

# Stellenbezeichnung: Scientific researcher for development and application of EUV- and X-ray sources (IOF-2022-93)



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Fraunhofer is the largest organization for application-oriented research in Europe. Our research fields are geared to people's needs: Health, Safety, Communication, Mobility, Energy and Environment. We are creative, we shape technology, we design products, we improve processes, we open up new paths.

The Fraunhofer Institute for Applied Optics and Precision Engineering IOF in Jena conducts application-oriented research on behalf of industry and within the framework of publicly funded joint projects. The range of services offered by the Fraunhofer IOF includes system solutions, starting with new design concepts, through the development of new technologies, manufacturing and measurement processes, to the construction of prototypes and pilot series in the wavelength range from millimeters to nanometers.

For the department Laser and Fiber Technology we are looking for a scientific researcher in the group "Laser Technology" for the independent planning and execution of challenging theoretical and experimental research topics in the field of laser beam sources in the EUV and X-ray spectral range as well as adapted imaging and measurement techniques on the nanometer scale.

The research area includes the investigation and realization of laser-driven secondary beam sources in the EUV and X-ray spectral range as well as their application for tailored, high-resolution, and penetrating 2D and 3D imaging. The research tasks also include the development of new concepts for the control of secondary radiation, new imaging concepts and new data processing strategies.

### What you will do

- Collaboration as well as independent planning of research and development projects, primarily in the field of laser secondary beam sources and related applications
- Use and, if necessary, extension of existing calculation and simulation tools to extend scientific understanding
- Possibility of supporting project acquisition as well as assuming project responsibility
- Active participation in the scientific community through publications in scientific journals and contributions at national or international conferences
- Conducting and supporting experiments with high-power lasers and secondary radiation in the extreme ultraviolet and X-ray range
- Preparing documentation of research results and project reports

### What you bring to the table

- You have a university degree (Dipl.-Phys. / Dipl.-Ing. Sc.) in physics, laser technology, optical technologies, electrical engineering or similar and experience in working with lasers, EUV, or X-ray sources.
- A successfully completed doctorate is desirable. Applicants without a PhD should have relevant experience in the field.
- Ideally, you have knowledge in wave propagation simulation, optics design, generation of extreme ultraviolet and X-ray radiation and its use for high-resolution microscopy, and optical metrology.
- Basic experience in programming in Matlab / Python / Labview or similar is an advantage.
- You are well-versed in the use of relevant IT tools (e.g., Origin, Zemax).
- Your strengths include a high degree of independence, a systematic approach to work, analytical and conceptual skills as well as commitment, team orientation, and communication skills.
- As Fraunhofer IOF works in many different areas on a national and international level, we require a very good knowledge of German and English.
- A friendly, reliable, and open manner completes your profile.

### What you can expect

- A varied job with a modern and well-equipped working environment
- Cooperation in a collegial and open-minded team with a background in physics and engineering
- Personal and professional development opportunities in challenging and practical R&D projects
- Opportunity to actively shape and accentuate your own research focus
- Networking with first-class industrial partners
- Independent work as well as personal and professional development opportunities
- Flexible working hours and a family-friendly workplace

The weekly working time is 39 hours. The position can also be filled on a part-time basis. The position is initially limited to 3 years. We are looking for a long-term cooperation. Appointment, remuneration and social security benefits based on the public-sector collective wage agreement (TVöD). Additionally Fraunhofer may grant performance-based variable remuneration components.

We value and promote the diversity of our employees' skills and therefore welcome all applications - regardless of age, gender, nationality, ethnic and social origin, religion, ideology, disability, sexual orientation and identity. Severely disabled persons are given preference in the event of equal suitability.

**Interested? Apply online now. We look forward to getting to know you!**

Fraunhofer Institute for Applied Optics and Precision Engineering IOF  
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Application Deadline: 10/31/2022

