The Hannover Center for Optical Technologies (HOT), the Cluster of Excellence PhoenixD, and the Faculty of Mechanical Engineering invite applications for the position of a

**Research Assistant (Doctoral/Ph.D. Candidate, m/f/d) in Computational Electrodynamics and Photonics Inverse Design for Integrated Optics (Salary Scale 13 TV-L "FwN", 100 %)**

to be filled as soon as possible. The position is initially limited to 2 years, but extension is possible, and provides the opportunity for further academic qualification, such as a doctoral degree.

**Responsibilities and duties**
The selected candidate will work on the inverse design of integrated optical systems in 3D. This includes integrated waveguides, polarizers, beam couplers, mode converters, multiplexers/demultiplexers, and on-chip metasurfaces, also in presence of optical tunability. You will use and further develop an existing computational electrodynamics software based on the finite-difference time-domain method and implement inverse design techniques in the time and frequency domain. You will employ high-performance computing techniques for large-scale simulations and topology optimization based on the adjoint method for the design of large-scale devices. You will also collaborate with other groups in the Cluster of Excellence PhoenixD.

**Hiring requirements**
Applicants to the position must have a relevant scientific university degree (Diploma or Master), for example, in physics, optics and photonics, electrical engineering, computer science, or a related field. The ideal candidate must have a strong background in programming (C or C++), optics/photonics/nanophotonics, and computational electromagnetics. Please, motivate how these requirements are met in the cover letter. You should be willing to work together with experimental collaborators for the realization and validation of your designs. You enjoy developing solvers and numerical techniques for the solution of complex physics problems, also exploiting supercomputers and GPUs. In addition, excellent communication skills in English, oral as well as written, are expected.

**Our offer**
As a member of our international team, you have the opportunity to sharpen your scientific profile in a dynamic and excellent research environment and advance in your professional career. We offer a scientifically and intellectually inspiring atmosphere at a leading technical university with a long tradition of research in optics and photonics.

The Leibniz University Hannover is home to several specialised institutes and organisations in this fast-evolving research field, e.g. the Cluster of Excellence PhoenixD (Photonics, Optics, and Engineering, Innovation Across Disciplines), the HOT - Hannover Centre for Optical Technologies and the newly founded Leibniz School of Optics & Photonics. PhoenixD alone comprises of more than 100 scientists from the fields of physics, mechanical engineering, chemistry, electrical engineering, computer science and mathematics. Concerning teaching, students benefit from the existing Master’s degree programme Optical Technologies and a Bachelor’s programme in Optics & Photonics.
Leibniz University has a long track record of successful spin-offs in the field of optical technologies. Quite a few specialised companies reside in the Hannover region, and many of them have close ties with the university. An internationally well-known non-profit research institute for photonics and laser technology is the Laser Zentrum Hannover e.V. (LZH).

Leibniz University Hannover considers itself a family-friendly university and therefore promotes a balance between work and family responsibilities. Part-time employment can be arranged upon request.

The university aims to promote equality between women and men. For this purpose, the university strives to reduce under-representation in areas where a certain gender is under-represented. Women are under-represented in the salary scale of the advertised position. Therefore, qualified women are encouraged to apply. Moreover, we welcome applications from qualified men. Preference will be given to equally-qualified applicants with disabilities.

For further information, please contact Ms. Carmen Wassermann in the office of Prof. Antonio Calà Lesina.

Please submit your application together with your Curriculum vitae, transcripts (degree certificates and grades), the names of two references and a cover letter focusing on how the "must-have" hiring requirements are met by September 30th, 2023 in electronic form to

Email: office-calalesina@hot.uni-hannover.de

or alternatively by mail to:
**Gottfried Wilhelm Leibniz Universität Hannover**
HOT - Hanover Centre for Optical Technologies
Nienburger Str. 17
D-30167 Hannover
http://www.uni-hannover.de/jobs

Information according to Article 13 GDPR for the collection of personal data can be found at https://www.uni-hannover.de/de/datenschutzhinweis-bewerbungen/