

Freie Universität Berlin – Ciência sem Fronteiras (CsF) Program 2015/2016

Open Position for CsF candidates 2015/2016

**Department/Institute:** Institute of Physics

**Subject Area:** Physics

**Name of Supervisor:** **Prof. Dr. Martina Schmid**

**Number of Positions:** 1

**Type of Positions** PhD (Full)

**Project Title:** Concentrating optics for micro concentrator solar cells

**Project Description:** Micro concentrator solar cells are a promising concept to enhance the efficiency of photovoltaic (PV) devices while reducing the material consumption. Whereas concentrator PV is already well known on the large scale, it still needs a lot of adaptation for the micrometer size. An essential task is to adapt the optics for optimal concentration of solar light on micrometer-sized solar cells in accordance with their material specific and electrical boundary conditions. The project will cover both theory and experiment: Lens designs will initially be investigated in theory including ray tracing simulations and combination with optical and thermal properties in a multiphysics model. Then, concentrating optics will also be fabricated and optically characterized which includes building up an according measurement setup. Adaptive optics for solving the light tracking challenges of concentrator solar cells open up a wide field for new ideas and the possibility of significant scientific progress.

**Academic Requirements:** Master in Physics or neighboring field

**Language Requirements:** Very good knowledge of English language (TOEFL 90+ pts or comparable)

**Further Information:** [http://www.helmholtz-berlin.de/forschung/oe/ee/nanooptix/index\\_en.html](http://www.helmholtz-berlin.de/forschung/oe/ee/nanooptix/index_en.html)

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**Further Information on Ciência sem Fronteiras at FU Berlin** [http://www.fu-berlin.de/en/sites/brazil/Ciencia\\_sem\\_Fronteiras/index.html](http://www.fu-berlin.de/en/sites/brazil/Ciencia_sem_Fronteiras/index.html)  
For further questions, please contact the Liaison Office of FU Berlin in São Paulo [saopaulo@fu-berlin.de](mailto:saopaulo@fu-berlin.de).

## Application

<http://www.csf-alemanha.de/pt/>

While applying online via this website, **please make sure to also upload or send a copy of the following documents** to [saopaulo@fu-berlin.de](mailto:saopaulo@fu-berlin.de):

- letter of application and statement of purpose;
- academic CV (including former study programs, internships, publications);
- one or two letters of recommendation of distinguished professors of your university;
- Working plan/research plan.

Some of the above documents are also required by Capes, but FU Berlin needs an **English or German version of each of the listed documents**. The documents are required by the individual institution responsible for the acceptance process. They may enhance your chances to get accepted. A decision cannot be made unless they have fully been transmitted. For further questions, please contact [saopaulo@fu-berlin.de](mailto:saopaulo@fu-berlin.de).