Research Fellow/Senior Research Associate (Research Officer) of 'High performance Wide spectral range Nanoprobe (HiWiN)' EPSRC project."

Competitive salary in the range from £34,804 to £41,526 p.a. dependent on experience

Applications are invited from an experienced, ambitious and creative researcher in the field of experimental photonics, optical spectroscopy and/or scanning probe microscopy and scientific instrumentation. The successful applicant will work on the innovative world-leading project that targets implementation and commissioning of a micro-to-nanoscale spectroscopic mapping and probing instrument as an EPSRC funded facility at the free electron laser (FEL) mid-infrared to THz light source at FELIX, Nijmegen.

The 'High performance Wide spectral range Nanoprobe (HiWiN)' will add nanoscale probing capability to the unique performance of FELIX light source https://www.ru.nl/felix/ (beam energy, ultra-wide spectral range, time resolution). HiWiN uses a recently developed platform of adiabatic light compression via the micromanufactured optical probe that will use scanning probe microscopy (SPM) instrument for precise micro/nanoscale positioning of the probe in the area of interest. The new instrument will reveal chemical and physical processes in the nanoscale areas of the studied object (micro/nanoelectronic devices, two-dimensional materials, catalyst nanoparticles, biological cells, etc) The HiWiN project is supported by 31 UK research groups from multiple departments in 12 UK universities and NPL providing a major boost of the UK research. The HiWIN development is based at Lancaster University that is home to UK and world leading groups in the field of scanning probe microscopy, mid-infrared and THz technology and quantum science https://www.lancaster.ac.uk/quantum-technology/. HiWiN will be unique and world leading instrument with no comparable capabilities existing in the UK or worldwide.

You will have an advanced degree – such as PhD or an equivalent research experience after obtaining Master level degree, in Engineering, Physics, or a related subject, with the hands-on experience in optics, optical systems design/development, building scientific instrumentation and experiment interfacing. Experience in scanning probe microscopy, mid-IR and /or THz light systems, and optical modelling and simulation (FEA, FDTD) is a major bonus. Under supervision of the principal investigator (Prof. Kolosov) and in collaboration with the co-Investigators team you will specify the design, selection and procurement of the equipment, building the HiWiN optical system using modern computer-controlled optomechanical components, work with the manufacturing suppliers of SPM and the micromachined optical nano-probe, interface the components of the system, and test the individual components as well as the whole system. After assembling and testing the HiWIN system in Lancaster during the first year, it will be combined with the FEL light source at FELIX and installed there as a user facility. You will be involved in training a dedicated researcher and a technician at FELIX, providing guidance to academic HiWiN users for diverse applications from two-

dimensional materials to biological samples, becoming a key player of the world leading research of the new unique facility.

The position is funded via EPSRC Strategic Capital Equipment grant to Lancaster University and is available until 31st of January 2023. You will work in a close collaboration with Lancaster team, participating manufacturers of the equipment, research team at FELIX, and leading UK academic groups and National Physics Laboratory that supports HiWiN development.

Lancaster University is consistently highly ranked in the top 10 in the UK university league tables. It is located on a beautiful campus in the North West of England close to the stunning Lake District National Park. The Department of Physics at Lancaster University provides an excellent research environment and in REF2014 was ranked 2nd in the UK for the number of research outputs judged to be of internationally leading (4 star) quality, with 28% of our publications in this top bracket. We strongly support the individual needs of each staff member and promote a healthy work-life balance. We are committed to the Athena Swan Charter, which recognises and celebrates good employment practice undertaken to address gender equality in higher education and research. In our drive to create a diverse, supportive community, we have attained Juno Champion and Athena SWAN Silver status.

Informal enquiries can be made by contacting Prof. Oleg Kolosov on o.kolosov@lancaster.ac.uk

We welcome applications from people in all diversity groups.

https://www.jobs.ac.uk/job/CCQ170/research-fellow-senior-research-associate-research-officer-of-high-performance-wide-spectral-range-nanoprobe-hiwin