



The **Kurt Schwabe Institute for Measuring and Sensor Technology e.V. (KSI) Meinsberg** has a longstanding expertise in the fields of basic and applied research on novel sensor materials, sensor devices and scientific instrumentation. Main competences are in the fields of physical chemistry, electrochemistry, solid-state electrolytes, biological and physical sensors as well as environmental monitoring. The institute is well equipped with modern lithographic and bottom-up methods for the synthesis of functional nanostructures as well as with state-of-the art methods for their characterization. The KSI currently establishes a new research group, led by Dr Caroline Murawski, to utilize the advantages of organic semiconductors for developing new sensors that can be applied in biology, chemistry, and medicine. Being located close to Dresden, in Saxony, Germany, the KSI is situated within the largest R&D and manufacturing hub for organic semiconductors in Europe. Strong links exist with the *Excellence University of Technology Dresden (TU Dresden)* and close collaboration with the *Dresden Integrated Centre for Applied Physics and Photonic Materials (IAPP)* is anticipated.

To strengthen the organic semiconductors research at KSI Meinsberg, we invite applications for a

PhD candidate (f/m)

(Pay scale 75 % TV-L E13)

with focus on **new applications of organic LEDs in biophotonics and sensing.**

Topic

Organic semiconductors provide unique properties such as flexibility, micro-structuring, ease of fabrication, scalability, and bio-compatibility. Most prominently, organic semiconductors were employed in organic light-emitting diodes (OLEDs), which overcome current limitations of LCD displays due to their low power consumption, high contrast, and wide angular stability. However, the advantages of OLEDs over traditional light sources are not only interesting for displays and lighting but make them also highly attractive for novel applications in biophotonics and sensing, where high pixel density, miniaturization and biocompatibility are required.

Your topic will build on the experience of Dr Murawski in new applications of OLEDs for stimulating cells and living organisms using optogenetics. You are expected to tailor the OLED properties towards new applications and test the developed devices in biological and chemical environments. The topic comprises electrical and optical investigations of fabricated OLEDs, device modelling, material analysis, micro-structuring by lithographic techniques, and interfacing with living organisms, but also leaves room for development depending on own interests. The work is highly interdisciplinary being situated at the interface between physics, chemistry, biology, and engineering.

Profile

Master degree (or similar) in physics, chemistry, materials science or other relevant disciplines is required. The candidate should have a strong experimental background with profound theoretical knowledge in solid state materials, semiconductor physics and optics, and a keen interest in applied science. Experience in organic electronics, nano-/microstructuring, biophysics, or sensing are highly welcome. Good communication skills with a high command on English and/or German in speech and writing is essential.

Offer

We offer you a position in the group of Dr Murawski, working in a renowned research institute that is very well equipped with state-of-the-art experimental facilities. Dr Murawski is an expert in organic LEDs with international research experience and a proven track record. We will provide a stimulating work environment with the opportunity to meet and collaborate with leading experts in the field. Attendance at international conferences will be provided and publication of research in international scientific journals is expected. Due to the interdisciplinary nature of the post, you will benefit from the diverse background of your colleagues and receive intense scientific and instrumental training.

The KSI is committed to equal opportunities and diversity in the work place. Applications are welcome from everyone matching our search profile, not depending on gender, nationality, ethnicity, or disability.

Salary and contract

The position is fixed term for **3 years** at 75 % of full working hours, and will **start November 2018**, or as soon as possible thereafter. Duration of employment will be according to German law (WissZeitVG). Payment will be received according to the law of public service at pay scale E 13 TV-L and will be due to reductions including tax, social insurances and retirement benefits (depending on personal conditions). This also gives access to the excellent German social health and insurance system.

Interested?

For more information please contact Dr Caroline Murawski, email:

caroline.murawski@ksi-meinsberg.de

Applications should include a letter of motivation, curriculum vitae with copies of degrees (Bachelor/Master/Diploma) and contact details for 2 academic individuals who can provide recommendation letters.

Applications shall be sent before **October 31st, 2018**, to Dr Murawski as a single pdf file.