

## Ph.D. fellowship in "Attosecond soft X-ray generation"

Project description: X-rays are a prime analytical tool across a diverse range of areas in our modern economy from fundamental physics and chemistry research, to the pharmaceutical and semiconductor industries. In particular, sources of ultrafast coherent x-rays are expected to have a transformative impact in all of these areas due to their capacity to enable the study of interactions between charge carriers and atoms in gases, liquids and solids, in real-time, and with element specificity. Our group has been pioneering table-top attosecond soft x-ray pulses in the so-called water window (280 - 540 eV), the spectral region in which the constituents of life (carbon, nitrogen and oxygen) have strong absorption edges, thus permitting realtime measurements with element specificity.

The present PhD project is rooted in attosecond x-ray physics and it is concerned with the generation and diagnostics of attosecond soft x-rays by advancing it into the keV region whilst improving source brightness and decreasing the footprint of the source. The success of this project will have significance across Attoscience, atomic/molecular physics and ultrafast x-ray science.

Environment: The applicant will join our group which consists of a highly motivated and dynamic team of international scientists with state-of-the art laboratory. Our experimental environment includes several unique few-cycle intense light sources, with special emphasis on wavelengths beyond 800 nm with CEP stability, an attosecond soft x-ray beamline for x-ray spectroscopy, and a reaction microscope for single electron imaging of molecular structure. We are embedded in several prominent national, European and international networks and collaborations, which ensures a vibrant and stimulating research environment and prominent exposure.

Eligibility and Conditions: The PhD fellowship is fully funded through an European Research Council (ERC) Grant and we seek a highly motivated candidate who wishes to enhance his/her scientific career in the field of Attosecond Physics and Ultrafast X-ray Science. The position in our team is available immediately and we will provide a stimulating environment to perform research on the cutting edge of both science and technology.

We are seeking an enthusiastic and motivated candidate for experimental work. Important is fluency in English and a diligent work ethics. Experimental experience with femtosecond pulses, vacuum equipment and CAD software are highly desired, but not required. Candidates must have obtained an internationally recognised degree, equivalent to 300 ECTS. The degree should be in physics (exceptions for mathematics, engineering or computer sciences may be

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considered). No restrictions of citizenship or gender apply to the fellowship.

Application procedure:

The formal application should be submitted online via <http://jobs.icfo.eu>

Candidates may contact [icfojobs@icfo.eu](mailto:icfojobs@icfo.eu) for informal enquiries regarding the application, as well as address scientific enquiries to [jens.biegert@icfo.eu](mailto:jens.biegert@icfo.eu)