

Post-doctoral position in theory of atomic quantum sensors

Wed, 2020-10-07 17:13 - [ICFO - The Institute of Photonic Sciences](#) [1] **At:** ICFO-The Institute of Photonic Sciences

Deadline: 15 January, 2021

Location

ICFO-The Institute of Photonic Sciences Av. Carl Friedrich Gauss, 3
Castelldefels (Barcelona) 08860 Spain

ICFO is offering a postdoctoral position to a well-qualified, highly motivated and dynamic young scientist who wishes to enhance his/her scientific career in a friendly and stimulating environment.

The successful candidate will join the **Atomic Quantum Optics group** led by **Prof. Morgan Mitchell**. The group works experimentally with single atoms, Bose-Einstein condensates and atomic vapor sensors, with applications in spectroscopy, biomagnetics, and searches for physics beyond the standard model. Related activities in the research group include zero- and ultra-low-field nuclear magnetic resonance using atomic magnetometers, integrated atomic sensors, and quantum-enhanced sensing with atomic instruments.

We are looking for a motivated scientist with a background in physics, engineering, statistics, or related fields, to work on advanced theoretical and statistical methods for atomic quantum sensing. We are looking for someone who brings expertise in modern statistical techniques for application to state-of-the-art atomic sensors. In the past we have found that Kalman filtering, gaussian-state quantum models, hidden Markov models, and truncated Wigner approximation methods can significantly improve the reach of the experimental methods. We anticipate continued use of these established techniques, but also are open to inputs from other areas such as compressive sensing or machine learning.

This contract will be funded by the European Regional Development Funds (ERDF) allocated to the Programa operatiu FEDER de Catalunya 2014-2020, with the support of the Secretaria d'Universitats i Recerca of the Departament d'Empresa i Coneixement of the Generalitat de Catalunya for emerging technology clusters to carry out valorization and transfer of research results. Reference of Clúster Emergent Clúster Quantum CAT: 001-P-001644. Codi operació: U16-011424

ELIGIBILITY AND CONDITIONS

Candidates must hold an internationally-recognized Ph.D.-equivalent degree (or evidence of its completion in the near future) preferably in physics, engineering, statistics, or related fields. The ideal candidate will have a background in atomic/optical sensing, and demonstrated ability to collaborate with experimentalists.

ICFO is an equal opportunity employer. Candidates are selected exclusively on merit and potential on the basis of submitted application material. No restrictions related to disabilities, citizenship or gender apply to ICFO positions. ICFO abides by the principles of openness, efficiency, transparency, supportiveness, and international comparability as stated in the European Charter for Researchers and the European Code of Conduct for the Recruitment of Researchers.

The contract is offered for periods of one year, renewable for a total of up to 3 years.

APPLICATION PROCEDURE

The formal application should be submitted online via <http://jobs.icfo.eu/?detail=542> [2]

Suitable candidates are requested to submit:

- Presentation letter with a declaration of interest,
- Curriculum Vitae, including contact details,
- The contact e-mail of two potential referees.

Candidates may contact [jobs \[at\] icfo \[dot\] eu](mailto:jobs@icfo.eu) for informal enquiries regarding the application, as well as address scientific enquiries to [morgan \[dot\] mitchell \[at\] icfo \[dot\] eu](mailto:morgan.mitchell@icfo.eu).

Applications will be continuously evaluated. The call will remain open until 15 January, 2021.

For updated information about ICFO, please visit <https://www.icfo.eu/> [3]

- [Postdoc](#) [4]

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