1 Advertisement

Post Title: Research Fellow in Electronic Textiles
School/department: School of Engineering and Informatics - Department of Engineering and Design - Sensor Technology Research Centre
Hours: Full time considered up to a maximum of 1.0 FTE
Requests for flexible working options will be considered (subject to business need).
Contract: Fixed term for 12 months
Reference: 8363
Salary: Starting at £35,333 to £42,155 per annum.
Placed on: 24 October 2022
Closing date: 15 November 2022. Applications must be received by midnight of the closing date.
Expected Interview date: TBC
Expected start date: As soon as possible

The Sensor Technology Research Centre at the University of Sussex is looking for a researcher to collaborate with a local company, and to work on a research-intensive industry funded project on the development of novel tools for shape sensing. This project aims to develop a textile sleeve with an integrated array of stretchable sensors. The goal is to dynamically quantify the shape of the body parts covered with the textile sleeve, and hence to offer a digital alternative to traditional plaster cast molds. Your role will be to support the creation of arrays from deformable strain sensors, and to integrate these sensor arrays into flexible and stretchable textile structures, as well as to characterize the resulting smart textiles. In addition, an electrical interface to connect the electronic textile to the outside world, e.g. a PC or a smartphone has to be developed. In this project the successful candidate will work in close collaboration with two other researchers, responsible for the sensor fabrication, and the data visualization, respectively.

Key Requirements. This post is well suited to a highly motivated individual with excellent technical skills, significant experience with flexible sensors, and smart textiles.

Candidates should have a PhD (or will shortly be assessed for a PhD) in electronics engineering, mechatronics, textile engineering or an equivalent field combining, and a strong background in smart textiles, and sensors / sensor conditioning.

An established expertise in the application of research outcomes in the healthcare sector is desirable. The candidate should have a strong interest in the development and fabrication of novel electronics and their unobtrusive integration into body worn devices.

Background. The Sensor Technology Research Centre at the University of Sussex works on the interface between engineering, computer science, and physics to develop innovative sensor systems for applications in sports, healthcare, or wearable electronics.
Advantages and career development. This position is ideally suited for somebody who wants to broaden his/her knowledge on the application of sensors in wearable and flexible electronics to support patients and professionals in the healthcare sector. It is an ideal opportunity to work on a project with a direct link to a local industrial healthcare company.

Please contact Niko Münzenrieder (n.s.munzenrieder@sussex.ac.uk) for informal enquiries.

The University is committed to equality and valuing diversity, and applications are particularly welcomed from women and black and minority ethnic candidates, who are under-represented in academic posts in Science, Technology, Engineering, Medicine and Mathematics (STEMM) at Sussex.

Please note that this position may be subject to ATAS clearance if you require visa sponsorship.

For full details and how to apply see our vacancies page

The University of Sussex values the diversity of its staff and students and we welcome applicants from all backgrounds.

2. The School / Division

Please find further information regarding the school/division at www.sussex.ac.uk/engineering

3. Job Description

Job Description for the post of: Research Fellow in Electronic Textiles

Department: Department of Engineering and Design

Section/Unit/School: School of Engineering and Informatics

Location: Sensor Technology Research Centre

Grade: 7.1

Responsible to: Principal Investigator through to Head of School

KEY RESPONSIBILITIES

1. Research, Scholarship & Enterprise
1.1 Contribute to research projects in collaboration with others.
1.2 Analyse and interpret findings and draw conclusions on the outcomes.
1.3 Individually or with colleagues, explore opportunities for enterprise activity, knowledge exchange income and/or consultancy, where permissible.
1.4 Build internal contacts and participate in internal networks and relevant external networks in order to form relationships and collaborations.
1.5 Continually update knowledge and understanding in field or specialism and engage in continuous professional development.
2. **Teaching & Student Support**
   2.1 Undertake teaching duties, if required.
   2.2 Assist in the assessment of student knowledge and supervision of student projects if required.

3. **Contribution to School & University**
   3.1 Attend and contribute to relevant School and project meetings.
   3.2 Undertake additional duties, as required by the Principal Investigator and/or Head of School.

4. **Role-specific duties**
   4.1 Develop deformable sensors for strain, pressure, and other modalities.
   4.2 Design and fabricate polymer substrates for deformable sensors with tailored mechanical, chemical, and electrical properties.
   4.3 Use cleanroom processing, and 3D printing to fabricate sensors.
   4.4 Integrate sensors into textiles.
   4.5 Evaluate the mechanical and electrical performance of the developed devices and systems.
   4.6 Build wearable sensor systems based on flexible sensors, and sensor arrays.
   4.7 Support a potential commercialization of the developed technologies.
   4.8 Publish scientific results in high quality journals and present your work at international conferences.
   4.9 Generate innovation ideas which may result in patents.
   4.10 Exchange expertise with PhD students and colleagues.
   4.11 Collaborate with the industrial partner, generate deliverables and reports and assist with flow of information among stakeholders.

This Job Description sets out current duties of the post that may vary from time to time without changing the general character of the post or level of responsibility entailed.

**INDICATIVE PERFORMANCE CRITERIA**
- A completed PhD, (or being in the final phase of the PhD studies) in mechatronics, electronics engineering, textile engineering or a related field
- Experience with electronic and/or smart textiles.
- Initiating, developing or participating in links between the University and external bodies such as business and industry, the professions, community organizations and policy-makers.
- An excellent track record of relevant scientific publications
- Experience with functionalized elastomers.
- Experience with electronic sensors and sensor readout systems.
- Experience with flexible electronics.
- Experience in the electrical and mechanical characterization of devices.

4. **Person Specification**
ESSENTIAL CRITERIA
1. Educated to MSc or doctoral level, or other equivalent qualification, as appropriate to the discipline (see role-specific criteria below).
2. Evidence of engagement in high-quality research activity.
3. Excellent presentation skills, with the ability to communicate effectively, both orally and in writing, with students, colleagues and external audiences.
4. Ability to work individually on own initiative and without close supervision, and as part of a team.
5. Ability to exercise a degree of innovation and creative problem-solving.
6. Excellent organisational and administrative skills.
7. Ability to prioritise and meet deadlines.
8. Excellent IT skills.

ESSENTIAL ROLE-SPECIFIC CRITERIA
1. A degree in mechatronics, electronics engineering, textile engineering or a related field.
2. Experience in the fabrication and characterization of electronic textiles.
3. Experience with integrating sensors into textile structures.
4. Experience with interfacing electronic sensors in textile structures.
5. Experience with electrical strain or pressure sensors.
6. Experience of writing high-quality technical reports and publications.

DESIRABLE CRITERIA
1. Experience in the fabrication and characterization of deformable mechanical structures.
2. Experience with flexible electronics.
3. Experience of generating research or knowledge exchange income.