

# 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](http://www.isc-konstanz.de).

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

**Ph.D. student of physics:  
Carrier-selective contacts on silicon solar cells**

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

You belong to a team of scientists, who develop cost-effective manufacturing processes for charge-carrier-selective contacts on silicon solar cells.

As the efficiency increases, the recombination at the metal contacts becomes the dominant loss mechanism in silicon solar cells. With the concept of charge-carrier-selective contacts based on a thin oxide layer and a doped silicon layer, a path for the reduction of the recombination losses, which is compatible with existing production technology, has been demonstrated. The aim of ISC Konstanz is to develop a cost-effective process for the industrial production of such solar cells. Within the scope of the doctoral thesis, the deposition of the functional layer stack and the application of optimized metal contacts are investigated. The project is carried out in close cooperation with another research institute, a university group and various industrial partners.

**Your tasks:**

- Performance of parametric studies and process optimization using macroscopic device parameters (design-of-experiment) for the production of solar cells with carrier-selective contacts
- Optical and electrical characterization of functional layer systems and solar cells
- Microscopic investigations to reveal the mode of action

**Your prerequisites:**

- Good university degree (master's or diploma) in physics, materials science, micro system engineering or a related discipline
- Knowledge and practical experience in semiconductor or solar cell technology, especially in chemical vapor deposition, in high-temperature processes and wet-chemical processing are advantageous
- You are a passionate experimenter and ready to perform simple repairs and modifications to the CVD system
- Independent and goal-oriented work, high team ability

- A high interest to participate in scientific discourse, by publishing your results in scientific journals and at conferences
- Fluent in English, spoken and written, at least a basic knowledge of German
- Confident manners and strength in presentations

Given the financial situation, an extension of the employment after completion of the Ph.D. is desired.

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](mailto:petra.hoffmann@isc-konstanz.de).

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