Join and help us make a difference in the world of laser technology

Scientific associates in the field of laser beam shaping

Join our team at the Institut für Strahlwerkzeuge (IFSW), University of Stuttgart, where we are looking for individuals with a passion for lasers, optics, and photonics. Our institute is committed to shaping the global progress of laser technology in manufacturing through cutting-edge research and teaching. Our vision is to make laser technology universally applicable in manufacturing, and with our location in Stuttgart - one of the major industrial sites in Germany - we collaborate with a wide range of companies, from international players to small startups, in industries such as automotive, optics, photonics, manufacturing, healthcare, and semiconductor technology.

We are looking for a candidate to join our team in the field of laser beam shaping using spatial light modulators. The position will involve working on two applications:

Firstly, we aim to enhance the design flexibility of two-photon polymerization (2PP), a 3D printing technique, through the use of beam shaping technology. Moreover, we intend to accelerate the 3D printing, including 2PP, to enable it to be used in high-volume series production. However, controlling all degrees of freedom using a standard design of experiments (DOE) is challenging due to the "curse of dimensionality." To address this challenge, we will employ cutting-edge machine learning techniques.

Secondly, we plan to apply beam shaping in joining techniques involving wide band gap semiconductors and dielectrics that are transparent to the processing laser wavelength. By using ultra-short laser pulses, nonlinear absorption occurs in the focal volume located at the materials' interface. However, wide band gap semiconductors are highly dispersive, which can lead to focus distortion due to aberrations. To correct this problem, we will use spatial light modulators for wavefront tailoring.

We provide:
- Option to pursue a PhD
- Salary of TV-L 13 (100 %)
- Family-friendly working environment
- Strong academic and industrial connections
- Opportunities to expand your professional network

You provide:
- A Master's degree in Engineering, Physics, or equivalent
- Knowledge in Lasers or Optics is advantageous
- Capability to work independently
- Enthusiasm to acquire new knowledge

The University of Stuttgart would like to increase the number of women in the scientific field and is therefore particularly interested in applications from women. Severely disabled persons are given priority in the case of equal suitability. The employment process of scientific employees is carried out by the university’s central administration.

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