

**AHRC Collaborative Doctoral Partnership
Research Studentship 2017**

**The British Museum, Department of Scientific Research and
Nottingham Trent University, School of Science & Technology**
***The conservation and interpretation of vitreous materials in museums collections – a non-invasive
investigation***

Applications are invited for an AHRC Collaborative Doctoral Partnership PhD studentship, to be undertaken at Nottingham Trent University (School of Science & Technology) and the British Museum (Department of Scientific Research). This studentship will be jointly supervised by Professor Haida Liang at Nottingham Trent University and Dr Capucine Korenberg at the British Museum. The studentship is for a three-year (full-time) project entitled 'The conservation and interpretation of vitreous materials in museums collections – a non-invasive investigation', to commence on 1 October 2017. The student will also be offered an additional (remunerated) six-month placement in conservation science at the British Museum during the PhD to further develop and expand their skills. The student will need to spend concentrated periods of time both at Nottingham Trent University and at the British Museum. This is an interdisciplinary project involving close collaboration between physicists, conservators and conservation scientists.

Summary of Project:

Optical coherence tomography (OCT) is a cutting-edge imaging technique that produces 3D images of surface and subsurface microstructure of transparent and semi-transparent materials. It is fast becoming a powerful tool for the study of museum objects as it can produce images of cross-sections without having to take samples from objects. In particular, pilot studies have found OCT to be a promising tool for examining the microstructure of glazed layers in faience and subsurface microstructural defects in deteriorated glass. In the proposed project, the OCT technique will be optimised for studying manufacturing techniques and degradation processes in vitreous museum artefacts. Information on the composition of vitreous materials will also be collected using analytical techniques and combined with the OCT results, thus giving an overall view of the microstructure of objects in 3D. This will involve complex data processing and programming. Finally, the project will focus on different case studies at the British Museum, specifically the complex deterioration mechanism of Limoges enamels and the manufacturing techniques of ancient Egyptian faience. The outcomes of this project will be of great relevance to other cultural heritage institutions holding vitreous objects in their collections.

Funding:

The full studentship award for students with UK residency* includes fees and a stipend of £14,553 per annum plus £550 p.a. additional stipend payment for Collaborative Doctoral students for 3 years. In addition, the Student Development Fund (equivalent to 0.5 years of stipend payments) is also available to support the cost of training, work placements, and other development opportunities. Students with EU residency are eligible for a fees-only studentship award. International applicants are normally not eligible to apply for this studentship. The British Museum will provide up to £1000 a year to cover travel and other costs the student incurs traveling to carry out research at the Museum and other locations. Both partners and the CDP consortium will provide opportunities for training and career development.

*UK residency means having settled status in the UK that is no restriction on how long you can stay in the UK; and having been "ordinarily resident" in the UK for 3 years prior to the start of the studentship that is you must have been normally residing in the UK apart from temporary or occasional absences; and not been residing in the UK wholly or mainly for the purposes of full-time education.

Eligibility:

Applicants must have a good first degree (usually a minimum 2:1) or a Masters degree (or other equivalent experience) in physics, archaeological science, conservation science, materials science, chemistry or a related physical science discipline. They should be highly motivated individuals with a keen interest in conservation or archaeology. Students must also meet the eligibility requirements of the UK Research Council for graduate students.

The minimum English language proficiency requirement for candidates who have not undertaken a higher degree at a UK HE institution is IELTS 6.5 (with a minimum of 6.0 in all skills).

The closing date for applications is **12:00 noon (UK time) on 13th March 2017**.

Further Information and application:

For informal enquiries, please contact the main supervisors Professor Haida Liang (haida.liang@ntu.ac.uk) or Dr Capucine Korenberg (ckorenberg@britishmuseum.org). Application is by covering letter, CV and online application form, and should be sent to doctoralschool@ntu.ac.uk and copied to haida.liang@ntu.ac.uk.

Application packs can be obtained from

http://www4.ntu.ac.uk/research/ntu_doctoral_school/studentships/index.html