

**Four Year PhD programme with opportunity to work for 2 years at Japan's Synchrotron and X-ray Laser Facility: X-ray structures of nitric oxide reductase in complex with nitrite reductase**

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University of Liverpool and Japan's premier research institute RIKEN ([www.riken.jp/en/](http://www.riken.jp/en/)) have been running a successful PhD programme where the PhD students spend 2 years (years 2 & 3) at one of the sites of RIKEN. A 4 years PhD in structural biology of protein complexes involved in the channeling of nitric oxide (NO) is available. NO is toxic to the cell but is also an important cellular signaling molecule. Some T cells use NO as a chemical weapon against infection and pathogenic bacteria use NO-Reductase (NOR), as a defence against the immune system. NO is also an important intermediate in the denitrification process.

Two different experimental approaches will be implemented in the project in order to obtain the structure of redox proteins NO-channelling complex of agricultural, environmental and health importance in its active state: use of brilliant focused X-ray beams at SPring-8, allowing the use of the crystals smaller than few microns combined with developed strategies to 'outrun radiation damage' and use of X-ray laser at SACLA that is allowing collection of diffraction data before destroying the crystal. The project's aim is to obtain the first high-resolution structures of nitric oxide reductase in complex with nitrite reductase.

Training opportunity: You will be trained in crystallographic, biochemical and molecular biology methods. Locating at RIKEN Harima-site, the host of SPring-8 and SACLA for 2 years will provide you the unique opportunity to use and participate in the most advanced methods that are available for structural biology.

**Funding Notes:**

Studentship is funded at the RCUK rate and is available only to applicants who reside (or have residency) within the UK or EU. Supplementary funding is provided during the time in Japan. Studentship start date is expected to be October 2015. Candidates must have, or expect to gain, a FIRST class degree (or equivalent) in Biochemistry, Biophysics or Chemistry.

How good is research at University of Liverpool in Agriculture, Veterinary and Food Science?

