



Postdoc Position (m/f/d) | Device development of functional organic semiconductor optoelectronics

Starting with **March, 1st 2025** the Chiral Optoelectronics Lab at the Max Planck Institute for Microstructure Physics in Halle (Saale), Germany, is seeking a motivated Postdoctoral Researcher to join the ERC-funded project *FastE-Chiral*. We are looking for candidates with specific experience in the development of functional organic semiconductor devices, including organic or hybrid materials such as perovskites.

FastE-Chiral aims to develop novel organic optoelectronic devices that enable precise generation, detection, and modulation of chiral light signals, leveraging cutting-edge advancements in materials science and optoelectronic technology. The project integrates material synthesis, thin-film processing, device fabrication, and characterization, creating a highly interdisciplinary environment. This setting provides ample opportunities for both technical and scientific collaboration with fellow researchers, helping to advance your career in both academia and industry.

Chirality science is a highly interdisciplinary field spanning chemistry, physics, and materials science. Therefore, we particularly encourage junior scientists with expertise in one of these areas and a willingness to explore new fields to apply for this position.

Your tasks

- Lead the development of novel functional organic semiconductor devices based on chiral thin film materials.
- Perform device fabrication and characterization and optimize key device figure of merits.
- Collaborate closely with other members of the ERC team to advance the development of functional chiral optoelectronic devices.
- Contribute your expertise to the design of novel strategies for both chiral and non-chiral organic semiconductors.
- Disseminate your experimental findings through publications in scientific journals and oral presentations at international conferences and workshops.

Your profile

Necessary Criteria (You must fulfill all of the following):

- A Ph.D. in physics, materials, or a related field by the appointment date.
- Strong expertise and experience in fabricating and analyzing organic light-emitting devices including both solution-processed materials and evaporated materials.
- Deep understanding of device physics in organic light-emitting device including but not limited to light-emitting diodes and organic lasing.
- Strong expertise of deposition techniques including but not limited to thermal evaporation, e-beam, and sputtering.
- Experience of using semiconductor analyzer and source measure units.
- Experience or understanding of thin film morphologies and characterization methods.
- Ability to work in a results-driven environment with a focus on device applications, typically under set deadlines.
- A strong willingness to work in a multicultural environment.
- Good communication and presentation skills in English for both general audiences and scientists.
- Proficiency in English scientific writing, including but not limited to the preparation of scientific journal articles.

Desirable Criteria (Four or more of the following):

- Experience with fabrication and device characterization of organic semiconductor devices, such as light-emitting diodes, organic lasers, or photodiodes.



- Experience with or a good understanding of chiral optical spectroscopies, including circular dichroism, photoluminescence.
- Coding programs for device characterizations using Python, Matlab or LabView.
- Willingness to explore novel spectroscopy and develop new device structures.
- Willingness to, and/or experience in, supervising Master's or Ph.D. students.
- Experience in conduct experiment at international beamlines for WAXS/SAXS measurement and analyzing results.
- Experience in drafting and applying for research grants.

We offer

- Access to state-of-the-art lab facilities for organic optoelectronic device fabrication and testing.
- Opportunities for professional growth, networking, and international collaboration.
- A supportive and stimulating work environment within a globally renowned research institution.
- Remuneration based on the German public service wage agreement (TVoED-Bund), level 13, which includes comprehensive healthcare coverage and other social benefits.

The Max Planck Institute of Microstructure Physics gives priority to applications from severely disabled candidates with equivalent qualifications. Furthermore, we strive to increase the proportion of female employees and therefore specifically encourage women to apply.

For more details and informal enquiries, please contact Dr. Li Wan (li.wan@mpi-halle.mpg.de). Please send your application including:

- A cover letter
- Your CV, including a publication list (please highlight three of your most significant publications, each accompanied by a 300-word narrative explaining your contribution and the novelty of the work)
- A person specification checklist clearly demonstrating how you meet the necessary and desirable criteria for the job
- Contact details of two scientists who can provide references. If you have no prior postdoctoral experience, one referee must be your PhD supervisor

until **December 31st, 2024** to Dr. Li Wan (li.wan@mpi-halle.mpg.de).