



The Max Planck Institute for Multidisciplinary Sciences is a leading international research institute of exceptional scientific breadth in the fields of biology, chemistry, physics and medicine. With currently 13 departments, over 30 research groups and around 1,000 employees from over 50 nations, it is the largest institute of the Max Planck Society.

The Department of *NanoBiophotonics* headed by Prof. Stefan W. Hell is a world leader inventing and utilizing optical microscopes with resolution at the nanometer scale to advance natural sciences. A key research initiative of the Department is the investigation and improvement of reversibly switchable fluorescent proteins. Together with the Research Group of Prof. Dr. Stefan Jakobs, we invite applications for a

Postdoctoral Researcher (f/m/x)
“Fluorescent Proteins for Live-Cell MINFLUX Microscopy”

MINFLUX (minimal photon flux) microscopy has been established as the state-of-the-art method for nanoscale imaging and microsecond tracking of fluorophores in cells. Live-cell compatible genetically encoded photoconvertible proteins are an exciting avenue for single molecule MINFLUX tracking of target proteins in cells. Custom design of such fluorescent proteins for MINFLUX applications is required for exploration of the scope of this technique for microsecond characterization of protein dynamics in live cells.

The project, thus, focuses on the design and development of a toolbox of switchable fluorescent proteins with photophysical properties tailored for MINFLUX microscopy. We use directed and random mutagenesis to specifically enhance favorable characteristics of fluorescent proteins. New variants will be used to investigate specific cell biological questions using the expertise available in the group.

Requirements

- Candidate must possess an excellent doctoral degree in biochemistry, molecular biology or related discipline.
- Experience with protein design will be a significant advantage You are curiosity-driven and passionate about science.
- Any experience with (super-resolution) light microscopy, image analysis and/or molecular and cell biology is of advantage.
- Most importantly: Enthusiasm, curiosity and the ability to work in a team and take on new challenges.

We offer

- Interesting and varied work in an interdisciplinary environment.
- A wide range of offers to help you balance work and family life: on-campus kindergarten places including vacation care, parent-child offices, etc.
- Further training opportunities and language courses.
- Spacious cafeteria with a wide range of meals.
- Health management: free fitness and yoga room, sports groups, course offerings for a "moving break".
- Initiatives for sustainability and a green environment with a new biotope.

About us

The Research Group headed by Prof. Dr. Stefan Jakobs, is a leading research group in the field of mitochondrial biology as well as the generation of super-resolution compatible switchable fluorescent proteins. The focus of our multidisciplinary group of cell biologists, biochemists and molecular biologists is the exploration of mitochondrial biology using state-of-the-art tools (e.g., MINFLUX microscopy). The group is embedded within the Department of NanoBiophotonics



directed by Prof. Dr. Stefan Hell, the 2014 Nobel laureate for his work on the invention of diffraction-unlimited microscopy.

Position details

We would like to fill the position as soon as possible, but the exact start date is flexible. The payment and benefits are based on the TVöD (wage agreement for public service personnel) guidelines. Positions are initially limited to two years with a possibility of extension.

The Max Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals. The Max Planck Society strives for gender and diversity equality. We welcome applications from all backgrounds.

Application procedure

Applications will be reviewed on a rolling basis until the position is filled. Please submit your application by **02.06.2024** including a cover letter (explaining background and motivation), CV, transcripts, and publication records by e-mail as a single PDF file to:

ausschreibung15-24@mpinat.mpg.de

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Selected Publications

Brakemann et al. (2011) A reversibly photoswitchable GFP-like protein with fluorescence excitation decoupled from switching. *Nat Biotechnol.* 29(10):942-7

Grotjohann T et al. (2011) Diffraction-unlimited all-optical imaging and writing with a photochromic GFP. *Nature*, 478: 204-8.

Balzarotti F et al. (2016) Nanometer resolution imaging and tracking of fluorescent molecules with minimal photon fluxes. *Science*, 355: 606-612

Pape JK et al. (2020) Multicolor 3D MINFLUX nanoscopy of mitochondrial MICOS proteins. *Proc Natl Acad Sci U S A.* 117: 20607-20614.

Wirth OJ et al. (2023) MINFLUX dissects the unimpeded walking of kinesin-1. *Science*, 379(6636):1004-1010

Information pursuant to Article 13 DS-GVO on the collection and processing of personal data during the application process can be found on our website below the respective job advertisement.