

CERIC

The **Central European Research Infrastructure Consortium (CERIC)-ERIC** in Trieste, Italy has an opening for a

PhD position in the field of Organic Photovoltaics (OPV): The influence of environmental conditions on absorber layer morphology and interfacial regions

3-year PhD position fully funded by the "Excellent Science" cluster of the Horizon Europe program starting March 1st, 2024.

Research topic/project

Organic photovoltaic (OPV) cells, also known as organic solar cells, are a type of solar cell that converts sunlight into electricity using organic materials such as polymers and small molecules. Although they face challenges in terms of efficiency and durability, OPV cells have the potential to offer a sustainable and eco-friendly alternative to traditional solar cells, with low production costs and design flexibility.

The goal of this project is to determine the influence of environmental conditions on absorber layer morphology and interfacial regions in OPVs. The main tasks include:

- i) Structural characterization by grazing incidence small and wide-angle X-ray scattering measurements, supported by analytical TEM characterizations including elemental mappings to determine details of absorber layer morphology
- ii) Time resolved GISAXS and GIWAXS measurements during the heating of absorber layers to determine critical temperatures above which morphology is changing.
- iii) The chemical assessment of OPV layers and interfaces using FITR microscopy and infrared nanoscopy
- iv) Chemical analysis of the interfaces of the absorber layer will be performed with GIXANES investigations.

The PhD candidate will also be required to participate in the training and workshop organized by the OPVStability MSCA-DN. As a Marie Skłodowska-Curie Actions fellow, the PhD candidate is also expected to contribute your time in the dissemination of your project's result through public engagement and other scientific platforms.

Work Environment

The main part of the work will be carried out at the CERIC – facilities in Trieste, Italy, with Prof. Heinz Amenitsch, and secondment placements will take place at Graz University of Technology (Austria). We offer access to a top infrastructure at the Synchrotron Radiation Source ELETTRA (see picture) in Trieste having an international working environment.



Profile of the candidate

This position is open to all early-stage researchers, who have completed at least four- or five-years education with a Master's degree or Diploma from a recognized University in Chemistry, Physics, Materials Science or in a related field and should possess all the requirements to be eligible for PhD program according to the rules of Graz University of Technology.

We expect excellent, independent research and the ability to enjoy the work in an international and interdisciplinary environment. The applicant is expected to have an excellent command of the English language at a proficient level (spoken and written) and the willingness to learn the local language of the recruiting country.

At the time of recruitment, the applicant must not have resided (or carried out his/her main activity e.g., work, studies, etc.) in Italy, for more than 12 months in the last 3 years immediately prior to the reference recruitment date.

We emphasize equal opportunities in the and support the applications of female candidates in areas where they are underrepresented and encourage female candidates to apply for this program. People with disabilities and who have the relevant qualifications are expressly invited to apply.

Application

To apply for the position, kindly provide: (i) a letter of motivation including a 1-page statement of your research interests, relevant skills and experience; (ii) a CV including publication list; and (iii) names and contact details of three referees willing to write confidential letters of recommendation. All materials should be attached as a single



PDF file (max. size 5 MB). For interested applicants, please submit your application to our job portal using this link: <https://opvstability.breezy.hr/>

Deadline: The closing date for all applications is November 30th 2023.

For direct info about this position contact: Prof. Heinz Amenitsch, (e-mail: amenitsch@tugraz.at)

For further information about OPVStability and the Doctoral Candidate positions, you may visit www.opvstability.eu or you may contact our Project Manager, Dr. Julirose Kourist at opvstability@tugraz.at.