PhD studentship at the University of Sheffield under the supervision of Professor John Rodenburg
(posted 23 October 2013)

This is an opportunity to make a key contribution to one of the most advanced imaging technologies currently being developed for ultra-high resolution imaging using X-rays and electrons. The method (called 'ptychography' in the scientific literature), originally developed by Professor Rodenburg, makes images without using good-quality lenses, but instead processes diffraction patterns. By no longer needing good lenses, which are very hard to make at sub-atomic wavelengths, ptychography has revolutionised X-ray microscopy: part of the aim of this post is to make similar transformational paradigm change in electron imaging.

Depending on your background, the project can be weighted towards either experimental or theoretical (and/or modelling) work.

The studentship will cover full PhD tuition fees and a tax-free stipend. This is also true for EU citizens who have been resident in the UK for at least three years. Non-resident EU students are not eligible for the stipend. There may be an opportunity to have a partial fee-waiver awarded for a very well qualified non-EU candidate. Candidates with their own funding are also encouraged to apply. The studentship can start at the earliest opportunity.

Requirements:

i) Applicants should have, or expect to obtain, a first-class or good 2:1 honours degree, or a distinction or high merit at MSc level (or international equivalent) in physics, electronics and/or electrical engineering, or a similar physical science or engineering subject.

ii) Applicants should preferably be able to demonstrate an interest in optics and/or inverse problems.

iii) Previous experience with MATLAB is desirable; computing experience with a scientific programming language is essential.

Informal enquiries prior to making an application may be addressed to Professor John Rodenburg, email: J.M.Rodenburg@shef.ac.uk.