Project – Internship on PV solar systems

Studies from small scale device preparation to large scale solar panel plants development. Ageing studies and degradation factors analysis of Photovoltaic Solar Cells panels

The LPHIA laboratory is focusing on the development of fourth-generation perovskite thin-film solar energy devices on a small laboratory scale (S=1cm2), while Evora is working on solar panels on an industrial scale of several square meters. When moving from laboratory to industrial scale, major new challenges arise and require further development, while taking real-life conditions into account.
Physicists play an essential role in optimizing materials and understanding the fundamental properties of solar cells, while electrical engineers contribute their expertise in the design, integration and performance optimization of large-scale systems.
By bringing together different skills and knowledge, we will be able to build projects that aim to ensure a smooth transition from new laboratory-scale materials to the development of fully functional and reliable solar energy systems.
The aim of proposed internship is to get to exchange knowledge and know how on different PV systems form materials properties and devices preparation to industrial large scale solar plant, to promote the LPHIA's research activities and to define possible collaborations in terms of training and research in the next future.

In Angers we also have an active training program for students in the field of renewable energies (LP-MEEDD). As part of our physics department's strategic development plan, we plan also to build a specialized platform for testing photovoltaic solar panels and related solar energy technologies. Our training and research activities are perfectly aligned with SDG7 and EU Green's priorities, as it contributes to the improvement of renewable energies.
For more information concerning the research activities of the PV – Thin films Group at LPHIA at Angers University please visit the website:
https://sites.google.com/view/mihaelagirtan/publications
https://sites.google.com/view/mihaelagirtan/invited-talks

Hence as part of a future collaboration, student exchanges between Angers and the other EU Green alliance Universities will be envisaged to enhance their training (practical approach).

At the research level, projects will be discussed to use solar energy test platforms and data monitoring in the two or may different regions (Angers and the university partner location), so that sample performance can be assessed on both a small laboratory scale and a larger industrial scale. The climatic difference between the 2 regions will provide a unique opportunity to study the impact of different weather conditions, such as solar irradiation, temperature and humidity, on solar panel performance in real time. These devices could be used as tests and experiments for future research projects: collecting and analyzing data on the efficiency, durability and overall performance of solar photovoltaic systems under different climatic conditions. This will help to improve system design, adapt installation strategies to different environments and improve energy efficiency.

Angers University has a very good reputation for its environment at its attractivity for students.
For more information you can visit the website: http://www.univ-angers.fr
https://www.univ-angers.fr/en/choose-ua/the-university-of-angers.html
https://www.univ-angers.fr/en/choose-ua/the-city-of-angers.html