

**JOB DESCRIPTION**

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| **Job Title:** Post Doctoral Research Associate in Tritium Breeding | **Present Grade:** 7 |
| **Department/College:** School of Engineering | |
| **Directly responsible to:** Dr. Samuel Murphy | |
| **Supervisory responsibility for:** Some supervision of postgraduate students | |
| **Other contacts** | |
| **Internal:**  Prof. Malcolm Joyce (Engineering), Dr. Jackie Pates (LEC) | |
| **External:**  Prof David Armstrong (Oxford University) and Dr. Richard Pearson (Kyoto Fusioneering). | |
| **Major Duties:**   1. Design and construct a tritium breeder prototype and perform post irradiation analysis. The initial role will be to work with Kyoto Fusioneering to design the tritium breeder prototype using neutronics simulations in OpenMC. Develop a diagnostic system consisting of In/Au and Li2CO3 to determine tritium production and neutron flux in the prototype during irradiation. Perform post irradiation analysis of prototype using ultra low level liquid scintillation and gamma ray spectroscopy. The final part of the project will be to prepare samples for analysis in Lancaster’s Accelerator Mass Spectrometer. 2. Participation in project meetings with Oxford University, Kyoto Fusioneering and the wider fusion industry. 3. Preparation of progress reports for UKAEA describing the results of the project. 4. Participation in national and international conferences and workshops to present the results of the project to a wider audience and to learn about current advances in the field. 5. Preparation of journal papers for publication of project findings. 6. Participation in (and ultimately taking the lead in) writing new research proposals that build on the expertise in tritium breeding technologies. | |