



Postdoc Position: Development of an Automated Laboratory of Accelerated Molecular Synthesis

The candidate will work in the framework of the ERC project “Photo Thermal Management Materials (PHOTHERM)”.

This project seeks to fundamentally change how we generate heating and cooling by developing a new class of materials that capture, store, and release both solar and ambient heat. These solar thermal management materials are a unique combination of molecular photo-switches that capture and store solar energy, so-called MOST systems, that together with phase change materials (PCM) can contribute to thermal management. A major part of the project is to develop devices for studying the new materials and to establish an automated laboratory for accelerated molecular and materials synthesis.

In particular, the candidate will be in charge of developing the automated chemistry platform. This experimental platform will combine flow chemistry systems, analysis and work up

Hence, the focus of the candidate’s research will be on device design, automation, and programming, together with the team members that are developing synthesis tools and new materials.

The **Supramolecular Nanomaterials** group, has a broad expertise on the design, synthesis and characterization of molecular solar thermal systems (MOST), and recent publications from the group are e.g. Chem. Sci., 2022, 13, 834, Joule 5 (12), 3116-3136 (2021), Accounts of Chemical Research, 2020, 53, 8, 1478–1487, J. Am. Chem. Soc. 2020, 142, 28, 12256–12264, Energy and Environmental Science, 2019, 12, 187-193, Nature Communications 2018, 9:1945, Energy and Environmental Science 2017, 10, 728-734.

This is a multidisciplinary and transversal project and the candidate will be part of a team formed by several researchers. Mobility between Barcelona (Spain) and Gothenburg (Sweden) may be integrated in the project.

Main tasks of the candidate

- a. Develop and Design devices for molecular testing and discovery
- b. Contribute to the Development of an Automated Chemical Laboratory that will combine the function of several commercially available synthesis tools into one functional unit.



Requirements

The fellow should have an internationally recognized PhD degree (or equivalent) in a relevant discipline (Chemistry, Physics, Engineering).

The ideal candidate should have a strong background in automation, programming (specifically Python/Labview) and chemical engineering. Knowledge of automation, Labview, Python and flow chemistry is a merit.

About The Supramolecular Nanomaterials Group

The Supramolecular Nanomaterials group lead by prof. Kasper Moth-Poulsen is using modern synthesis tools to develop new materials for energy storage, solar energy, sensors and molecular electronics. We also build demonstration devices to illustrate the function of our new materials. The group is interdisciplinary and focus in addition to traditional organic synthesis on development of advanced flow chemistry tools, lab automation, devices for thermal energy storage materials and photoconversion. The group is supported by the European Research Council (ERC), the Catalan Institute of Advanced Studies (ICREA), the European Union and ICMAB through the Severo Ochoa excellence project.

We value a diverse and inclusive work environment where all team members have excellent opportunities for learning and contributing.

For more information, please visit:

www.moth-poulsen.com

About ICMAB

The Institute of Materials Science of Barcelona (ICMAB-CSIC) is a multidisciplinary research center focused on cutting-edge research in functional advanced materials in the fields of ENERGY, ELECTRONICS, NANOMEDICINE and application fields yet to imagine.

The ICMAB is integrated within the Barcelona Nanocluster in Bellaterra (BNC-b), a research network that includes the UAB, the CSIC (ICMAB, IMB-CNM and ICN2) and IRTA, part of the UAB Research Park of the Universitat Autònoma de Barcelona (PRUAB) and the ALBA Synchrotron. The BNC-b aims to share advanced scientific equipment and promote and disseminate nanoscience and nanotechnology.



The ICMAB offers a complete range of scientific services, including a 10,000 class cleanroom (the Nanoquim Platform) that are open to interested parties, whether these are academic or from industry, and it participates in all kinds of educational and promotional activities. Many ICMAB researchers teach at the UAB Master's degree in Nanotechnology and Materials Science and also on the UAB degree on Nanoscience and Nanotechnology.

<https://icmab.es/>

Details of the position

Contract (full time) duration for two years.

Tentative Starting date: negotiable.

Further information (contact person): Prof. Kasper Moth-Poulsen, kmothpoulsen@icmab.es

How to apply

Submit the following application documents to group administrator Eulàlia Pujades epujades@icmab.es:

- Resume or CV including a list of publications
- Motivation Letter
- Statement of the applicant's research experience
- List of three references with contact details
- Please mention position "Post Doc 2 KMP group" in the email title

Closing date for application: The recruitment process will be closed on March 17 2022, or when a suitable candidate is found.