

## ISIS Facility Development Studentships – Studentships Awarded

### 2020 call

<i>University</i>	<i>University Supervisor</i>	<i>ISIS Supervisor</i>	<i>Partnership</i>	<i>Project title</i>
<b>Cranfield</b>	Nathaniel Erb-Satullo	Antonella Scherillo, Anna Fedrigo		Complex Metallurgy of the Bronze Age-Iron Age Transition in Iran: Archaeomaterials and Forensic Investigations
<b>RHUL</b>	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
<b>Bristol</b>	Julian Eastoe	Rebecca Welbourn		Adsorption of surfactants as friction modifiers
<b>Kings London</b>	Teppei Katori	Carlo Cazzaniga		Experimental and numerical studies of fast neutrons for design and characterisation of neutrino experiments and spallation sources
<b>Nottingham</b>	Emma Barney	Tristan Youngs		Developing Accurate Structural Models and Transferable Potentials for Multicomponent Glasses using Dissolve
<b>Edinburgh</b>	Pas Manuel	Paul Attfield		New Quantum Materials from High Pressure
<b>Lincoln</b>	Arunabhiram Chuita	Stewart Parker		Experimental and computational studies of the methanol synthesis catalyst – where is the hydrogen?
<b>Durham</b>	Peter Hatton	Diego Alba Venero		Development of in situ Electric field and Electric current capabilities at ISIS
<b>Edinburgh</b>	Caroline Kirk	Adrian Hillier		Where's the Lithium? Elemental analysis and structural characterisation of Li-containing ore materials using advanced muon and neutron techniques.
<b>Kings London</b>	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
<b>Oxford</b>	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>
<b>Leeds</b>	A Matamoros-Veloza	Winfried Kockelman		Developing new methods for corrosion and steel degradation studies
<b>Durham</b>	T Lancaster	Francis Pratt		DFT+mu: a quantum toolkit
<b>RHUL</b>	J Goff	David Voneshen		Isolating incoherent quasi-elastic neutron scattering using polarised neutrons
<b>Open University</b>	H Fraser	Tom Headed		Exploiting Neutrons to Unveil Star-Formation: Exploring Dynamical Amorphous Ice Systems
<b>Sheffield</b>	A Parnell	Rob Dalgliesh		SANS – SEMSANS for the study of hierarchical length scale materials systems (soft, hard and biological)
<b>Milan Bicocca</b>	M Clemenza	Adrian Hillier		Muonic Atom X-ray Spectroscopy: implementation and benchmark of Monte Carlo simulation codes for non-destructive measurements
<b>Imperial</b>	JJ Davis	Chris Frost		Hard-Middleware: Facilitating Reliable Machine Learning Deployment for Automotive Applications
<b>Oxford</b>	W David	Bill David	Joint ISIS / DLS	Complementary neutron, x-ray and electron characterisation of sodium ion battery cathode materials
<b>Cambridge</b>	H Stone	Joe Kelleher	Joint ISIS / DLS	Stresses in single crystal superalloys
<b>Southampton</b>	R Wills	Martin Jones	Joint ISIS / Faraday Institution	
<b>Bath</b>	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>
<b>Keele</b>	Richard Jones	Silvia Capelli		Understanding chromotropic and spin-crossover materials with combined in-situ Neutron Diffraction and Raman Spectroscopy

<b>Oxford</b>	Stephen Blundell	Francis Pratt		Negative muons as a new local probe of novel magnetic oxides
<b>QMUL</b>	Anthony Phillips	Helen Walker		Flexibility under pressure: a new pressure cell for understanding excitations in barocaloric framework materials
<b>Leeds</b>	Oscar Cespedes	Sean Langridge / Christy Kinane		Opto-Electronic Control of Magnetism
<b>Warwick</b>	Richard Walton	Ron Smith / Helen Playford		A Solvothermal Reaction Cell for in situ Neutron Scattering of Crystallisation
<b>Bath</b>	Karen Edler	Daniel Bowron		Reactions in Deep Eutectic Solvents: Time-resolved studies of structure control via solvent bonding
<b>Bristol</b>	Dong Liu	Joe Kelleher		Graphite and MAX Phases: Examination of Nuclear Materials with Twodimensional Nanostructures
<b>Manchester</b>	Chris Hardacre	Bowron/Diaz-Moreno	Joint ISIS / Diamond	Combined modulation excitation neutron and X-ray methods to understand catalytic systems
<b>Manchester</b>	Robert Weatherup	Cooper/Grinter /Held	Joint ISIS / Diamond	Revealing the interface structure and chemistry of working battery electrodes
<b>Southampton</b>	Iris Nandhakumar	Venero/Terril/Nicklin	Joint ISIS / Diamond	Soft-templated 3D nanostructured semiconductors
<b>Southampton</b>	Richard Wills	Martin Jones	ISIS / Faraday Institution	In-Situ Reaction mechanism and material speciation determination in operational batteries
<b>Loughborough</b>	S Kondrat / SE Dann	Ian Silverwood	ISIS / Catalysis Hub	Neutron Spectroscopy of Surface Intermediates on Nanoporous Metal Catalysts for H2 Storage Technologies
<b>Glasgow</b>	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>
<b>Warwick</b>	Mark Fenn	Nick Funnell	Pressure Tuning of Order-Disorder Behaviour in Functional Materials
<b>Edinburgh</b>	Chris Stock	Russell Ewings	A pre-characterisation facility for all excitations users developed through a study of quasiparticle breakdown in new relaxor ferroelectrics
<b>RHUL</b>	Keith Refson	Toby Perring	Advanced first-principles methods for modelling spin excitations

<b>UCL</b>	Hidekazu Kurebayashi	Nina Steinke	Correlations between local magnetism and spin-orbit transport physics in novel spintronic multi-layers
<b>Glasgow</b>	Serena Corr	Peter Baker	In operandi Li-ion diffusion measurements at the EMU beamline on Li- and Na-ion batteries
<b>Newcastle</b>	Ian Metcalfe	Martin Jones	Neutron diffraction to monitor the state of non-stoichiometric solids under reaction conditions
<b>Liverpool</b>	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
<b>Oxford</b>	Preston/Sansum	Luke Clifton	Combining Molecular Dynamics and Neutron Reflectometry Techniques to Understand Lipid Transfer Protein Binding Events at the Membrane Interface
<b>Exeter</b>	Karen Hudson-Edwards	Dominc Fortes	Characterisation of Toxic Element-bearing Sulfate Minerals by Coupled Raman Spectroscopy-Neutron and Synchrotron Diffraction

#### 2016 call

<i>University</i>	<i>University supervisor</i>	<i>ISIS supervisor</i>	<i>Project title</i>
<b>Warwick</b>	Don Paul	Adrian Hillier	Developing Elemental Analysis with Negative Muons at ISIS
<b>Bath</b>	Karen Edler	Luke Clifton / James Douth	Polymer-stabilized phospholipid nanodiscs – Polymer:protein interactions
<b>Leeds</b>	Lorna Dougan	Alan Soper	Biological role of water under extreme conditions
<b>Oxford</b>	Moritz Riede	Rob Dalglish	Development of a Vacuum Deposition Chamber for In-situ Characterisation of Organic Thin Films using Neutron Scattering
<b>Royal Holloway</b>	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
<b>Cambridge</b>	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>
<b>Leeds</b>	Marrows	Langridge	Probing Room-Temperature Chiral Skyrmions and Bobbers with Polarised Neutrons
<b>QMUL</b>	Goff	Voneshan	Polarised neutron studies of excitations in the multi-ferroic hexagonal manganite

			HoMnO <sub>3</sub>
<b>UCL</b>	Shearing	Kockelmann	Developing Capability for Neutron Imaging of Electrochemical Systems
<b>Bath + Diamond</b>	Salmon	Bull	Hot Science under Pressure
<b>UCL + Diamond</b>	Perkins	Doutch	Solution properties of glycans and oligosaccharides by scattering, and their conformational analyses by new CCP-SAS atomistic modelling methods.
<b>Durham</b>	Lancaster	Pratt	DFT+ $\mu$ : solving the muon site problem
<b>Southampton</b>	Raja	Parker	Probing Multifunctional Active Sites for the Preferential Adsorption and Utilisation of CO <sub>2</sub> through Neutron Scattering
<b>Glasgow</b>	Gregory	Smith	Microwaves in situ; rapid materials synthesis probed in real time with neutrons
<b>Southampton + Diamond</b>	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
<b>Edinburgh</b>	Titmuss	Skoda / Clifton	Neutron reflectivity & complementary in situ techniques to determine how antimicrobial peptides actually work
<b>St Andrews</b>	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>
<b>Reading</b>	Christian Pfrang	Max Skoda	
<b>Bath</b>	Karen Edler	Daniel Bowron	
<b>UCL</b>	Richard Catlow, Chris Hardacre	Stewart Parker	Catalytic Reaction Cells for Spectroscopy and Diffraction
<b>Newcastle</b>	Lakey	Luke Clifton	Creating realistic models of bacterial outer membranes for antimicrobial research and diagnostic assay development
<b>Coventry</b>	Fitzpatrick	Winfried Kockelmann	Development and application of neutron imaging for strain mapping in aerospace applications
<b>Reading</b>	Powell	Steve Hull	In-situ characterisation of high performance thermoelectric materials
<b>Edinburgh</b>	Guthrie	Craig Bull	High pressure studies of magnetism using diamond anvil cells
<b>Reading</b>	Squires	Ann Terry	Enhancing energy through optical/neutron synergy (EBONY)
<b>Royal Holloway</b>	Refson	Pas Manuel	DFT Methods for Complex Magnetic Systems

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<b>Oxford</b>	Hesjedal	Nina Steinke	Magnetic Order in Topological Insulators
<b>Oxford</b>	Goodwin	Ross Stewart	Unconventional Neutron Scattering Analysis for Unconventional Magnetic Order
<b>Cranfield</b>	Mehmanparast	Joe Kelleher	The influence of residual stresses on the structural integrity of renewable energy marine structures
<b>Edinburgh</b>	Spagnolo	Luke Clifton	
<b>Sheffield</b>	Mostafavi	Saurabh Kabra	Stroboscopic mapping of dynamic strain field in in-situ loaded moving parts
<b>Bristol</b>	Hayden	Russell Ewings	Correlated electrons under uniaxial stress
<b>Edinburgh</b>	Pulham	Bill Marshall	High pressure studies of Energetic Co-crystals

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