Marina Gomes Rachid
PhD Candidate at Leiden Observatory
Leiden, The Netherlands

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EDUCATION

Leiden Observatory – Leiden University 2018 -
PhD in Astrochemistry
Galactic and extragalactic ices with JWST and ALMA
Supervisor: Harold Linnartz

Universidade do Vale do Paraíba 2016 - 2018
Msc in Physics and Astronomy
Experimental simulation of the effects of energetic particles (ions and electrons) on the surface of icy bodies in the solar system: physicochemical transformation of ices mixtures containing H_2O,CO_2,CH_4 and H_2O,CO_2,CH_4:NH_3
Supervisor: Prof. Dr. Sergio Pilling

Universidade de São Paulo (IFUSP) 2012 - 2015
B.Sc in Physics
Determination of spectral signatures of biomolecules essentials to life
Supervisor: Prof. Dr. Eduardo Janot Pacheco

Universidade de São Paulo (IQSC-USP) 2008 - 2011
B.Sc in Chemistry
Study of the eletronic structure of diatomic systems containing elements from groups 14 and 16
Supervisor: Prof. Dr. Roberto Luiz Andrade Haiduke

RESEARCH INTERNSHIPS

Research internship at GANIL (Grand Accélérateur National d'Ions Lourds) , Caen-France (01/10/2017 – 01/04/2018) - Processing of warm ices by low energy ions: Probing the effects of solar wind and low energy magnetospheric ions on frozen solar system bodies, under supervision of Phillipe Boduch.

LEAPS Summer School 2017 (06/06/2017 - 11/08/2017) – ESA/Leiden University- Characterising the largest interstellar molecules under supervision of Dr. Alessandra Candian (Leiden Observatory).

PUBLICATIONS

He, J., Diamant, S. J., Wang, S., Yu, H., Rocha, W. R., **Rachid, M.**, & Linnartz, H. (2022). Refractive Index and Extinction Coefficient of Vapor-deposited Water Ice in the UV–vis Range. The Astrophysical Journal, 925(2), 179.

Rachid, M.G., Brunken, N., De Boe, D., Fedoseev, G., Boogert, A. C. A., & Linnartz, H. (2021). Infrared spectra of complex organic molecules in astronomically relevant ice mixtures-IV. Methylamine. Astronomy & Astrophysics, 653, A116.

Rachid, M.G.., van Scheltinga, J. T., Koletzki, D., & Linnartz, H. (2020). Infrared spectra of complex organic molecules in astronomically relevant ice mixtures-II. Acetone. Astronomy & Astrophysics, 639, A4.

Rachid, M. G., Pilling, S., Rocha, W. R. M., Agnihotri, A., Rothard, H., & Boduch, P. (2020). Processing of 72-K water-rich ices by keV and MeV oxygen ions: implications for the Saturnian moon Enceladus. Monthly Notices of the Royal Astronomical Society, 494(2), 2396-2409.

Candian, A., **Gomes Rachid, M.**, MacIsaac, H., Staroverov, V. N., Peeters, E., & Cami, J. (2019). Searching for stable fullerenes in space with computational chemistry. Monthly Notices of the Royal Astronomical Society, 485(1), 1137-1146.

Rachid, M. G., Faquine, K., & Pilling, S. (2017). Destruction of C2H4O2 isomers in ice-phase by X-rays: Implication on the abundance of acetic acid and methyl formate in the interstellar medium. Planetary and Space Science, 149, 83-93.

Terrabuio, L. A., Teodoro, T. Q., **Rachid, M. G.**, & Haiduke, R. L. (2013). Systematic theoretical study of non-nuclear electron density maxima in some diatomic molecules. The Journal of Physical Chemistry A, 117(40), 10489-10496.

CONFERENCE PRESENTATIONS

“Infrared spectra of methylamine in astronomically relevant ice mixtures” - Poster presentation - European Conference on Labratory Astrophysics (ECLA) – Anacapri - Italy, 2021.

“Laboratory data in support of JWST observations of interstellar ices” - Poster presentation at Torun Astrophysics, Spectroscopy and Quantum chemistry school (TASQ), Torun – Poland, 2019.

“Laboratory data in support of JWST observations of interstellar ices” - Poster presentation - IAU Symposium S350— Laboratory Astrophysics: From observations to interpretation - Cambridge, UK, 2019.

“Processing of cometary surface by swift ions”, poster presentation in 51st Eslab Symposium “Extreme Habitable Worlds”, European Space Agency ESA/ESTEC - The Netherlands, 2017 . **Awarded with Young Research Awards**.

“Destruction of $C_2H_4O_2$ isomers in ice-phase by X-rays and implication on their abundance in the ISM”, Oral presentation in AbGradCon - 2017- Charlottesville – USA, 2017.

“Destruction of $C_2H_4O_2$ isomers in ice-phase by x-rays and implication on their abundance in the ISM”, poster presentation at Symposium of Physics and Astronomy of Universidade do Vale do Paraíba (Simfast), São José dos Campos - SP, Brazil 2017.

“Destruction of $C_2H_4O_2$ isomers in ice-phase by X-rays: Implication on the abundance of acetic acid and methyl formate in the interstellar medium” Poster presentation - IAU Symposium 332: Astrochemistry VII, Through the Cosmos from Galaxies to Planets, Puerto Varas- Chile – 2017.

“Processing of Cometary Surfaces by Swift Ions”, Poster presentation - ESA Conference “Ices in the Solar System”, Madrid - Spain - 2017.

“Peering on biomolecules spectral fingerprints with FRACS”, Poster presentation - First Astrobiology School at Observatório Nacional- Rio de Janeiro, Brazil - 2014.

“Semi classical orbits and antidots lattices in Hall systems” - Oral presentation - 22º International symposium of undergraduate research at USP - 2014.

STUDENT SUPERVISIONS

“Preparing for JWST: the infrared spectrum of frozen glycolaldehyde”, Casper Spijker, Thesis for Bachelor of Science in Astronomy - 2021.

“Wavelength dependent refractive index measurements of interstellar ice analogues”, Pien Vinke, Thesis for the graduation internship - The Hague University of Applied Sciences - 2020.

“High resolution infrared spectroscopy of interstellar ice analogues”, Dani de Boe and Nashanty Brunken, Thesis for Bachelor of Science in Astronomy-, 2019.

TEATCHING EXPERIENCE

Teaching assistant of Experimental Physics V – Optics	March 2022 - Jun 2022
Teaching assistant of Experimental Physics VI – Optics & Electromagnetism	April 2021 - Jul 2021
Teaching assistant of Experimental Physics VI – Optics & Electromagnetism	April 2021 - Jul 2021

OTHER ACTIVITIES

Talks to general public at the Observatory of Universidade do Vale do Paraíba -São José dos Campos - SP, Brazil, (2017).