PDRA position in the Cavendish Laboratory, Department of Physics:
Soft NanoPhotonics Centre: Nano-Optics for Nano-chemistry, Soft NanoMachines and Nano-assembly

Applications are invited for an experimental postdoctoral Fellowship available from January 2018 for 24 months within a UK- and EU-funded centre exploring nanostructured materials for photonics- and bio-applications. The new ability to confine light to the nanometre scale (developed by us) gives a host of opportunities for new types of light-tracked and light-induced chemistry on tiny scales, impacting confined chemistry, quantum emitters, energy generation, and fundamentals (see http://www.np.phy.cam.ac.uk/publications). We interact with outstanding theorists in Imperial College London, Harvard, and San Sebastian Spain, who you will collaborate with extensively. Working in several teams with over 40 researchers across 4 departments, you will be developing nano-optics studies of nanoparticles and nanostructures to explore and control chemical processes operating at the nanoscale. We publish at the highest impact level (Nature, Science, PNAS, etc.. in the last year), and provide strong experience and training in wide interdisciplinary science.

Project: Plasmonics at the smallest scale
This project will continue our work studying ultrafast dynamics of light confinement down to the atomic scale to study the interaction with both monolayer semiconductors and individual molecules. We self-assemble wide variety of constructs to study the real-time dynamics on these extreme nano-optics scales. This will require significant experience in ultrafast, nano-optics, plasmonics, as well as a good theoretical understanding. Some background in semiconductor nano-optics would be advantageous.

Job requirements: Candidates will hold a strong physics PhD or a related discipline, with experience in optical measurements on the nanoscale and/or chemistry of nano-assembly and nano-systems. In addition to proven experimental skills the candidate should ideally have experience in working across disciplinary boundaries. They should expect to be involved in both construction of new high precision optical spectroscopy rigs using lasers as well as a variety of chemical sample preparations or synthesis. Experience in the field of plasmonics or metamaterials or soft materials would be helpful, as well as with surface-enhanced Raman scattering, depending on the positions above.

The UK NanoPhotonics Centre (http://www.np.phy.cam.ac.uk) collaborates widely across the University of Cambridge including the Departments of Chemistry, Engineering, Physics of Medicine, Cancer Research UK, Chemical Engineering, Materials as well as many international partners, industry, with several major EU programmes. Recent publications can be seen on our website (above). Prof JJ Baumberg, FRS, is an acknowledged leader in discovering and assembling nanomaterials for novel photonics. Informal enquires may be addressed to Prof Jeremy Baumberg (jjb12@cam.ac.uk). Please submit applications online as specified.