



**One post-doc position in the project**

**DOMINION**

***"Deciphering the workings of molecule intercalated iron chalcogenides"***

***(Call: Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology, ONR BAA Announcement #N00014-17-S-B001, Award No N62909-17-1-2126)***



**Ref. 881**

**Heraklion 6/10/2017**

The Institute of Electronic Structure and Laser (IESL) of the Foundation for Research and Technology - Hellas (FORTH),\* in the frame of the project DOMINION, funded under the Office of Naval Research (ONR) Global, is seeking to recruit one (1) post-doctoral researcher.

**Job Description**

DOMINION provides an intimate engagement of syntheses and characterisation for a wide range of layered iron-based chalcogenide compounds. The challenges set out here will be tackled through a *cross-disciplinary*, collaborative initiative between European (Foundation for Research and Technology - Hellas, Greece & Warsaw University of Technology, Poland) and US DOE scientists (Brookhaven National Lab, NY & National High Magnetic Field Lab, FL). A comprehensive range of research activities, engaging young researchers (PhD and post-doc levels) with senior scientists, is organized to facilitate a resource-sharing culture and tackle open questions.

Understanding superconductivity in the materials of interest requires tackling the subtle stoichiometry necessitated for a sizeable superconducting critical temperature ( $T_c$ ). The team will develop low-temperature chemical routes (Department of Inorganic Chemistry and Solid State Technology, WUT; contact: Dr A. Krzton-Maziopa), which in conjunction with the physical properties (Institute of Electronic Structure and Laser, FORTH; contact: Dr. A. Lappas) of the acquired materials will allow parameterising the conditions leading to  $T_c$  enhancement.

The successful post-doctoral candidate will focus on the fundamental physics and chemistry of inter-atomic interactions of solid-state iron-chalcogenide magnets and superconductors, made up of functional molecular components with nanoscale dimensions. For this, user-facility photon and neutron science US

DOE labs, with their advanced analytical instrumentation, optimized for high -flux/ -resolution/ -data throughput, unavailable anywhere else in the world, will be utilized to generate key insights on how (structural and electronic / magnetic) correlations at the atomic level of matter are built and influence the superconducting electrons to pair-up.

- The post-doctoral researcher should be able and willing to travel to conduct experiments at DOE facilities in the USA.

**Required qualifications**

- PhD degree in Physical Sciences
- Demonstrated ability in quantitative structural analysis methods (e.g. Rietveld, pair distribution function)
- Proved experience in analytical experimental techniques, including, magnetometry and X-ray diffraction
- Excellent knowledge of the English language

**Greek male candidates must have fulfilled their military obligations****Desired requirements**

- Publications in peer-reviewed journals and scientific presentations in conferences is desired
- MSc degree in experimental techniques for condensed matter materials science (e.g. development of low-temperature physics probes) will be an advantage
- Programming skills for data acquisition and reduction will be beneficial
- Successful candidates must be able to work in an interdisciplinary environment

**Location:** IESL-FORTH, Heraklion, Crete, GREECE

(\*) The Institute of Electronic Structure and Laser (IESL) at FORTH, is a major research Institute in Greece and internationally. IESL is traditionally strong in two main research directions, namely, Lasers & Photonics and Materials & Devices. These interdisciplinary areas possess research infrastructures of international standards, with science and technology goals that cross the borders between physics, chemistry and biology (<http://www.iesl.forth.gr/>). Training and education through research and the exploitation of technologically mature applications are equally important priorities. FORTH is an Equal Opportunity Employer and has a strong commitment to diversity.

The Functional Nanocrystals and Quantum Magnetism Laboratory (FUN-L; <http://fun.iesl.forth.gr>) at IESL-FORTH will be the host for the post-doctoral researcher. FUN-L engages in the exploitation of novel quantum phenomena aimed at understanding the relationship between the microscopic structure and macroscopic physical properties for designing technologically important materials (e.g. bad metals, doped-semiconductors, magnets, superconductors).

**Expected Start Date:** 20 November 2017 or until the position is filled

**Contract Duration:** 12 Months, with the possibility of extension according to the needs of the project

**Project Duration:** 3 years

**Salary:** will depend on the experience of the researcher

**Insurance:** social security according to the National law

**Application Submission**

Applications received before 1st November 2017 will receive immediate attention; however, applications will be reviewed thereafter until the position is filled.

Interested candidates who meet the aforementioned requirements are kindly asked to submit their applications to the address ([hr@iesl.forth.gr](mailto:hr@iesl.forth.gr)), with cc to the Scientific Coordinator Dr Alexandros Lappas ([lappas@iesl.forth.gr](mailto:lappas@iesl.forth.gr)).

**In order to be considered, the application must include:**

- Application Form (please download file from the job announcement webpage <http://www.iesl.forth.gr/research/showfile.aspx?id=20171006997> )
- A cover letter describing your research interests
- CV and publications list
- Two (2) reference letters, e-mailed directly to [lappas@iesl.forth.gr](mailto:lappas@iesl.forth.gr) and cc to [hr@iesl.forth.gr](mailto:hr@iesl.forth.gr) .
- Scanned copies of the ready available academic titles

**Applications will be reviewed till the position is filled**

**Contact**

For information and questions regarding the application and selection procedure, candidates are asked to contact the secretariat ([hr@iesl.forth.gr](mailto:hr@iesl.forth.gr)), tel. +30 2810-391301.

For information and questions about the advertised position and the research activity of the group or the Institute itself, please contact Dr Alexandros Lappas ([lappas@iesl.forth.gr](mailto:lappas@iesl.forth.gr)), tel. +30 2810-391344.

**Selection Announcement**

The result of the selection will be announced on the website of IESL-FORTH.

Candidates have the right to appeal the selection decision, by addressing their written objection to the IESL secretariat within five (5) days since the results announcement on the web. They also have the right to access (a) the files of the candidates, as well as (b) the assessment results. All the above information related to the selection procedure will be available at the secretariat of IESL-FORTH in line with the Hellenic Data Protection Authority.