Post-Doc Position on Theory of Structured Attosecond Pulses Applied to Ultrafast Magnetism

The Laser Applications and Photonics group of the University of Salamanca (ALF-USAL) conducts fundamental theoretical research in the field of nonlinear optics and ultrafast phenomena. The recent development of ultrafast structured laser pulses, ranging from the femtosecond to the attosecond regime, and presenting custom spin and orbital angular momentum properties has opened new routes to explore ultrafast magnetism on unprecedented timescales.

ALF-USAL invites applications for a 3-year Post-Doc position to explore theoretically these new scenarios of ultrafast magnetism driven by structured ultrafast pulses (https://euraxess.ec.europa.eu/jobs/474802). The position is part of the project ATTOSTRUCTURA, "Structured attosecond pulses for ultrafast nanoscience", funded by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No. 851201), supervised by Dr. Carlos Hernández-García, and with a duration of 5 years starting on March 1_{st} 2020.

Job Profile

Successful candidates will join the ALF-USAL group at Salamanca (Spain), and will have the possibility to consolidate their own independent research lines and to promote collaborative research among the following research lines:

- Development of theoretical models of high harmonic generation in atomic, molecular and solid systems, towards the generation of structured attosecond pulses with custom angular momentum properties.
- Development of theoretical simulations of laser-matter interactions in solids, including particle-in-cell (PIC).
- Development of theoretical codes (DFT, atomistic models, etc.) to describe the interaction of structured laser pulses with antiferromagnetic materials.
- Implementation of high-performance computing simulations of laser-matter interaction with antiferromagnetic materials.
- Theoretical study of the generation of skyrmionic structures using structured laser pulses.
- Theoretical study of the manipulation of magnetic properties of antiferromagnetic materials driven by femtosecond and attosecond timescales.

The applicant will collaborate closely with the theoretical team of ALF-USAL (laser.usal.es/alf) and the research group on simulation of magnetic nanostructures (SINAMAG) at the University of Salamanca within the ATTOSTRUCTURA project.

Responsibilities
- To develop and implement theoretical models of laser-matter interaction along the described research lines.
- To conduct independent research as well as in collaboration with other members of the group.
- Co-advise a PhD student and/or Master students.

Candidate Requirements
- Ph.D. in Physics, Chemistry or related Engineering degree, at the date of recruitment, with experience in theoretical Atomic, Molecular and Optical Physics, Photonics, Magnetism and/or Condensed matter physics.
- Advanced skills in developing and implementing theoretical simulations of strong field laser-matter interaction, ultrafast magnetism and/or condensed matter physics.
- Demonstrable team working skills.
- Advanced level of English.
- Candidates should be able to demonstrate a promising track record of achievements appropriate to their research field and career stage. CVs will be evaluated taking into account the overall track record of the researcher in relation to their level of experience.

Benefits
- Dynamic and international working environment.
- Training and access to a wide range of scientific facilities.
- Soft skills training.
- Employment conditions:
    - Full-time employment contract initially limited to three years.
    - Gross salary of 2.750 €/month.
    - Estimated starting date: March 1st 2020.

Application deadline: February 4th, 2020

Interested candidates should send a CV (maximum 5 pages), a personal statement with scientific interests and reasons for applying, two contacts for recommendation letters, and the attached Annex II, and to Dr. Carlos Hernández-García (carloshergar@usal.es)

For further information and inquiries please contact Dr. Carlos Hernández-García (carloshergar@usal.es)

More information: https://euraxess.ec.europa.eu/jobs/474802

ANEXO II / *ANNEX II*

IMPRESO DE SOLICITUD / *APPLICATION FORM*

CONVOCATORIA PARA LA CONTRATACIÓN DE PERSONAL INVESTIGADOR Y/O TÉCNICO DE APOYO EN TAREAS DE INVESTIGACION CON CARGO A UN PROYECTO, CONVENIO O CONTRATO DE INVESTIGACION

CALL FOR RECRUITMENT OF RESEARCHER STAFF AND/OR SUPPORT TECHNICIAN IN RESEARCH TASKS SUPPORTED BY A PROJECT, AGREEMENT OR RESEARCH CONTRACT

De conformidad con la convocatoria del Vicerrector de Investigación y Transferencia de la Universidad de Salamanca Código: 2020/U107/01, por la que se convoca un contrato con cargo al proyecto cuyo investigador principal es D. Carlos Hernández García, solicita ser admitido en el procedimiento, con los datos y la documentación adjunta que se facilitan a continuación:

In accordance with the Vice Chacellor for Research and Knowledge Transfer Call for Researcher recruitment with internal code: 2020/U107/01, by which a personnel contract is offered by the University of Salamanca within the framework of the European Research Project led by Dr. Carlos Hernández García, the candidate requests to be admitted to the recruitment procedure with the following attached data information and documentation:

DATOS PERSONALES DEL / LA SOLICITANTE / *PERSONAL INFORMATION*

Apellidos/*Surname*:

Nombre/*Name*:

Nacionalidad/*Nationality*:

NIF, NIE O PASAPORTE/*PASSPORT*:

Dirección/*Address*:

Código postal/*Postal code*:

Ciudad/*City*:

País/*Country*:

Correo electrónico/*E-mail*:

Teléfono/*Telephone number*:

DATOS ACADÉMICOS / *ACADEMIC DATA*

- Titulación/*Title*:

- Universidad o Centro/*University or Centre*:

DOCUMENTACIÓN QUE SE ADJUNTA / *DOCUMENTS TO BE PROVIDED*

Fotocopia DNI o documento equivalente en el caso de solicitantes extranjeros/Copy of passport

☐ Fotocopia del título académico/Copy of title

☐ Fotocopia del documento de homologación o reconocimiento en caso de

titulaciones extranjeras, en su caso/Copy of equivalent title, if applicable

☐ Fotocopia de los méritos alegados/Copy of merits

El/la abajo firmante declara bajo su responsabilidad que:
Los datos que constan en esta solicitud y en la documentación que se adjunta son veraces, asumiendo, en caso contrario, las responsabilidades que pudieran derivarse de las inexactitudes de los mismos.

Reúne los requisitos de la convocatoria, financiada de forma finalista, con cargo a proyectos, contratos, acuerdos o convenios de investigación y los requisitos generales para poder participar en los procesos selectivos de acceso a empleo público.

The undersigned declares, under his/her own responsibility, that:
The information provided in this application and attached documents is true and correct, assuming otherwise, the responsibilites that might arise from inaccuracies thereof.

The candidate meets all the call requirements laid down, funded through a competitive call, supported by projects and Research agreements and the general requirements needed to be an elegible candidate in the Public Employment selection procedures.

En ⬚ a ⬚ de ⬚ de 20⬚

Fdo

AGENCIA DE GESTIÓN DE LA INVESTIGACIÓN
Research Management Unit

Investigador/a Principal / PI: D. Carlos Hernández García

Borrar   **Imprimir**