

Postdoctoral Researcher in Hyperpolarized NMR / MRI at the Research Group Molecular Imaging for Precision Medicine in Barcelona

Introduction to the vacant position:

The Molecular Imaging for Precision Medicine (MIPMED) develops hyperpolarized NMR/MRSI tools to study cellular metabolism in vitro and in vivo, with particular interest in organ-on-chip platforms and microfluidic devices. Our latest project focuses on understanding the metabolism of hepatoblastoma - the most common pediatric liver cancer, primarily affecting children aged 0 to 3 years.

Our NMR lab counts with two commercial benchtop NMR spectrometers (Oxford Instruments), a prototype benchtop NMR spectrometer to accommodate planar microfluidic devices (Oxford Instruments), a preclinical 3T MRI scanner (Bruker), a HyperSense polariser and a home-built PHIP setup. By the end of 2025, the NMR lab will also include a preclinical 7T MRI scanner with cryoprobe (Bruker), an additional commercial DNP polariser and a Polaris PHIP polariser (NVision), and a benchtop EPR spectrometer. The NMR lab at IBEC is surrounded by and has access to the NMR facility of the University of Barcelona, which is fully equipped with high-resolution vertical bore NMR spectrometers.

We also have our own cell culture room, a wet lab for sample preparation, access to the clean room facility of IBEC to fabricate our microfluidic chips, animal housing besides the NMR lab, and access to all the microscopy and other core facilities of IBEC and the PCB.

We are now looking for two Postdoctoral Researchers to join our team:

1) Hyperpolarization-enhanced magnetic resonance methods development: The ideal candidate will be an NMR/MRI Physicist or Chemist with a strong background in hyperpolarization techniques, such as Dynamic Nuclear Polarization (DNP) and/or Parahydrogen-Induced Polarization (PHIP). Expertise in programming, pulse sequence development and implementation is essential. The candidate must be able to design and execute experiments to improve hyperpolarization methods and their applications in biomedical research.

2) Hyperpolarization-enhanced magnetic resonance biomedical applications: The ideal candidate will be a Biologist or Biochemist with a strong background in hyperpolarization studies of cell cultures and/or mouse models of disease.

Both candidates should also have a passion for mentoring and training students, present excellent communication and interpersonal skills and have experience in working within multidisciplinary and collaborative research environments.

How to apply:

Interested applicants should send their CV, cover letter and the contact of two referees to: imarco@ibecbarcelona.eu. In your cover letter, please describe your experience in hyperpolarization techniques, programming, and pulse sequence development, as well as your approach to mentoring and training students. Applications will be reviewed on a rolling basis, and candidates will be considered until the position is filled.