Research Associate in Nanophotonics and Heat Radiation Phenomena

Ref: 1655312

Starting Salary from

£34,056 - £41,163 per annum

(incl. London Allowance of £2980 per annum)

We wish to recruit a Research Associate from August 2017 or as soon as possible thereafter to join the photonic innovations lab at UCL (www.ee.ucl.ac.uk/pilab) and to work on the Horizon2020 project, EENSULATE.

EENSULATE (http://www.eensulate.eu) is a recently awarded Horizon2020 project with the participation of 15 partners across Europe. The main objective of EENSULATE is to develop an affordable and lightweight solution for envelope insulation to bring existing curtain wall buildings to "nearly zero energy" standards, reducing energy bills by at least 20%.

The Research Associate in EENSULATE will be responsible for the design and development of an adaptive radiative cooling coating that will allow for passive cooling through the roof of a building in the summer whilst preventing heat from escaping in the winter. The functional coating will consist of a multilayer thin-film whose emissivity will be tuned by the ambient temperature. Appropriately designed nanostructures will enhance the radiative cooling process through careful tailoring of photonic to heat coupling and radiative phenomena. The RA will also be responsible for complementing the existing synergies in the photonic innovations lab on smart thermochromic windows with antireflective and self-cleaning properties. Specifically, the RA will design, fabricate and test the properties of the developed coatings by using the advanced modelling, fabrication and testing facilities available at UCL. Upon successful demonstration of a small-scale prototype, the RA will have the opportunity to work on scaling up their processes with the objective of demonstrating a full-size prototype to be tested in real environmental conditions with the aid of our industrial partners.

The post is available for a period of 2 years in the first instance. Further funding to support the post may be available.

Key Requirements

Applicants should have (or be about to submit) a PhD in one of the following areas: design and fabrication of nanophotonics, plasmonics, metamaterials/metasurfaces, thin-films, heat generation and transport in nanostructures, heat radiation from nanostructures, light-heat interactions in nanostructures or similar. A first degree in an engineering, physical, chemical or material sciences subject is required. Proven capability in electromagnetic theory, modelling of photonic nanostructures with Finite Difference Time Domain or Finite Element methods, and some experience in fabrication of photonic nanostructures and optical experimental skills are required. Experience in modelling heat transport and radiative phenomena by using COMSOL (or equivalent software) will be counted positively (but is not necessary).

Appointment at Grade 7 is dependent upon having been awarded a PhD, if this is not the case, initial appointment will be at Research Assistant Grade 6B (£29,809 - £31,432 per annum) with payment at Grade 7 being backdated to the date of final submission of the PhD thesis including corrections.

HOW TO APPLY

Please apply online via the following link:

www.ucl.ac.uk/hr/jobs and search for reference 1655312

If you experience any problems please contact Vicky Coombes at v.coombes@ucl.ac.uk quoting Job reference **1655312**

Interested applicants are encouraged to make Informal enquiries about the post to Dr. Ioannis Papakonstantinou at

i.papakonstantinou@ucl.ac.uk

Information about the activities of the photonics innovations lab at UCL can be found at www.ee.ucl.ac.uk/pilab

Please do not send CV's direct.

UCL Taking Action for Equality