



# SEAHA

CENTRE FOR DOCTORAL TRAINING IN  
SCIENCE AND ENGINEERING IN  
ARTS HERITAGE AND ARCHAEOLOGY

## Fully Funded Studentship:

### Spectrally dependent light sensitivity of modern materials

“Modern” materials such as plastics and rubbers are important in contemporary art and design collections and yet our knowledge of their light sensitivity is still limited. This exciting and highly interdisciplinary project will enable the successful candidate to experiment with the degradation of modern materials under different light sources. An experimental degradation chamber with a spectrally-adjustable light source will be constructed and the effect of the spectrum of a light source on both material degradation and on improving the appearance of degraded objects will be studied.

This is an exciting project for candidates looking to build knowledge and skills in material and polymer science, illumination technologies, radiometry, photometry and colorimetry, as well as the conduct of colour appearance experiments with groups of observers and statistical analysis of experimental data. The successful candidate will have a first or upper-second degree in engineering, material science, conservation science, chemistry, physics (or related aspects of science and/or engineering), and a keen interest in cultural heritage is desirable. This challenging project will enable you to seek employment in numerous sectors from academia to industry.

The following research questions are of interest:

- (i) How can the light sensitivity of materials relevant to works of contemporary/modern art/design be assessed?
- (ii) How is the light sensitivity of these materials spectrally-dependent (photo-degradation being a function of spectral power distribution of the light source)?
- (iii) Can a photo-degradation chamber with a spectrally adjustable light source be built for the purpose of this research?
- (iv) Using the relationship between object colour, illuminant spectral distribution and appearance, can we enhance (or otherwise) colour characteristics of an object, e.g. to illuminate a yellowed object with a light source of a spectral distribution that makes yellowing less apparent?

The project is part of the EPSRC Centre for Doctoral Training in Science and Engineering in Arts, Heritage and Archaeology at University College London, University of Oxford and University of Brighton ([www.seaha-cdt.ac.uk](http://www.seaha-cdt.ac.uk)), in collaboration with the Victoria and Albert Museum (V&A) (<http://www.vam.ac.uk/>) and Philips Research (<http://www.research.philips.com/>). Co-funded by the Engineering and Physical Sciences Research Council (EPSRC) through the Centre for Doctoral Training and Philips, the four year doctoral research programme will be supervised jointly by UCL Institute for Sustainable Heritage (<http://www.bartlett.ucl.ac.uk/heritage>), Department of Civil, Environmental and Geomatic Engineering (<http://www.cege.ucl.ac.uk/Pages/default.aspx>) at UCL, Philips Research and the V&A. Extended stays at Philips Research (Eindhoven) are planned. For further details contact Dr Katherine Curran, [k.curran@ucl.ac.uk](mailto:k.curran@ucl.ac.uk), the principal academic supervisor.

As a SEAHA student, you will have unparalleled access to expertise and research infrastructure across three universities and almost 50 research, heritage and industrial partners. In addition to the university doctoral training requirements, SEAHA students study together as a cohort and are involved in an exciting range of cohort activities, ranging from residential events and group projects, to conferences and careers events. Please visit the SEAHA website ([www.seaha-cdt.ac.uk](http://www.seaha-cdt.ac.uk)) for details.

SEAHA is a Doctoral Training Centre at University College London (UCL), University of Oxford, and University of Brighton. SEAHA is funded by the Engineering and Physical Sciences Research Council (EPSRC).



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The SEAHA Studentship will cover home fees and a stipend of up to a maximum of £16,726 per year (current rate) for eligible applicants (<http://www.seaha-cdt.ac.uk/opportunities/eligibility-criteria/>), and a substantial budget for research, travel, and cohort activities.

The application should include:

- A covering letter clearly stating your motivation
- The UCL graduate application form which can be downloaded via UCL's web site: <http://www.ucl.ac.uk/prospective-students/graduate/apply/apply-now/ucl-graduate-application-form.pdf>
- Two academic references
- A copy of your degree certificate(s) and transcript(s) of degree(s),
- Proof of meeting the UCL English language proficiency requirements where necessary. For SEAHA candidates, an advanced level certificate is normally required (details of English language proficiency requirements can be found at <http://www.ucl.ac.uk/prospective-students/graduate/apply/english-language/index>)
- A short research proposal (max. 2000 words) taking into consideration the above research questions.

The award will be subject to a Collaboration Agreement between the student, UCL, Philips Research and the V&A.

Applications should not be submitted by UCL online admissions system. Instead, they should be sent directly to the SEAHA Centre Manager: [manager@seaha-cdt.ac.uk](mailto:manager@seaha-cdt.ac.uk)

Postal Address:

SEAHA Centre Manager  
UCL Institute for Sustainable Heritage  
The Bartlett School of Environment, Energy and Resources (BSEER)  
4<sup>th</sup> Floor, Central House  
14 Upper Woburn Place  
London  
WC1E 0NN

Application deadline: Midnight (GMT), 1<sup>st</sup> March 2015

UCL Taking Action For Equality.