Contact

pol.benitez@upc.edu / polbeco@gmail.com (email)
(ORCID)
(webpage)
(Google Scholar)
(LinkedIn)
(GitHub)

Skills

Density Functional Theory
Phonon calculations
Molecular Dynamics
Crystal Structure Prediction
Graph Neural Networks
Machine Learning
Numerical Simulation
Data Analysis and visualization

Languages

English (Full Professional Proficiency)
Spanish (Native)
Catalan (Native)

Awards and grants

Joan Oró FI 2024, predoctoral research grant (May 2024 - May 2027)

Best Predoctoral Research Awards (1st edition) of the Department of Physics of UPC (Feb 2024)

Pol Benítez Colominas

FI PhD candidate at UPC and Visiting Researcher at UTokyo
Tokyo, Japan

Profile

I am a PhD Candidate in Computational Physics at the Polytechnic University of Catalonia (UPC) and Visiting Researcher at The University of Tokyo, working under the supervision of Prof. Claudio Cazorla. My research lies in Computational Materials, where I employ first-principles atomistic modeling methods and machine learning approaches, such as Density Functional Theory, Machine Learning Interatomic Potentials, and Graph Neural Networks, to investigate condensed matter systems.

Experience

The University of Tokyo; Tokyo, Japan. **Visiting Researcher**, Oct 2025 – Present

Universitat Politècnica de Catalunya; Barcelona, Spain:

- **Predoctoral Researcher**, Sep 2023 - Present
- **Teaching Assistant**, Feb 2023 - Present
- **Graduate Researcher**, Jan 2023 - Aug 2023

University of Cambridge; Cambridge, United Kingdom. **Visiting Researcher**, Sep 2024 – Nov 2024

Universitat de Barcelona; Barcelona, Spain. **Undergraduate Researcher**, Feb 2021 - May 2022

Education

Universitat Politècnica de Catalunya - PhD in Computational and Applied Physics (2023 - Present)

Universitat Politècnica de Catalunya - Master's degree in Engineering Physics (2022 - 2023)

Universitat de Barcelona – Bachelor's degree in Physics, Mention in Fundamental Physics (2016 - 2022)

Research topics

Materials modelling for energy and optoelectronic applications

Electron-phonon coupling effects in optoelectronic materials

Crystal structure prediction and phase transitions with MLIPs

GNN for materials property prediction