

Ph.D. Contract in the Synthesis of Halide Perovskites Analogs

The Matheu lab at the University of Barcelona (UB) offers **one Ph.D. position (3 years)** starting in February 2024.

Our Group focuses on synthesizing hybrid materials for energy conversion and electrocatalysis at the Inorganic Chemistry Section of the University of Barcelona. For further information, please visit the website matheulab.com.

PROJECT: Most semiconductor technologies rely on the intentional engineering of charge transport. In the case of halide perovskites — a semiconductor class currently developed for critical components in solar cells and light-emitting devices — reliable control of their charge transport is still needed. Such advances may help improve the performance of these semiconductors in current applications and open myriad new possibilities. ***In this project***, we will prepare expanded analogs of halide perovskites that can help address this challenge. We will synthesize expanded analogs of halide perovskites containing redox-active organic ligands. Secondly, this project will harness the expanded perovskites' versatility to discover new metal-halide lattices with mixed-valency. The project is funded by the Agencia Estatal de Investigación (PID2022-137777NA-I00) and María de Maeztu (CEX2021- 001202-M).

The candidates must hold a BSc degree in Chemistry, Nanotechnology, or Materials Science and a Master's in the same fields. Previous synthetic skills (organic or inorganic) will be valued. High oral and written communication skills in English are required. The selected student will be awarded a 3-year contract and is expected to conduct research, write drafts of scientific papers, and deliver a PhD thesis.

Interested candidates, please contact **Dr. Roc Matheu** (roc.matheu@ub.edu) by November 26, 2023.