

Postdoc Position on developing a textile sensor to monitor tissue oxygenation in humans based on near-infrared spectroscopy

Topic: Pressure injuries are injuries of the skin and the underlying tissue that result from a reduced blood circulation and tissue oxygenation due to pressure load. They affect in particular persons with impaired movement abilities, such as paraplegics or patients under anaesthesia or in an ICU. They are a severe burden for patients, heal slowly and the treatment is complex and costly. The aim of this interdisciplinary SNSF Bridge Discovery project is to build monitoring devices to prevent pressure injuries. We will build wearable, textile near-infrared sensor to monitor non-invasively skin and muscle oxygen concentration in healthy subjects and patients. The sensor needs to be precise, reliable and fully applicable in a clinical setting. The work consists of developing the novel device, hardware and software development, testing of the device first in phantoms and later in humans.

The position is open starting April 2019 or by agreement.

Requirements: We are looking for a physicist or engineer with a PhD in Biomedical Photonics. The candidate (f/m) should have profound experience in tissue imaging, hardware of biomedical optical imaging devices, biomedical signal analysis, numerical simulations, mathematical background (diffusion equation and its solutions, finite element methods, matrices), some practical workshop skills as well as a publication record. Experience working with clinical partners is of advantage. We seek in a postdoc enthusiasm for leading-edge research, team spirit, and the capability for independent problem solving.

Language requirements: English and German or the willingness to learn German.

We offer: The project offers an interdisciplinary environment at the crossroad of medical applications, engineering and physics. The project is particularly attractive, because it includes the whole process from development to clinical application. Appointment is for ≥ 24 months.

Applications: Please send your application in one merged PDF, including a short cover letter with a statement of research interest, CV, publication list, relevant certificates (degrees and grades) and the names and contacts of 3 references to ursula.wolf@ikim.unibe.ch. Salary will be paid according to Swiss National Science Foundation standards.

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