

## Job Description

### Research Associate

<b>Salary:</b>	Grade 7
<b>Contract:</b>	Full time, fixed term
<b>School/Department:</b>	School of Engineering
<b>Location:</b>	Canterbury Campus
<b>Responsible to:</b>	Dr Chao Wang

### Job purpose

The Research Associate will apply state-of-the-art optical fibre sensing techniques to develop an innovative solution for condition monitoring of high temperature fuel cells for aviation application.

This project is funded by an Aerospace Technology Institute (ATI) programme “AFCAD (Advanced Fuel Cells for Aviation Decarbonization)” No.10097017, led by industrial partner ZeroAvia. This presents a great opportunity for individuals to pioneer the development of cutting-edge optical sensing technologies and engage in collaborative ventures with industrial partners for comprehensive technology validation.

The position demands a substantial degree of self-management, complemented by regular progress meetings under the guidance of the primary supervisor, Dr Chao Wang, and co-supervisor, Dr Bo Li. An adept problem-solving mindset is essential for achieving project deliverables, and the role entails devising and executing work plans that culminate in the drafting and subsequent submission of manuscripts to esteemed academic journals.

### Key accountabilities

- To meet the objectives of the relevant project work packages according to the direction of the investigators. New technologies will result which will be integrated with the work of other project researchers.
- To support the research of other team members under the direction of the principal investigator. To enable the successful practical undertaking of research by others.
- To contribute internal research progress meetings with other partner investigators and researchers.
- To read literature and share appropriate articles with the investigator team. Regular literature reviews should be undertaken.

### Key duties

The following are the main duties for the job. Other duties, commensurate with the grading of the job, may also be assigned from time to time.

- To undertake autonomous research, according to the direction of the investigators. Simulations, prototypes and results for internal consideration will be produced.

- To record and write up research in association with research colleagues and investigators. To prepare and submit manuscripts to journals and conferences.
- To help and advise postgraduate students and undergraduate students with cognate research projects at the request of the principal investigator.
- To facilitate effective training and technical achievements.
- To prepare regular progress reports for presentation to the project management team.
- To read papers, discuss with others and share papers for investigators and other researchers. Paper literature searches, and electronic sharing will result.

## Internal & external relationships

**Internal:** The principal and Co-Investigators in the School of Engineering. Other Research Associates, postgraduate, and undergraduate students in the Communications Group of the School of Engineering

**External:** Industrial Lead: ZeroAvia, Academic Partners: The University of Sheffield Advanced Manufacturing Research Centre (AMRC), C-Alps in Coventry University

## Health, safety & wellbeing considerations

This job involves undertaking duties which include the following health, safety and wellbeing considerations:

- Regular use of Screen Display Equipment
- Repetitive limb movements
- Working with machinery
- Working with chemicals (inc. requirement to wear latex gloves and inc. work with CO<sub>2</sub> or N<sub>2</sub> gasses)
- Biological Agents/Scientific Hazards (experiments/lasers etc, and waste/sewage)

## Person specification

The person specification details the necessary skills, qualifications, experience or other attributes needed to carry out the job. Applications will be measured against the criteria published below.

Selection panels will be looking for clear evidence and examples in an application, or cover letter (where applicable), which back-up any assertions made in relation to each criterion.

### Essential Criteria:

- PhD/equivalent and/or equivalent experience in Electronic Engineering with Photonics experience (A)
- Experience in optical fibre sensors and optical fibre systems (A, I)
- Experience in drafting, editing and submitting research articles as main author (A, I)
- Experience in fabricating prototypes to validate designs experimentally (A, I)
- Experience of determining research methodologies in association with a supervisor (A, I)
- Excellent team working skills (I)
- Excellent self-management and organisational skills (I)
- Be prepared to travel within the UK to visit the industrial partner (I)

- Firm commitment to achieving the University's vision and values, with a passion for a transformative student experience and multidisciplinary, impactful research (I)
- Commitment to deliver and promote equality, diversity and inclusivity in the day to day work of the role (I)

**Desirable Criteria:**

- Experience in optical fibre sensing technologies for energy-related applications (A, I)
- Experience in using simulation software for design and optimisation (A, I)
- Experience of alignment of free space optics (A, I)
- Be prepared to travel within the UK and abroad to conferences to present work (I)

*Assessment stage: A - Application; I - Interview; T - Test/presentation at interview stage*