October 16th, 2025

The Zuse Institute Berlin (ZIB) is a non-university research institute under public law of the state of Berlin, dedicated to interdisciplinary research in applied mathematics and data-driven science. Within a collaboration between the department of *Parallel and Distributed Computing* and the research group *Computational Nano Optics*, we are offering a position in the framework of a MATH+ cooperational project of HU Berlin, HZB and ZIB, starting January 1st, 2026, for a

Researcher (f/m/d)

on a part-time basis (75 %, 29,55 hours per week), limited until December 31st, 2028. An increase to a full-time position is intended if corresponding funding becomes available. If the applicant meets the relevant wage requirements and personal qualifications, the salary will be based on remuneration group 13 TV-L of the pay scale for the German public sector.

Background

Photovoltaics (PV) installations reached a global capacity of two terawatt by November 2024, at high rates of growth and cost reduction. However, for further growth of PV, which is necessary for mitigation of climate change, research and technological advances are indispensible. PV relies on converting energy from solar photons to electrical energy. Therefore, topics of high current interest include optical concepts, like nanotextures and metamaterials, reduction of parasitic absoprtion, multijunction solar cells, and shaping of the solar spectrum, as well as color appearance for building integrated PV. State-of-the-art PV devices consist of a complex architecture of various structured layers of semiconductor materials and other materials with specific physical properties. For the design of these structures, suitable numerical simulation and optimization methods are required. This can be problematic due to number of free parameters and due to the computationally costly solution of the forward problem.

Your tasks

- Creation of efficient setups for simulation of absorption and re-emission of photons in thin layers of solar cells, based on existing finite-element simulation tools
- Development of adapted gradient-based optimization methods to improve PV stacks, e.g., with respect to efficiency
- Investigation of ML-based methods for optimizing the color appearance of perovskite solar modules
- Publication of the results in peer-reviewed journals and present them at international conferences

Your profile

- A completed Master's degree in Mathematics, or a related field
- Knowledge in numerics for PDEs and optimization
- Good programming skills
- Good command of spoken and written English

We offer a friendly work environment with flexible work and meeting times, excellent equipment and a challenging professional environment

as well as

- an active onboarding process to provide new employees with the skills and knowledge that are important to their success in our institute and their careers,
- a varied, future-oriented and responsible field of activity,
- professional training opportunities and support in professional development,
- an additional pension scheme (VBL),
- 30 days annual leave, flexible working hours (flexitime),
- a salary based on TV-L (collective agreement for the public service of the federal states) in accordance with qualifications and professional experience with annual bonus payment,
- capital allowance of up to € 150 per month, or alternatively a BVG job ticket plus the remaining balance,
- the use of canteens and sports programs of the Freie Universität Berlin (FUB) at reduced rates.

Applicants with disabilities will be given preference if equally qualified. Female applicants are highly encouraged to apply, since women are under-represented in natural sciences and ZIB seeks to increase the proportion of women in this field.

Please send your complete application including a curriculum vitae in tabular form with a description of previous research/thesis, list of scientific publications and references by **November 9th, 2025** (date of receipt), quoting the **Reference Number WA 27/25** as **one PDF file** to: jobs@zib.de.

For further information about the position, please refer to our website www.zib.de, contact Prof. Dr. Andrea Walther (walther@zib.de) or Dr. Sven Burger (burger@zib.de).

Our private policy statement regarding application data is available at www.zib.de/impressum.

For further job offers please visit our website at www.zib.de/jobadvertisement.