



Empa - the place where innovation starts

Empa is the research institute for materials science and technology of the ETH Domain and conducts cutting-edge research for the benefit of industry and the well-being of society.

The Laboratory for Thin Films and Photovoltaics is known for its innovative research in the field of inorganic and organic-inorganic hybrid thin film photovoltaic and battery technologies. The Laboratory holds the world record for energy conversion efficiency of Cu(In,Ga)Se₂ (CIGS) solar cells on flexible substrates, which technology is upscaled by a spinoff company of the Laboratory. The lab is also one of the leading players for photovoltaic tandem devices. We are offering a

PhD Student position in the field of thin-film solar cells

We are looking for a student motivated to contribute to the development of thin-film CIGS photovoltaic devices. The researcher in this position is responsible for the fabrication and characterization of solar cells and layers based on the CIGS material system. The researcher goals are to understand and overcome limitations of devices based on new alloyed CIGS absorbers with high bandgap, explore the absorber processing limits and develop electrical contacts, in view of new applications such as bifacial and semi-transparent solar cells for tandem applications.

Your responsibilities include:

- Plan and conduct experiments to develop the scientific understanding and improve the performance of CIGS solar cells
- Devices fabrication using various deposition techniques, notably high-vacuum coevaporation, chemical bath deposition, magnetron sputtering, atomic layer epitaxy and thermal/e-beam evaporation
- Characterization of materials, layers and devices, interpretation of results
- Dissemination of the results in reports, scientific journals and at conferences
- Maintenance of equipment in collaboration with the laboratory technician
- Co-supervision of semester- or master students

Your profile:

- MSc in Material science, Physics, Chemistry, Electrical engineering or similar
- Willingness to conduct independent, target driven research
- Clean and diligent working method including precise record keeping
- Ability to work in a collaborative team environment towards a common goal
- Good interpersonal skills to communicate with colleagues, superiors and stake-holders

We offer an international, highly stimulating research environment with excellent infrastructure and broad interdisciplinary surroundings with plenty of possibilities for personal and professional development. You will work on important and promising solutions to the global energy problem in an international environment.

The starting date is Spring 2023 or upon mutual agreement.

For further information about the position please contact Dr Romain Carron romain.carron@empa.ch and visit our websites www.empa.ch/web/s207 and Empa-Video

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We look forward to receiving your online application including a letter of motivation, CV, diplomas with transcripts and contact details of two referees. Please send the requested documents via email directly to Dr Romain Carron.

The job description was updated from the initial one regarding starting date and modalities of application.