L´eon ANDRIAMBARIARIJAONA

Personal Details

I am an experimentalist specialising in extreme conditions physics, particularly in the use of DACs and analytical techniques such as XRD, Raman and IR spectroscopy. Motivated and hardworking, able to work well both in a team and individually.

Education

2021 - 2022 Post-Doc at Institut de min´eralogie, de physique des mat´eriaux et de cosmochimie (IMPMC), Sorbonne University, Paris, France. My research activity focuses on the synthesis and characterization of new materials at high pressure. In particular, study the reactivity of molecular systems (NH_3) under HP-HT.

2017 - 2020 PhD Physics: Physics and Chemistry of Materials, at Institut de min´eralogie, de physique des mat´eriaux et de cosmochimie (IMPMC), Sorbonne University, Paris, France. Project title: *Experimental investigation of the phase diagrams of ammonia hemihydrate, and ammonia dihydrate in high pressure and high temperature.*

2015 - 2017 Master degree in condensed-matter physics, Sorbonne Universit´e, Paris, France.

Fev-Jun 2017 Internship at INSP (Institut de Nanoscience de Paris), Sorbonne Universite,
Project title: *Exciton-phonon coupling in a $CsPbBr_3$ single nanocrystal*

Fev-May 2016 Internship at INSP (Institut de Nanoscience de Paris) at Sorbonne University
Project title:*Dynamics of electronic spins localized on donor atoms inserted in a quantum well: pump-probe experiment*

2011 - 2014 Bachelor's degree in physics, Universit´e de La R´eunion, France.

2015 - 2017 High School Diploma, Lyc´ee mixte, Antalaha, Madagascar.

Competencies

Languages: English, intermediate level. Used since 2017 for working and daily conversation.
French, fluent level. Used since 2011 for daily and working conversation. Malagasy, native speaker.

Computer Skills: Windows and Linux operating systems for daily use. Knowledge of Python, OriginPro, IgorPro for advanced and basic data analysis. Knowledge of specific software for data treatment of XRD data such as: Dioptas, Fit2D, FullProf.

Instrumentation: Diamond anvil cell (DAC): diamonds alignment, gasket preparation and sample loading.
High temperature: capable of using both resistive and laser heating.
Large facilities equipment: conceiving, planning and conducting experiments in synchrotron facilitie such as : ESRF (ID27 beamline), SOLEIL (PSICHE and SIMS beamline) and European XFEL.

Technique:	X-ray diffraction on powder and single crystal: conceiving, planning and executing experiments, measurements and data analysis specialised on under extreme conditions. Infrared and Raman spectroscopy: preparing and performing in high pressure and high-temperature spectroscopy experiments on lab setup or in synchrotron. Cryogenic loading: able to load samples at very low temperature in DAC.
Theoretical:	*ab initio* calculations (DFT)

Public presentations

Contributed talk: "Water/ammonia ice mixtures under high pressure and temperature" 27th AIRAPT International Conference on High Pressure Science and Technology, Rio de Janeiro , Brasil, August 2019.

Contributed talk: "Phase diagrame of Ammonia hemihydrate (AHH)" 14th SOLEIL Users Meeting, Saint-Aubin, France, January 2019.

Poster: "Water/ammonia ice mixtures under high pressure and temperature" Ecole Cristallographie et Grands Equipements (ECGE), Saint-Aubin, France, october 2018

Contributed talk: "Phase diagrame of Ammonia hemihydrate (AHH)", Forum de technologie des hautes pressions, S`ete, France, October 2017.

Journal publications

[1] Zhang, H. ; Datchi, F. ; Andriambariarijaona, L. ; Zhang, G. ; Queyroux, J. A. ; Beneut´ , K. ; Mezouar, M. ; Ninet, S.: Melting curve and phase diagram of ammonia monohydrate at high pressure and temperature. In: *The Journal of Chemical Physics* 153 (2020)

[2] Ramade, Julien ; Andriambariarijaona, L´eon ; Lhuillier, Emmanuel ; Bramati, Alberto ; Chamarro, Maria: Exciton-phonon coupling in a CsPbBr3 single nanocrystal. In: *Applied Physics Letters* (2018)

[3] Ramade, Julien ; Andriambariarijaona, L´eon M. ; Lhuillier, Emmanuel ; Bramati, Alberto ; Chamarro, Maria: Fine structure of excitons and electron–hole exchange energy in polymorphic CsPbBr3 single nanocrystals. In: *Nanoscale* (2018)

References

These persons are familiar with my professional qualifications and my character:

Dr. Fr´ed´eric DATCHI
Directeur de Recherche CNRS, IMPMC
4 Place Jussieu, 75005, Paris, France
) frederic.datchi@upmc.fr

Dr. Sandra NINET
Deputy Director, IMPMC
4 Place Jussieu, 75005, Paris, France
) sandra.ninet@upmc.fr

Pr. Maria CHAMARRO

Institut de Nanoscience de Paris
4 Place Jussieu, 75005, Paris, France
) maria.chamarro@insp.jussieu.fr

Dr. Malik MAMODE
Associate Professor,Universit´e de La Reunion
) malik.mamode@univ-reunion.fr