



Ricardo Manuel Alves Pacheco Moreira

PhD in Physics

CONTACT

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Nationality

Portuguese

LANGUAGES

Portuguese

Native proficiency

English

Proficient

PROFILE

Newly graduated PhD in Physics with a strong background in computational and experimental research. Seeking opportunities outside of academia. Experienced in Python for data processing and analysis, with additional exposure to C, Fortran and R. Led and contributed to High Performance Computing projects totalling over 15 million CPU core hours. Proficient in Linux environments and Bash scripting for HPC job automation.

EDUCATION

2021 – 2026

PhD in Physics

Faculty of Sciences, University of Porto

- Instrumental Analysis Methods; Advanced Materials Preparation & Characterization
- Instrumentation & Control; Optics; Quantum Mechanics; Condensed Matter
- Electronic Structure Calculations; Statistical Physics

2017 – 2019

Master's Degree in Physics

Faculty of Sciences, University of Porto

- Instrumental Analysis Methods; Electromagnetism; Optics; Quantum Mechanics
- Instrumentation & Control; Condensed Matter Physics

2012 – 2017

Bachelor's Degree in Physics

Faculty of Sciences, University of Porto

- Physics; Electromagnetism; Instrumental Analysis Methods
- Optics; Quantum Mechanics; Condensed Matter; Instrumentation & Control

RESEARCH EXPERIENCE

Jul 2018 – 2021

Trainee Researcher

Institute of Physics of Materials, University of Porto (IFIMUP)

- Material synthesis via solid state reaction and sol-gel methods
- Material characterization using the Perturbed Angular Correlation (PAC) technique
- DFT calculations of electric field gradients on perovskites with Wien2k (ferromagnetic and antiferromagnetic configurations, simple cells and supercells)

TECHNICAL SKILLS

SKILLS ACQUIRED DURING FORMATION:

Programming Languages:

- Python, C, Fortran LabVIEW, Bash scripting, R.

Operating systems:

- Windows, Linux.

Software:

- Interlude, Wien2k, OriginPro, FullProf, ImageJ, Quantum ESPRESSO, Microsoft Office

Hyperfine Techniques:

- Perturbed Angular Correlation Technique (PAC)

Materials Synthesis:

- Solid state reaction;
- Sol-Gel methods.

Others:

- Vacuum systems operation
- ISOLDE-CERN control room operation
- HPC (15M + CPU hours incl. As PI)

PUBLICATIONS & PRESENTATIONS

- 3 peer-reviewed publications (available on Google Scholar)
- 13 oral presentations at National and International Conferences
- 13 poster presentations at National and International Conferences

INTERNATIONAL COLLABORATIONS

- User at ISOLDE-CERN for Perturbed Angular Correlation experiments
- HPC-Europa3 transnational access programme — research stay in Italy, 2 million CPU core hours allocated