TOPOCOM

TOPOCOM emphasizes accessibility and encourages qualified candidates to apply regardless of gender identity, ability, status or ethnic and cultural background.

University of Crete, Greece

Doctoral Fellowship in Theoretical Physics

MARIE CURIE **ACTIONS**

- You want to work on theoretical research, develop mathematical models for materials, and study them to delve into the essence of the physical phenomena.
- You would enjoy carrying this out within a European network that combines theoretical, computational, experimental, and industrial partners working together.

The European Training Network TOPOCOM ("Top*ological solitons in ferroics for unconventional computing*") brings together groups and experts from academic institutions and industry from Norway, Germany, Austria, Greece, Italy, Luxemburg, the Netherlands and Switzerland and it provides training on concepts related to functional topological solitons in condensed matter (ferromagnets and ferroelectrics) and their applications for unconventional computing. More information: https://cordis.europa.eu/project/id/101119608.

The position is one of a total of 11 doctoral fellowships in the network. The successful candidate will work to obtain a doctoral degree under the supervision of Prof. Stavros Komineas. The place of work will be at the University of Crete (UoC) with extensive visits paid to other network nodes. The network will ensure excellent training to all students by world-leading scientists and the partner companies, scientific (via schools and workshops) and on soft skills.

The project requires you to (i) Construct models for ferromagnets and ferroelectrics that describe local variations of the modulus of the vector order parameter. (ii) Identify a series of skyrmionic textures. (iii) Develop a unified theory for the dynamics of magnetic and electric skyrmionic textures and link it with their topological features. (iv) Exploit theoretical results for computing applications.

Duties. You will perform original research using theoretical and numerical tools, working within a group at UoC. Close interaction is expected with other network nodes, including experimental

and industrial, and with doctoral students of the network. Expected is also the participation in training events, workshops, and conferences, and secondments to different universities and industrial partners.

Conditions. The period of employment is 3 years. The fellowship offers a competitive remuneration and travel support according to the rules of the Marie-Sklodowska Curie Actions. Included are mobility and family allowances. The starting date is as early as possible. Flexibility at work in order to achieve the goals of the project, and presence in the office on a daily basis are required. You will be enrolled in a PhD program at UoC prior to the employment.

The city of Heraklion has 200000 inhabitants and hosts, besides the UoC, also the Foundation for Research and Technology (FORTH) and the Hellenic Mediterranean University. These institutes together provide a vibrant research environment that supports fundamental and applied research. Crete has a history of more than 4000 years with archaeological sites such as the Knossos palace of the bronze age located just outside Heraklion. The island of Crete is a very popular destination (climbing, hiking, diving, etc).

Application. Should include

- Cover letter (please state your motivation to join the network and specifically this project). Sketch of a research proposal.
- CV and certificates.
- Diploma and transcripts of record for the MSc.
- Contact details of three persons who can provide recommendation letters.

Selection criteria (required)

- MSc in natural sciences.

Selection criteria (preferred)

- MSc in Physics or Applied Mathematics.
- Knowledge or experience in advanced mathematical methods in physics.
- Good experience in programming using mathematical methods and algorithms.

The MSCA rules apply. Mobility rule: The applicant should not have lived/worked in Greece for more than 12 months in the last 36 months before the start of employment. PhD rule: Applicants must be doctoral candidates, i.e., not already in possession of a doctoral degree at the date of the recruitment.
Women and other underrepresented groups are encouraged to apply.

For the application process please consult the call published on EURAXESS. More details can be obtained by writing to Prof. Stavros Komineas.

Application deadline, 22/12/2023 or until position is filled