

Vacancy

Research for a sunny future!

Shape the photovoltaic technology of tomorrow in a young and highly motivated team.

The **International Solar Energy Research Center Konstanz** is an institute for photovoltaic research founded in 2005 with currently 50 employees. We are a young but experienced team of scientists who have emerged from the photovoltaic group of the University of Konstanz. We have state-of-the-art process and characterization equipment. In national and international research projects we work together with the leading international institutes and companies in the photovoltaic industry. For more information, please visit www.isc-konstanz.de.

As soon as possible we desire to fill the vacancy of a

**Ph.D. student of physics or materials science:
Metallization of solar cells with ultrafine contact structures**

The position is initially limited to three years (duration of the project).

You belong to a team of scientists, who are investigating the use of pattern transfer printing and innovative solar cell interconnection methods for the production of crystalline silicon solar cells and modules as part of a European project.

The production of fine conductors is a key process for the production of highly efficient solar cells. In the case of industrially manufactured solar cells, silver and aluminum-containing metal pastes are applied by means of screen printing. In order to increase the efficiency, a further reduction of line width, which is not feasible using screen printing hitherto, is necessary. In the pattern transfer printing method metal paste is transferred to the substrate by means of laser irradiation. Lines narrower than 20 μm are feasible with good line geometry. Within the scope of the doctoral thesis, the printing process is to be further developed and the advantages of its application on solar cells will be demonstrated. For this purpose a better understanding and an optimization of the contact-formation process of the metal paste with the substrate as well as an optimization of the cell and its connection to the module are needed.

Your work includes both, independent and team-oriented scientific work, in a combination of simulation, experimental execution and detailed characterization. Within the scope of the European project RefinedPV, you work closely with scientists from two market-leading companies and a start-up. Your results are of high relevance to industrial applications of the method.

You should have a good university degree (master or diploma) in physics, material sciences or a related discipline. Knowledge in semiconductor or solar cell technology, in metallurgy and in laser processes is advantageous. You are ready and able to perform simple repairs and modifications of the printing system.

We expect our employees to be able to work independently and goal-oriented. Moreover, we expect good knowledge of English, both written and spoken, as well as your willingness to travel to visit the project partners and scientific conferences.

The remuneration is based on the provisions of the TV-L. Please send your application with meaningful documents, preferably by e-mail, to the ISC Konstanz e.V., Rudolf-Diesel-Straße 15, 78467 Konstanz; petra.hoffmann@isc-konstanz.de.

For questions, please contact Mr. Jan Lossen: jan.lossen@isc-konstanz.de or 0049 (0)7531 - 36183 - 360.