# Job Description – EPSRC DTP Internship: Exploring gaseous emissions in applied smouldering systems

*“EPSRC’s Vacation Internships scheme gives undergraduate students a taster of what it is like to do research. The students are given practical, first-hand experience of working on and carrying out research in a UK university.”*

Source: [Internships and placements – UKRI](https://www.ukri.org/councils/epsrc/career-and-skills-development/studentships/flexibility-for-funders/internships-and-placements/)

To be eligible for an EPSRC Vacation Internship you **must**:

* be an undergraduate or Masters student in a STEM subject area.
* not have completed your degree studies before the planned end of the internship. An internship should generally take place in the summer vacation **before** your final year of study.
* have a right to work in the UK and carry out the placement whilst resident in the UK. We are **not** able to sponsor visas for the internship.

**About the Role**

This project will use experiments, analytical techniques, and existing datasets to better understand the gaseous emissions from applied smouldering. A combination of approaches may be needed to better understand the gaseous emissions in smouldering systems. Laboratory smouldering experiments will be used to generate a novel dataset of emissions gathered using in-house FTIR and GC-MS instruments – which will characterise various key constituents (e.g., CO2, CO, NOx, SOx). These experiments will follow published methods and track temperatures, pressures, and mass loss rates. Post-treatment smouldering samples generated may also be analysed via various surface analytical techniques (e.g., XRD, XPS, FTIR, and SEM-EDS) – which will shed light on potential value in the post-treatment material. All experimental analyses can be paired with a large dataset of existing smouldering experiments. This dataset has valuable information to better understand smouldering, e.g., emissions and temperature measurements.

Altogether, this role will be laboratory-based and require strong adherence to health and safety practices, diligent experimentation, and excellent attention to detail.

The role will develop skills and experience in:

* Developing core competencies needed for CIWEM and CEng certifications
* Environmental engineering laboratory skills that are highly transferrable
* Team building and communication skills among fellow lab-users and collaborators

**About the Unit**

**Environmental engineering** is all about designing a responsible interface between the natural environment and human activities.  This challenging task encompasses a broad range of topics and integrates many engineering disciplines – e.g., civil, mechanical, chemical – with environment and natural sciences. Environmental engineering therefore requires collaboration among many disciplines, which is a major strength at the Open University.

**Key Responsibilities**

* Conduct laboratory smouldering experiments to generate data on emissions measurements in applied smouldering systems
* Analyse produced data to identify trends
* Report writing on key findings
* Presenting experimental findings to internal team members and external collaborators

**Skills and experience**

Essential:

* Access to a computer/laptop, the Internet and Microsoft Office applications
* Commitment to excellent laboratory health and safety practices

Desirable:

* Interest in environmental engineering
* The ideal candidate will have a background in engineering and environmental sciences and exhibit a high degree of independence and initiative
* Previous laboratory experience, particularly with thermochemical techniques, will be considered a strong asset
* This project can be tailored to the specific background and interests of individual applicants

If you would like further details about the role before making an application, then please email stem-research-student-support@open.ac.uk quoting the reference number and job title.