Job advertisement Junior Research Group Leader

The Kurt Schwabe Institute for Measurement and Sensor Technology Meinsberg e.V. (KSI Meinsberg) is a non-profit research institution run as a state institute of the Free State of Saxony with proven, long-standing experience in basic and application-oriented research in the field of sensor technology, including research into new sensor materials and investigations into scientific instrumentation. KSI Meinsberg is a member of the DRESDEN-concept research alliance and works closely with the Technical University of Dresden.

The main competences of the institute are in the fields of physical chemistry and electrochemistry, solid electrolyte sensor technology, biophysical sensor technology, environmental analysis as well as organophotonic sensor technology for medical applications. The institute consistently focuses on miniaturisation in sensor and analysis technology. It is equipped accordingly with modern lithographic or additive methods for the production and characterisation of functional nanostructures.

KSI Meinsberg is currently setting up a junior research group in the field of "Digital Intelligent Sensor Systems (DIS)". The technical focus is on the sustainable development of miniaturised and autonomously operating sensors and sensor systems for continuous use on site with intelligent data analysis and data transmission systems as well as sophisticated energy management.

In this context, the following position is to be filled immediately on a temporary basis for a maximum of five years:

Junior Research Group Leader (m/f/d) (Pay scale 100 % TV-L E14)

Your tasks:

- Establishment and management of the junior research group with two additional staff members at the time of establishment (see below)
- Design and development of sensor platforms as a unit of sensor, electronic hardware and software as well as data transmission, storage and processing
- Special focus is on research into highly miniaturised, ultra-low-power systems for autonomous operation, their energy supply and their connection to cloud- or server-based data structures.
- Opening up new areas of application for autonomous sensors, especially for use in environmental analysis, agriculture and medical technology, the latter for example as point-of-care diagnostics, wearable, attachable or as an implant.
- Data analysis, classification and reduction with AI methods also as embedded AI
- Integration of autonomous sensors or sensor systems into process control loops and real-time systems, e.g. for monitoring water bodies and agricultural land or for veterinary or medical patient monitoring and therapy
- Establishment of new research and development areas of miniaturised autonomous sensors and sensor systems, taking into account specific sustainability aspects.
- Development and acquisition of further basic and application-oriented projects with national and European funding bodies

Your profile:

- Studies and doctorate in the fields of electrical engineering, computer engineering, medical technology or comparable.
- Proven expertise in a selection of the following areas:
Knowledge of analogue and digital circuit technology, especially for sensory applications, consisting of sensor control and signal acquisition
Development of highly miniaturised electronics for autonomous systems, also as integrated solutions (system-on-chip)
Communications engineering for near- and far-field communication between autonomous systems and cloud- or server-based databases
Energy supply of autonomous sensor platforms through batteries, energy harvesting or external energy transmission
Signal processing, feature extraction and classification of sensor signals with AI methods
Mastery of relevant model-based design principles, CAD tools and software for signal analysis and processing

- The recruitment criteria depend primarily on evidence of previous innovative research activity, academic performance including publication activity in high-ranking scientific journals or successful activity in industry, evidenced by product developments and patents, as well as the potential to establish an independent research topic and fruitful scientific collaborations
- We expect a professionally convincing leader who forms the junior research group in a targeted manner and represents it externally
- Experience in acquiring public funding projects is desirable
- Very good written and spoken English and German

We offer:

- Interesting, wide-ranging and responsible activity with great creative freedom
- An excellent scientific environment, i.e. a well-developed equipment infrastructure, modernly equipped development workshop and long-standing experienced and competent staff at the institute
- Very good opportunities for scientific cooperation with Saxon universities and leading non-university research institutes
- In the case of special aptitude, opportunities for professional qualification, such as doctorate or habilitation
- Pleasant working atmosphere with a highly motivated team
- Employment, remuneration and social benefits according to the collective agreement for the public service of the Länder (TV-L)

In the event of equal suitability, ability and professional performance, applications from severely disabled persons shall be given special consideration in accordance with the provisions of the Social Code IX.

The advertisement will continue until the positions are filled. For full consideration, applications should be submitted by 15 January 2024.

Meaningful applications including curriculum vitae, certificates, list of publications, references and, for the junior research group leader, the planned group concept should be sent by e-mail summarised in a PDF document to:

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