

ISIS Facility Development Studentships – Studentships Awarded

2021 call

<i>University</i>	<i>University Supervisor</i>	<i>ISIS Supervisor</i>	<i>Partnership</i>	<i>Project title</i>
UCL	Bart Hoogenboom	Luke Clifton		Phase behaviour and disruption in model bacterial cell envelopes
Cambridge	Rachel Evans	Greg Smith		Understanding External Perturbation of Light-Responsive Pickering Emulsions by SANS/SEMSANS/SESANS
UCL	Christopher Howard	Tom Headen		Simultaneous wide and small angle operando neutron scattering to probe electrolyte ordering in supercapacitors
Cambridge, Sheffield	Howard Stone, Lewis Owen	Helen Playford		Enabling studies of short-range order in alloys and its application to FeCo
Warwick	John Murphy	Koji Yokoyama		Carrier lifetimes in silicon solar cells measured by muon spin spectroscopy
UCL	Paul Shearing, Christopher Rau	Martin Jones	Joint ISIS / DLS	Correlative X-ray and Neutron Studies of Li-ion Battery Performance and Degradation
Southampton	Iris Nandhakumar, Fred Mosselmans	Svemir Rudic	Joint ISIS / DLS	Operando XAS and inelastic neutron scattering studies of conducting thermoelectric MOFs
Sheffield	Alison Nedoma	Emily Reynolds	Joint ISIS / Faraday	Complementary <i>in-operando</i> Small Angle Neutron Scattering and Neutron Reflectometry cells to study the dynamic behaviour of the solid electrolyte interface.

2020 call

<i>University</i>	<i>University Supervisor</i>	<i>ISIS Supervisor</i>	<i>Partnership</i>	<i>Project title</i>
Cranfield	Nathaniel Erb-Satullo	Antonella Scherillo, Anna Fedrigo		Complex Metallurgy of the Bronze Age-Iron Age Transition in Iran: Archaeomaterials and Forensic Investigations
RHUL	Martin King	Rebecca Welbourn		Humic/HULIS material extracted from the environment at a solid-liquid interface: Cloud-climate effects and a modular community cell for

				neutron and photon science
Bristol	Julian Eastoe	Rebecca Welbourn		Adsorption of surfactants as friction modifiers
Kings London	Teppei Katori	Carlo Cazzaniga		Experimental and numerical studies of fast neutrons for design and characterisation of neutrino experiments and spallation sources
Nottingham	Emma Barney	Tristan Youngs		Developing Accurate Structural Models and Transferable Potentials for Multicomponent Glasses using Dissolve
Edinburgh	Pas Manuel	Paul Attfield		New Quantum Materials from High Pressure
Lincoln	Arunabhiram Chuita	Stewart Parker		Experimental and computational studies of the methanol synthesis catalyst – where is the hydrogen?
Durham	Peter Hatton	Diego Alba Venero		Development of in situ Electric field and Electric current capabilities at ISIS
Edinburgh	Caroline Kirk	Adrian Hillier		Where's the Lithium? Elemental analysis and structural characterisation of Li-containing ore materials using advanced muon and neutron techniques.
Kings London	Thomas Connelly	Genoveva Burca	Joint ISIS / DLS	Investigation of novel electrode structure for a new class of conversion electrode materials in solid-state batteries by in operando X-ray and neutron imaging
Oxford	Thorsten Hesjedahl	Sean Langridge	Joint ISIS / DLS	Interfacial magnetism in topological insulator heterostructures

2019 call

<i>University</i>	<i>University Supervisor</i>	<i>ISIS Supervisor</i>	<i>Partnership</i>	<i>Project title</i>
Leeds	A Matamoros-Veloza	Winfried Kockelman		Developing new methods for corrosion and steel degradation studies
Durham	T Lancaster	Francis Pratt		DFT+mu: a quantum toolkit
RHUL	J Goff	David Voneshen		Isolating incoherent quasi-elastic neutron scattering using polarised

				neutrons
Open University	H Fraser	Tom Headed		Exploiting Neutrons to Unveil Star-Formation: Exploring Dynamical Amorphous Ice Systems
Sheffield	A Parnell	Rob Dalglish		SANS – SEMSANS for the study of hierarchical length scale materials systems (soft, hard and biological)
Milan Bicocca	M Clemenza	Adrian Hillier		Muonic Atom X-ray Spectroscopy: implementation and benchmark of Monte Carlo simulation codes for non-destructive measurements
Imperial	JJ Davis	Chris Frost		Hard-Middleware: Facilitating Reliable Machine Learning Deployment for Automotive Applications
Oxford	W David	Bill David	Joint ISIS / DLS	Complementary neutron, x-ray and electron characterisation of sodium ion battery cathode materials
Cambridge	H Stone	Joe Kelleher	Joint ISIS / DLS	Stresses in single crystal superalloys
Southampton	R Wills	Martin Jones	Joint ISIS / Faraday Institution	
Bath	A O'Malley	Jeff Armstrong	Joint ISIS / Catalysis Hub	Multiscale hydrocarbon behaviour in realistic zeolite catalyst systems

2018 call

<i>University</i>	<i>University Supervisor</i>	<i>ISIS Supervisor</i>	<i>Partnership</i>	<i>Project title</i>
Keele	Richard Jones	Silvia Capelli		Understanding chromotropic and spin-crossover materials with combined in-situ Neutron Diffraction and Raman Spectroscopy
Oxford	Stephen Blundell	Francis Pratt		Negative muons as a new local probe of novel magnetic oxides
QMUL	Anthony Phillips	Helen Walker		Flexibility under pressure: a new pressure cell for understanding excitations in barocaloric framework materials
Leeds	Oscar Cespedes	Sean Langridge / Christy Kinane		Opto-Electronic Control of Magnetism
Warwick	Richard Walton	Ron Smith / Helen Playford		A Solvothermal Reaction Cell for in situ Neutron Scattering of Crystallisation
Bath	Karen Edler	Daniel Bowron		Reactions in Deep Eutectic Solvents: Time-resolved studies of structure control

				via solvent bonding
Bristol	Dong Liu	Joe Kelleher		Graphite and MAX Phases: Examination of Nuclear Materials with Twodimensional Nanostructures
Manchester	Chris Hardacre	Bowron/Diaz-Moreno	Joint ISIS / Diamond	Combined modulation excitation neutron and X-ray methods to understand catalytic systems
Manchester	Robert Weatherup	Cooper/Grinter /Held	Joint ISIS / Diamond	Revealing the interface structure and chemistry of working battery electrodes
Southampton	Iris Nandhakumar	Venero/Terril/Nicklin	Joint ISIS / Diamond	Soft-templated 3D nanostructured semiconductors
Southampton	Richard Wills	Martin Jones	ISIS / Faraday Institution	In-Situ Reaction mechanism and material speciation determination in operational batteries
Loughborough	S Kondrat / SE Dann	Ian Silverwood	ISIS / Catalysis Hub	Neutron Spectroscopy of Surface Intermediates on Nanoporous Metal Catalysts for H2 Storage Technologies
Glasgow	EK Gibson / D Lennon	Ian Silverood	ISIS / Catalysis Hub	Operando neutron scattering investigation of methane partial oxidation

2017 Call

<i>University</i>	<i>University supervisor</i>	<i>ISIS supervisor</i>	<i>Project title</i>
Warwick	Mark Fenn	Nick Funnell	Pressure Tuning of Order-Disorder Behaviour in Functional Materials
Edinburgh	Chris Stock	Russell Ewings	A pre-characterisation facility for all excitations users developed through a study of quasiparticle breakdown in new relaxor ferroelectrics
RHUL	Keith Refson	Toby Perring	Advanced first-principles methods for modelling spin excitations
UCL	Hidekazu Kurebayashi	Nina Steinke	Correlations between local magnetism and spin-orbit transport physics in novel spintronic multi-layers
Glasgow	Serena Corr	Peter Baker	In operandi Li-ion diffusion measurements at the EMU beamline on Li- and Na-ion batteries
Newcastle	Ian Metcalfe	Martin Jones	Neutron diffraction to monitor the state of non-stoichiometric solids under reaction conditions
Liverpool	Lucy Clark	Goran Nilsen	In Pursuit of the Kitaev Quantum Spin Liquid: Developing ISIS Crystal Growth Facilities for the Discovery of Metal-Organic Framework Analogues of Quantum Materials and Beyond
Oxford	Preston/Sansum	Luke Clifton	Combining Molecular Dynamics and Neutron Reflectometry Techniques to Understand

Exeter	Karen Hudson-Edwards	Dominc Fortes	Lipid Transfer Protein Binding Events at the Membrane Interface Characterisation of Toxic Element-bearing Sulfate Minerals by Coupled Raman Spectroscopy-Neutron and Synchrotron Diffraction
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2016 call

<i>University</i>	<i>University supervisor</i>	<i>ISIS supervisor</i>	<i>Project title</i>
Warwick	Don Paul	Adrian Hillier	Developing Elemental Analysis with Negative Muons at ISIS
Bath	Karen Edler	Luke Clifton / James Douth	Polymer-stabilized phospholipid nanodiscs – Polymer:protein interactions
Leeds	Lorna Dougan	Alan Soper	Biological role of water under extreme conditions
Oxford	Moritz Riede	Rob Dalglish	Development of a Vacuum Deposition Chamber for In-situ Characterisation of Organic Thin Films using Neutron Scattering
Royal Holloway	Martin King	Becky Welbourn	Oxidation of organic material at a buried solid-liquid interface: Cloud-climate effects and a new community cell for neutron and x-ray experiments of same the interface
Cambridge	Howard Stone	Helen Playford	Total Scattering: A Powerful Tool for the Investigation of Short-Range Order in Alloy Systems

2015 call

<i>University</i>	<i>University supervisor</i>	<i>ISIS supervisor</i>	<i>Project title</i>
Leeds	Marrows	Langridge	Probing Room-Temperature Chiral Skyrmions and Bobbers with Polarised Neutrons
QMUL	Goff	Voneshan	Polarised neutron studies of excitations in the multi-ferroic hexagonal manganite HoMnO_3
UCL	Shearing	Kockelmann	Developing Capability for Neutron Imaging of Electrochemical Systems
Bath + Diamond	Salmon	Bull	Hot Science under Pressure
UCL + Diamond	Perkins	Douth	Solution properties of glycans and oligosaccharides by scattering, and their conformational analyses by new CCP-SAS atomistic modelling methods.
Durham	Lancaster	Pratt	DFT+ μ : solving the muon site problem
Southampton	Raja	Parker	Probing Multifunctional Active Sites for the Preferential Adsorption and Utilisation of CO_2 through Neutron Scattering

Glasgow	Gregory	Smith	Microwaves in situ; rapid materials synthesis probed in real time with neutrons
Southampton + Diamond	Keyes	Burca	Development of correlative neutron and X-ray computed tomography to study fluid dynamics and structural deformation at the micro-scale in plant and soil systems
Edinburgh	Titmuss	Skoda / Clifton	Neutron reflectivity & complementary in situ techniques to determine how antimicrobial peptides actually work
St Andrews	Irvine	Jones	Development of Combined In situ Neutron Diffraction and Electrochemical Studies

2014 call

<i>University</i>	<i>University supervisor</i>	<i>ISIS supervisor</i>	<i>Project title</i>
Reading	Christian Pfrang	Max Skoda	
Bath	Karen Edler	Daniel Bowron	
UCL	Richard Catlow, Chris Hardacre	Stewart Parker	Catalytic Reaction Cells for Spectroscopy and Diffraction
Newcastle	Lakey	Luke Clifton	Creating realistic models of bacterial outer membranes for antimicrobial research and diagnostic assay development
Coventry	Fitzpatrick	Winfried Kockelmann	Development and application of neutron imaging for strain mapping in aerospace applications
Reading	Powell	Steve Hull	In-situ characterisation of high performance thermoelectric materials
Edinburgh	Guthrie	Craig Bull	High pressure studies of magnetism using diamond anvil cells
Reading	Squires	Ann Terry	Enhancing energy through optical/neutron synergy (EBONY)
Royal Holloway	Refson	Pas Manuel	DFT Methods for Complex Magnetic Systems
Oxford	Hesjedal	Nina Steinke	Magnetic Order in Topological Insulators
Oxford	Goodwin	Ross Stewart	Unconventional Neutron Scattering Analysis for Unconventional Magnetic Order
Cranfield	Mehmanparast	Joe Kelleher	The influence of residual stresses on the structural integrity of renewable energy marine structures
Edinburgh	Spagnolo	Luke Clifton	
Sheffield	Mostafavi	Saurabh Kabra	Stroboscopic mapping of dynamic strain field in in-situ loaded moving parts
Bristol	Hayden	Russell Ewings	Correlated electrons under uniaxial stress
Edinburgh	Pulham	Bill Marshall	High pressure studies of Energetic Co-crystals