H2020 HEL4CHIROLED Marie Sklodowska-Curie ITN
Early Stage Researcher Fellowships (ESR) - 3 years PhD positions

Application Deadline: 10/04/2020 – 23:00 Europe/Brussels time

One 36 months PhD position is available at **Diamond Light Source (Didcot, UK)** in the frame of the **Marie Sklodowska-Curie Innovative Training Network HEL4CHIROLED (Grant Agreement: 859752).**
The early stage researcher (ESR), who will take part in the above project, will apply for being enrolled in the **PhD Course of Chemistry and Material Science of the University of Pisa**, granting a PhD degree at the end of three years.
The principal research goal of the Marie-Sklodowska-Curie European Training Network HEL4CHIROLED project is the preparation of chiral Organic Light-Emitting Diodes (OLEDs) and Organic Light-Emissive Transistors (OLETs) based on new small helical molecules, helical pi-conjugated oligomers, and helical lanthanide complexes.

HEL4CHIROLED will:

- Create a research and training environment that is world-leading and optimally tailored to capitalise, for example, on the investment that has been made on chirality-related technologies.
- The ESRs will be trained in world-leading laboratories and/or in private beneficiaries and will benefit from the exchange of best practice among beneficiaries and partners, and from unique training events.
- Ensure that European research remains competitive in the global market, and that the trained researchers will be uniquely well-placed to contribute to the development of novel optoelectronic devices, displays and imaging technology of the future.

Title of the ESR project to be developed at Diamond Light Source:
"CD imaging of chiral semi-conducting π-conjugated polymers"

Host institution: Diamond Light Source, United Kingdom.

Main supervisor: Dr. Giuliano Siligardi (giuliano.siligardi@diamond.ac.uk).

Co-supervisor: Prof. Lorenzo Di Bari (lorenzo.dibari@unipi.it), University of Pisa, Department of Chemistry & Industrial Chemistry

Necessary to send the application form also to: Maria G. Viola (mg.viola@unipi.it).

Objectives:

- Scan surfaces and record complete ECD spectra on each pixel with the use of an apparatus already built-up at B23 line of Diamond Light Source (CD imaging or CDi). He/she will contribute to the further development of this instrumentation and will extend the analysis with a full Muller Matrix Polarimeter. He/she will also work on the synthesis and preparation of thin films of chiral organic semiconductors at the University of Pisa (IT). He/she will design and synthetise chiral aromatic monomers, which will be used in for building oligo- or polymeric organic semiconductors. For fabricating CP-OLEDs, they must have an emission spectrum in desirable spectral regions, which can be controlled by choosing co-monomers and further substituents. Preserving emission in the solid state will be of prime importance, as well as a homogeneous and well-organised chiral supramolecular structure. He/she will study in-depth all these aspects, with the aid of computational methods, and of a combination of optical techniques (fluorescence, ECD, CPL) of microscopy (POM, EM, AFM) and of scattering and diffractometric methods in collaboration with the Technical University of Eindhoven (NL) (with ESR12).

Expected Results:

- Improved semi-conducting and CPL-active materials with helical polymeric systems. Knowledge on their assembly onto surfaces.

Planned secondments:

- University of Pisa (IT) for polymer synthesis, CYNORA (DE) for OLED technology and private training.

Requirements:

The position is open to candidates of any nationality, as long as they fulfill the requirements set for the ESRs funded by Marie Sktodowska-Curie actions:

(1) Candidates who have already obtained a Ph.D. degree, or have more than 4 years of research activity (from the date when they have obtained a University diploma giving access to doctoralstudies), are NOT eligible.

(2) Researchers must NOT have resided or carried out their main activity (work, studies, etc.) in the UK for more than 12 months in the 3 years immediately prior to the date of appointment.

The salary of the ESRs will be paid according to the Marie Skłodowska-Curie action rules. For more information:
https://ec.europa.eu/research/participants/data/ref/h2020/other/guides_for_applicants/h2020-guide-appl-msca-if-2018-20_en.pdf

Required Academic degree / Desired experience

The applicants must have acquired a University diploma giving access to doctoral studies, preferably in Chemistry or in Materials Science, in the Country where the diploma was earned (typically, a MSc or a degree equivalent to at least 300 ECTS, ideally in Chemistry or Industrial Chemistry or a related subject).
The ideal candidate must have a strong background and practical experience in organic chemistry and/or in spectroscopy, documented by her/his MSc thesis.
Very important skills that will be considered are the following:

- excellent knowledge of the English language (comprehension, speaking and writing);
- -good abilities in scientific writing (reports, manuscripts);
- team-oriented and cooperative working attitude;
- motivation and willingness to spend several months on secondment in another research group;
- motivation and willingness to present scientific results in conferences and to publish in scientific journals.

Preferable additional qualifications that will be considered: background in stereochemistry, in absorption/emission electronic spectroscopies, circular dichroism or chiroptical methods.

Applications

Instructions on how to apply can be found at the following website: https://euraxess.ec.europa.eu/jobs/487188
Please include in your application:

- Curriculum vitae including relevant skills, experience and publication list;
- Motivation letter (1 page);
- University transcripts and certificates: Bachelor and Master degrees. For EU Countries, the Diploma Supplement is recommended, see: http://ec.europa.eu/education/tools/diploma-supplement_en.htm ;
- In addition, two reference letters are welcome. The applicant should ask her/his referees to send the letters separately and confidentially to the e-mail address: mg.viola@unipi.it
  The same e-mail address can also be used for informal enquiries regarding the project and the application procedure.

HEL4CHIROLED
European ITN project

Where to send your application:

- University of Rennes – CNRS Natalia del Rio: <natalia.del-rio@univ-rennes1.fr> and in copy (cc) to Maria G. Viola <mg.viola@unipi.it>

Skype interviews will be organized for short-listed applicants in the period **May 4th -June 12th, 2020**.
Ranking of the applicants: not later than **June 26th, 2020**.
Start date: The expected start date of the fellowship will depend on the time for issuing the necessary administrative authorizations and should be between ***September 1st and October 31st, 2020*.**