier (France), September 2018 – July 2019
Title of qualification awarded	Master in Materials Science Exploring Large scale Facilities (Erasmus Mundus MaMaSELF)
Key courses	Crystallography, Neutron Diffraction, Surface properties, Phase Diagrams, Thin Films, Quantum Mechanics (I,II), Electronic properties of Materials and Molecular Electronic Theory
Score	16.71/20 and Rank - 1
Place and Date	Indian Institute of Technology Madras (India), July 2016–May 2018
Title of qualification awarded	Master of Science in Physics
Key courses	Condensed Matter Physics (advanced), Quantum Mechanics (advanced), Electronics, Introduction to Nanoscience, Nanotechnology and Nanomaterials, Dielectric Magnetic Optical Materials, Semiconductor Physics and Devices, Statistical Mechanics, Mathematical Physics, Atomic and molecular Physics
Grade	CGPA - 8.8/10
Place and Date	Deshbandhu college, Delhi University (India), July 2013–May 2016
Title of qualification awarded	Bachelor of Science in Physics
Key courses	Mathematical Physics, Mechanics, Thermodynamics, Electricity and Magnetism, Digital Systems and Applications, Optics, Linear Algebra, Physics of Devices and Instruments, Computer Programming and Numerical Analysis, Solid State Physics
Score	82.57%

Research experience

Date	October 2020 - Present
Supervisor	Dr. Charles Simon (LNCMI, Grenoble), Dr. Ketty Beauvois (ILL, Grenoble)
Project brief	Control of orbital ordering in magnetic epitaxial thin films The purpose of this PhD project is to study the magnetic structure of an epitaxial thin film by neutron diffraction considering the film as a single crystal. The films will be grown by layer by layer ultra vacuum laser ablation technique in Caen (CRISMAT lab). They will be characterized by X ray diffraction and transmission electron microscopy in Caen, as well as by bulk magnetization measurements. These manganese oxide films are studied in order to show that the epitaxy is able to control the orbital ordering of the films and then to stabilize phases which does not exist in regular single crystals.
Date	March 2020 - July 2020
Supervisor	Dr. Romain Sibille, Paul Scherrer Institute, Switzerland
Project brief	Magnetic metal-organic frameworks studied by neutron diffraction The rich arrangements of magnetic ions in metal-organic compounds can be a source of interesting properties. In this project, complex magnetic orders originating from frustrated magnetic interactions were investigated using neutron diffraction, eventually giving rise to magnetoelectric multiferroics. The main aim of the project was to study the magnetic structure of Co-MOF and Mn-MOF, and look for possible explanation for their observed macroscopic properties. Structure refinements were carried out using FullProf software package.
Score	16/20
Date	May 2019 – July 2019
Position	Research internship
Supervisor	Prof. Paul Attfield, University of Edinburgh, Edinburgh (United Kingdom)
Project brief	Synthesis of new cation ordered double and double double perovskites using high pressure-high temperature synthesis methods. As a visiting research intern, my role was to synthesize cation double ordered and double double ordered perovskites. The project involved high pressure synthesis (Walker module), and structural characterization using x-rays.
Skills learned	XRD, high pressure synthesis (Walker module), structure refinement (Fullprof)
Date	August 2017 – May 2018
Supervisor	Dr. Somnath Chanda Roy, Indian Institute of Technology Madras, Chennai (India)
Description	Synthesis of one dimensional Fe_2O_3 nanostructures for photocatalysis One dimensional nanostructuring of photoanodes is known to increase photocurrent and hence STH efficiency by increasing light absorption as well as decreasing the extent of recombination. In this project, hematite photoanodes of different morphologies were synthesized and characterised in order to investigate their effect on PEC water splitting performance. Several techniques such as SEM, LSV, Chronoamperometry were used for the investigation.
Skills learned	Photocurrent measurements, XRD, SEM, LSV, Chronoamperometry

Personal skills and competences

Mother tongue(s)	Hindi
Other language(s)	English

*Self-assessment
European level^(*)*

English

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	C1	C1	C1

^(*) Common European Framework of Reference (CEF) level

Research and computer skills

XRD, SEM, High pressure synthesis, C++, Python (beginner), FullProf, Shelx (beginner), LaTeX, competent with most MS office programs

Additional information

Scholarships

Charpak Master Full Scholarship

Awarded by the Embassy of France in India for Erasmus Mundus MaMaSELF program at University of Montpellier (2018-19)

Institute Merit Scholarship

For excellent academic performance in the M.Sc. program at IIT Madras, awarded to top 25% students

Additional test scores

GRE general test - 320/340 (Quant - 168/170, Verbal - 152/170) (test date - 12 July 2017)

TOEFL-iBT - 111/120 (test date - 04 January 2020)

Joint Admission test for M.Sc.(JAM-Physics)
All India Rank 517 among 10,000 students

Personal interests

Enjoy all sports particularly cricket (previously played with "Edinburgh Indians" group and IITM hostel team) and Badminton, travelling, philosophical discussions