



## **Daphne Jackson Technical Retraining Fellowship Opportunity at Diamond Light Source**

Applications are invited for a two-year part-time (0.5 FTE) Daphne Jackson Fellowship that will be hosted and sponsored by Diamond Light Source Limited. The Fellowship is intended for an individual who would like to return to work in an Electrical/Electronic Engineering role after an extended career break. A pilot project for a new model of Fellowship is being run in collaboration with Diamond Light Source, with the emphasis on retraining.

Diamond Light Source is the UK's national synchrotron. It generates a brilliant source of light – mainly in the form of X-rays – and uses that light to power a series of incredibly powerful microscopes that allow researchers to study samples in exquisite detail. As one of the world's leading science facilities, Diamond provides state of the art facilities and equipment - and pivotal to this are the teams of electrical, mechanical and controls engineers. Diamond is continually improving its facilities which includes the equipment to focus the high intensity X-rays; load and hold samples in a range of environments; perform high resolution scans and collect data from a range of detectors.

The position would suit someone who has a background in electrical or electronic engineering and wishes to work in an organisation which is designing and building new systems. The projects that could be performed will depend upon the skills, expertise and experience of the individual Fellow. However, it is likely that you will be involved in a series of projects during the Fellowship rather than one single research project. Some typical projects are listed below for illustrative purposes:

- High precision closed loop motion control systems using proprietary drives to control stepper motors, DC motors, servo motors and piezo actuators. For controlling the position of optical elements, diagnostic devices and sample position on photon beamlines. Utilising encoders, capacitive sensors and laser interferometers for closed loop feedback.
- PLC based ultra-high vacuum control systems, often using proprietary equipment to Diamond Light Source configuration standards.
- Sample furnace controller and power supply for a resistive element or infra-red lamp furnace.
- PLC based gas dosing system for selecting, mixing, heating, purging gases to flow over a sample during an experiment.
- Personnel safety interlock systems for class 3 and class 4 lasers. To control personnel access to a room housing a laser and control a laser safety shutter. To facilitate various modes of laser operation.
- PLC based liquid nitrogen automatic filling system for cryocooled equipment e.g. a photon detector.
- Timing, triggering, gating, interlocking and synchronising between various control systems.
- PLC based pneumatic control and monitoring systems for the control of photon diagnostic devices, air bearings and simple motion control systems.

### **Daphne Jackson Trust**

The Daphne Jackson Trust is dedicated to returning scientists, technologists, engineers and mathematicians (STEM) to their careers following a break taken for family, caring or health reasons.

Daphne Jackson Fellowships are unique. The new pilot scheme Fellowships will offer STEM professionals wishing to return to a technological career after a break of two or more years, the opportunity to conduct an individually tailored retraining programme in a suitably supportive environment. The exact balance of retraining and research

will be determined individually on the basis of the applicant's background and in conjunction with the possibilities available at Diamond Light Source.

The unparalleled support offered by the Trust's Fellowship Advisors and administrative staff, coupled with mentoring and retraining provided during the Fellowship, give returners the confidence and skills they need to successfully return to their career.

For further details about the Trust, please visit [www.daphnejackson.org](http://www.daphnejackson.org).

For further information before submitting an application please contact the Daphne Jackson Trust office on 01483 689166 or via email at [djmft@surrey.ac.uk](mailto:djmft@surrey.ac.uk).

For further information specifically about the sponsored Fellowship opportunities at Diamond Light Source, please contact – Stewart Scott, Head of Engineering via [stewart.scott@diamond.ac.uk](mailto:stewart.scott@diamond.ac.uk). For more information about Diamond Light Source, please visit their website at [www.diamond.ac.uk](http://www.diamond.ac.uk)

### **How to apply**

To be considered for this opportunity, please complete the cv, personal details and personal statement forms on the Daphne Jackson Trust website: [Apply here](#). Please note that for this new retraining Fellowship a PhD is preferable but not essential.

Please email your submission to the Daphne Jackson Trust office at [djmft@surrey.ac.uk](mailto:djmft@surrey.ac.uk) stating clearly, Diamond Light Source Daphne Jackson Fellowship Application.

**Closing date for applications is Monday 16<sup>th</sup> March 2020**