



## 1 Advertisement

**Post Title:** Research Fellow in 2D Materials for Gas Sensing

**School/department:** MPS

**Hours:** Full time. Requests for flexible working options will be considered (subject to business need).

**Contract:** Fixed term for 2 years

**Reference:** 6286

**Salary:** starting at £33,797 to £40,322 per annum, pro rata if part time

**Placed on:** 13 July 2021

**Closing date:** 4 July 2021. Applications must be received by midnight of the closing date.

**Expected interview date:** Beginning of September

**Expected start date:** September 2021 or asap

Applications are invited for a Research Fellow in 2D Materials for Gas Sensing to join the Materials Physics group led by Prof. Alan Dalton. The role is part of a major industrially-funded project which aims to develop liquid-processed 2D materials for a range of real-world applications.

The candidate will undertake a research project aiming to develop 2D materials as chemiresistive gas sensors for sensitive and selective detection of gases including simulants of chemical warfare agents.

Specifically, the candidate will contribute to research in liquid-phase exfoliation of 2D materials, deposition of nanosheet networks, chemical and electrical characterisation, and chemiresistive gas sensing measurements.

The candidate will also contribute to wider research objectives in the group including development of materials for printed electronics, electrochemical devices and energy storage.

Please contact Prof. Alan Dalton [a.b.dalton@sussex.ac.uk](mailto:a.b.dalton@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 <http://www.sussex.ac.uk/mps/>

## **3. Job Description**

Job Description for the post of: Research Fellow in 2D Materials for Gas Sensing

**Department:** Department of Physics and Astronomy

**Section/Unit/School:** MPS

**Location:** Brighton

**Grade:** Research Fellow I, Grade 7

**Responsible to:** Principal Investigator

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The candidate will undertake a research project aiming to develop 2D materials as chemiresistive gas sensors for sensitive and selective detection of gases including simulants of chemical warfare agents. Specifically, the candidate will contribute to research in liquid-phase exfoliation of 2D materials, deposition of nanosheet networks, chemical and electrical characterisation, and chemiresistive gas sensing measurements. The candidate will also contribute to wider research objectives in the group including development of materials for printed electronics, electrochemical devices and energy storage.

### **PRINCIPAL ACCOUNTABILITIES**

1. To engage in individual and/or collaborative research activity resulting in high-quality publications; and to develop research funding and knowledge exchange income individually or in collaboration with others, as appropriate, depending on the size and scope of the bid.

### **KEY RESPONSIBILITIES**

- 1. Research, Scholarship & Enterprise**

- 1.1 Develop research objectives and proposals for own or joint research, at acceptable levels, with assistance if required.
- 1.2 Conduct research projects individually and in collaboration with others.
- 1.3 Analyse and interpret research findings and draw conclusions on the outcomes.
- 1.4 Produce high-quality research outputs for publication in monographs or recognised high-quality journals, or performance/exhibition, as appropriate, and contribute to the School's REF submission at acceptable levels of volume and academic excellence.
- 1.5 Contribute to the preparation of proposals and applications to external bodies, for example for funding purposes.
- 1.6 Individually or with colleagues, explore opportunities for enterprise activity, knowledge exchange income and/or consultancy, where permissible.
- 1.7 Build internal contacts and participate in internal networks and relevant external networks in order to form relationships and collaborations.
- 1.8 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.
- 2.3 Assist in the development of student research skills, for example as part of a postgraduate supervision team.

## **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 Undertake research into production, processing and properties of networks of liquid-exfoliated 2D materials.
- 4.2 Develop materials into prototype devices for collaborator evaluation.
- 4.3 Prepare presentations and reports for industrial partners and funders.

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.

#### **4. PERSON SPECIFICATION**

##### **ESSENTIAL CRITERIA**

1. Normally educated to doctoral level, or other equivalent qualification, or appropriate level of experience, 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. Experience of production and processing of solution-processed nanomaterials.
2. Experience of characterisation of solution-processed nanomaterials.
3. Experience of electrical measurements of solution-processed nanomaterials.

##### **DESIRABLE CRITERIA**

1. Experience of working with solution-processed 2D materials.
2. Experience of chemical sensing measurements.
3. Experience of chemical functionalisation of solution-processed nanomaterials.

