

**Dalton 2025**  
**1-3 April 2025, University of Warwick, UK**  
**Programme**

**Tuesday 1 April 2025**

11:00	Registration				
12:00	Chair's Welcome (OC1.05 Lecture Theatre)				
12:15	Sponsors Flash Talks				
12:30	Plenary (PL1) – Session Chair: Paul Walton (OC1.05 Lecture Theatre) Bio-inspired Oxyanion Reduction with Iron Alison Fout, Texas A&M University, USA				
13:15	Lunch – Oculus Building				
Theme	Inorganic Biochemistry	Inorganic Reaction Mechanism	Coordination and Organometallic Chemistry	Main Group Chemistry	Sustainability
Room	OC1.04	OC1.06	OC1.05	OC0.04	OC0.02
Session Chair	Jonathan Worrall	Ian Fairlamb	David Mills	Michael Cowley	Joseph Wright
14:00	Molecular MRI with Paramagnetic Metal Complexes Peter Harvey, University of Nottingham, UK (IBDG-O1)	Electronic structure and proton-coupled electron transfer reactivity of cerium oxo clusters Sebastian Pike, University of Warwick, UK (IRMG-O1)	Design of a Janus-type Bis(abnormal N-heterocyclic carbene) Kai Pfefferkorn, Chemnitz University of Technology, Germany (CODG-O1)	Harnessing heterometallic synergy: from catalysts to copolymers Jennifer Garden, University of Edinburgh, UK (MGCG-O1)	Titanium catalysts for sustainable phosphine synthesis from PH <sub>3</sub> Leah Webster, University of Cambridge, UK (SUS-O1)
14:20	Optimised diphosphine chelator platforms for <sup>99m</sup> Tc diagnostic and <sup>188</sup> Re therapeutic radiopharmaceuticals Rachel Nuttall, King's College London, UK (IBDG-O2)		Iron Complexes Supported by a Double Dearomatized PNPN Ligand Stefan Weber, TU Wien, Austria (CODG-O2)	Facile, reversible hydrogen activation by low-coordinate magnesium oxide complexes Samuel Thompson, University of St. Andrews, UK (MGCG-O2)	Tailoring Conductivity in Metal-Organic Frameworks: A New Approach for Synthesizing the Elusive Fe(II) Analogue of ZIF-8 for Energy Storage Vijayakumar Manavalan, Aston University, UK (SUS-O2)
14:40	Towards a high-relaxivity Mn(II)-based T <sub>1</sub> probe for MRI Olga Tyurina, King's College London, UK (IBDG-O3)	Single Electron Transfer: EPR Spectroscopy to Explore New Reactivities in 1 <sup>st</sup> row TM and Main Group Catalysis Emma Richards, Cardiff University, UK (IRMG-O2)	Oxidation state or valence: which is the better descriptor for organometallic and coordination complexes? Paul Pringle, University of Bristol, UK (CODG-O3)	Alkaline earth electrides: a new weapon in the synthetic arsenal Fabrizio Ortu, University of Leicester, UK (MGCG-O3)	
15:00	Tea and Coffee Break				

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Session Chair	Philip Ash	James Walton	Sophie Benjamin	Andrew Jupp	Sandy Kilpatrick
16:00	<b>Heme in Biology: Insights from Structural Biology</b> Hanna Kwon, University of Leicester, UK (IBDG-O4)	<b>Isolated intermediates offer new insights into PRC mechanisms</b> Samuel Horsewill, University of Bath, UK (IRMG-O3)	<b>Synthesis and Reactivity of Dilithiated Anilides facilitated by Digital Lab Tools</b> Richard Drummond Turnbull, University of Glasgow, UK (CODG-O4)	<b>Diberyllanes and metal beryllyl complexes</b> Josef Boronski, Imperial College London, UK (MGCG-O4)	<b>Phosphirenium catalysed reduction reactions</b> Oliver Jarvis, University of Cambridge, UK (SUS-O3)
16:20	<b>Investigation of DNA Binding by <i>Yerstina enterocolitica</i> ISCR, Regulator of Iron-Sulfur Cluster Biogenesis</b> Miaomiao Gao, University of East Anglia, UK (IBDG-O5)	<b>Trivalent metal Lewis acids catalyse the transfer hydrogenation of CO<sub>2</sub></b> Alexandros Paparakis, Charles University, Czech Republic (IRMG-O4)	<b>Easily Accessible and Solution-Stable Ni(0) Precatalysts for High-Throughput Experimentation</b> Gilian Thomas, University of Leeds, UK (CODG-O5)	<b>New route to fully unsymmetrical and highly reactive diborenes</b> Merle Arrowsmith, Julius-Maximilians Universität Würzburg, Germany (MGCG-O5)	<b>Borates vs. Aluminates: comparing the anion for lithium-ion batteries</b> Darren Ould, University of Cambridge, UK (SUS-O4)
16:40	<b>Insight into the Electronic Structure of [FeFe] Hydrogenase Revealed by Two-Dimensional Infrared Spectroscopy</b> James Birrell, University of Essex, UK (IBDG-O6)	<b>A combined kinetic and computational analysis of the palladium-catalysed formylation of aryl bromides</b> Georgina Rai, Imperial College London, UK (IRMG-O5)	<b>High-throughput Combinatorial Click Chemistry for the Exploration of Functional Metal Complex Space</b> Angelo Frei, University of York, UK (CODG-O6)	<b>Catalytic and selective methane oxidation using main group species</b> Liam Parkin, Imperial College London, UK (MGCG-O6)	<b>Mechanochemical synthesis of a sodium anion complex [Na<sup>+</sup>([2.2.2]Cryptand)Na<sup>-</sup>]: an investigation into its formation and reactivity</b> Nathan Davison, University of Birmingham, UK (SUS-O5)
17:00	<b>Award Lecture (AL1) – Session Chair: Paul Walton (OC1.05 Lecture Theatre)</b> <b>Scalable Routes to Functional Materials: Photocatalytic, TCO and Anti-Soiling Coatings</b> Claire Carmalt, University College London, UK				
17:45	<b>Dinner – Rootes Restaurant</b>				
19:00	<b>Posters with drink reception (Oculus Building)</b>				
22:00	<b>Close</b>				

## Wednesday 2 April 2025

09:00	<b>Plenary (PL2) – Session Chair: Cath Weetman (OC1.05 Lecture Theatre)</b> <b>Molecular Redox Reactivity of s-block elements</b> Michael Hill, University of Bath, UK
09:45	<b>Award Lecture (AL2) – Session Chair: Ruth Webster (OC1.05 Lecture Theatre)</b> <b>Supramolecular Assemblies as Multi-Qubit Systems for Quantum Information Process</b> Selena Lockyer, The University of Manchester, UK
10:30	<b>Tea and Coffee Break</b>

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Session Chair	Anna Peacock	Ulrich Hintermair	Paul Pringle	Clare Bakewell	Kyle Pearce
11:00	<b>Rewiring metalloenzymes for new and improved C-H functionalisation chemistry</b> Jack Rowbotham, The University of Manchester, UK (IBDG-O7)	<b>Hydrogen Borrowing Polymerisation to make new renewable polymers</b> Amit Kumar, University of St. Andrews, UK (IRMG-O6)	<b>Synthesis and spectroscopy of radical-bridged lanthanide heterobimetallic complexes</b> Joy Farnaby, University of Glasgow, UK (CODG-O7)	<b>On the Mechanism of Metal-Free Alkene Borylation</b> Petra Vasko, University of Helsinki, Finland (MGCG-O7)	<b>Organic room temperature phosphorescence from BN-substituted xanthene derivatives</b> Alexander Watson, The University of Western Ontario, Canada (SUS-O6)
11:20			<b>Towards linear lanthanide single-molecule magnets</b> David Mills, The University of Manchester, UK (CODG-O8)	<b>Zinc and Aluminium Catalysed C-H Functionalisation of Heteroarenes</b> Milan Kumar Bisai, University of Edinburgh, UK (MGCG-O8)	<b>Anilido-aldimine group 4 complexes as catalysts for CO<sub>2</sub>/epoxide cycloadditions</b> Sarah Lamorte, University of Leicester, UK (SUS-O7)
11:40	<b>Unlocking new insights in metalloprotein redox chemistry</b> Natalia Baranska, University of York, UK (IBDG-O8)	<b>Selective transesterification mediated by lanthanum complexes in the copolymerization of lactide with various lactones</b> Rachel Platel, Lancaster University, UK (IRMG-O7)	<b>Solvent Controlled Self-Assembly of Lanthanide-Foldamer Metallosupramolecular Architectures</b> Sarah Pike, University of Birmingham, UK (CODG-O9)	<b>A Sterically Accessible Monomeric Stibine Oxide Activates Organotetrel(IV) Halides, Including C-F and Si-F Bonds</b> John Wenger, University of Oxford, UK (MGCG-O9)	<b>Reversible CO<sub>2</sub> insertion into the silicon-nitrogen <math>\sigma</math>-bond of an N-heterocyclic iminosilane</b> Jingyan Wang, University College London, UK (SUS-O8)
12:00	<b>De novo designed <math>\beta</math>-hairpin peptides as LPMO mimics</b> Luisa Ciano, University of Nottingham, UK (IBDG-O9)	<b>In control: A kinetics and mechanistic study of an Ir(POCOP) catalyst for the controlled synthesis of polyaminoboranes</b> Chloe van Beek, University of York, UK (IRMG-O8)	<b>Metal-ligand coordination-driven self-assembly of topologically rare Pd<sub>n</sub>L<sub>2n</sub> cages</b> Soumalya Bhattacharyya, University of Nottingham, UK (CODG-O10)	<b>Metallomimetic C-F Activation Catalysis by Simple Phosphines</b> Sara Bonfante, University of York, UK (MGCG-O10)	<b>Catalytic Nitrous Oxide Degradation with Group 15 Clusters</b> Bono van Ijzendoorn, University of Oxford, UK (SUS-O9)
12:20	<b>Electrostatic Fields Induce Accelerated Proton Coupled Electron Transfer Rates in a Mg-Porphyrin P680<sup>++</sup> Mimic</b>	<b>Photochemistry and New Time-resolved Studies with Metal Carbonyls</b> Mike George, University of Nottingham, UK (IRMG-O9)	<b>The First Non-Pyrophoric Precursor for the Low Temperature Deposition of Metallic Aluminium</b> Caroline Knapp, University College London, UK (CODG-O11)		<b>Giving fluorine atoms a second life via a circular fluorine economy: The chemical upcycling of fluorochemicals</b> Niko Jenek, Imperial College London, UK (SUS-O10)

	Oscar Kelly, Trinity College Dublin, Ireland (IBDG-O10)				
12:45	<b>Lunch – Oculus Building</b>				
14:00	<b>Plenary (AL3) – Session Chair: Philip Ash (OC1.05 Lecture Theatre)</b> <b>Spectroscopy for chemistry research at Diamond Light Source</b> Luke Keenan, Diamond Light Source, UK				
<b>Theme</b>	<b>Inorganic Biochemistry</b>	<b>Inorganic Reaction Mechanism</b>	<b>Coordination and Organometallic Chemistry</b>	<b>Main Group Chemistry</b>	<b>Sustainability</b>
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<b>Session Chair</b>	Jeannine Hess	Seb Pike	Nicola Bell	Sophie Benjamin	
14:30	<b>Artificial metalloenzymes based on anchoring of piano stool complexes to alcohol dehydrogenase</b> Anca Pordea, University of Nottingham, UK (IBDG-O11)	<b>Artificial Force Induced Reaction Pathway Determination: A Case Study in Group- 1 Organometallic Chemistry</b> Jack Hemingway, Newcastle University, UK (IRMG-O10)	<b>A Platinum Butterfly Effect: Small Changes Turn a Chemotherapeutic into a Non-toxic Metalloantibiotic with <i>In Vivo</i> Efficacy</b> Cagri Ozsan, University of York, UK (CODG-O12)	<b>Amidinate ligand stabilised low-valent aluminium complexes: syntheses and equilibria</b> Matthew de Vere-Tucker, King's College London, UK (MGCG-O11)	
14:50	<b>Approaches to Design Artificial Metalloenzymes for Sustainable Chemistry</b> Patricia Rodrigues Maciá, University of Leicester, UK (IBDG-O12)	<b>Artificial Force Induced Reaction Pathway Determination: A Case Study in Group- 1 Organometallic Chemistry</b> Matthias Käfer, TU Wien, Austria (IRMG-O11)	<b>Mixed valence {Ni<sup>2+</sup>Ni<sup>1+</sup>} complexes as models of Acetyl Coenzyme A Synthase intermediates</b> Nadia Stephaniuk, King's College London, UK (CODG-O13)	<b>Terminal monomeric calcium mono- and difluorides as fluoride shuttles?</b> Job Struijs, University of Oxford, UK (SUS-O11)	
15:10	<b>Tea and Coffee Break</b>				
<b>Theme</b>	<b>Inorganic Biochemistry</b>	<b>Inorganic Reaction Mechanism</b>	<b>Coordination and Organometallic Chemistry</b>	<b>Main Group Chemistry</b>	<b>Sustainability</b>
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<b>Session Chair</b>	Peter Harvey	Seb Pike	George Britovsek	Jenni Garden	Caroline Knapp
15:30	<b>New hybrid hydroxypyridinone -aza-crown-macrocyclic chelators for molecular imaging and radiotherapy</b> Rory Kenrick, King's College London, UK (IBDG-O13)	<b>Understanding C–C bond formation by migratory insertion in manganacycles – A combined time-resolved spectroscopy, computational chemistry and data science study</b> Stefan Flesch, University of York, UK (IRMG-O12)	<b>Investigating the Roles of Bimetallic Species in Oxidative Cross-Coupling Reactions</b> Mandalena Mendy, University of York, UK (CODG-O14)	<b>Zinc-Mediated Divergent Transmetalation from a <math>\beta</math>-diketiminato Calcium Hydride</b> Kyle Pearce, University of Bath, UK (MGCG-O13)	<b>A New, Convenient Way of Accessing Ni(II) and Ni(I) Complexes via C – N Oxidative Cleavage</b> Dimitrios Fragkis, University of Athens, Greece (SUS-O12)

15:50	<b>Dithiocarbamates for Molecular Imaging with Technetium-99m Labelled Peptides</b> Jung Sik Shin, King's College London, UK (IBDG-O14)	<b>Innocent until proven guilty: DFT investigation into the mechanism of NacNacZn catalysed C–H functionalisation</b> Justyna Łosiewicz, University of Edinburgh, UK (IRMG-O13)	<b>Platinum Group Metal catalysis for fine chemicals</b> Antonio Zanotti Gerosa, Johnson Matthey, UK (CODG-O15)	<b>A crystalline nitrogen chain radical anion</b> Reece Lister-Roberts, The University of Manchester and University of Oxford, UK (MGCG-O14)	<b>Reversible Ligand Activation in Solid-State Molecular Organometallic Chemistry</b> Joe Goodall, University of York, UK (SUS-O13)
16:10	<b>The hunt for neutral pH radiolabeling with gallium-68, a study in acyclic chelators</b> Graeme Stasiuk, King's College London, UK (IBDG-O15)	<b>Catalytic H/D Exchange of Aluminium Hydrides by Cobalt–Aluminium Complexes</b> Nikolaus Gorgas, TU Wien, Austria (IRMG-O14)	<b>Organometallic complexes of tetraphenylpentanide</b> Ulrich Hintermair, University of Bath, UK (CODG-O16)	<b>HF shuttling for the chemical recycling of fluorocarbons</b> Shannon Farley, Imperial College London, UK (MGCG-O15)	<b>Applications of boryloxide ligands in lanthanide chemistry: diversifying the coordination landscape</b> Dinh Cao Huan Do, University of Sussex, UK (SUS-O14)
16:30	<b>Plenary (PL4) – Session Chair: Aidan McDonald (OC1.05 Lecture Theatre)</b> <b>Fundamental Redox Reactions at Metal-Oxide Interfaces</b> Jim Mayer, Yale University, USA				
17:15	<b>Posters</b>				
17:15	<b>Committee meeting IBDG</b>	<b>Committee meeting IRMG</b>	<b>Committee meeting CODG</b>	<b>Committee meeting MGCG</b>	<b>Poster judges meeting</b>
18:00	<b>Close – Drink reception 1<sup>st</sup> Floor Rootes Building</b>				
19:00	<b>Conference Dinner – Panorama Suite (Rootes Building)</b>				

## Thursday 3 April 2025

09:00	<b>Award Lecture (AL3) – Session Chair: Claudia Blindauer (OC1.05 Lecture Theatre)</b> <b>Latest Developments with Layered Double Hydroxides</b> Dermot O'Hare, University of Oxford, UK				
Theme	<b>Inorganic Biochemistry</b>	<b>Inorganic Reaction Mechanism</b>	<b>Coordination and Organometallic Chemistry</b>	<b>Main Group Chemistry</b>	<b>Sustainability</b>
Room	<b>OC1.04</b>	<b>OC1.06</b>	<b>OC1.05</b>	<b>OC0.04</b>	<b>OC0.02</b>
Session Chair	Claudia Blindauer	Amit Kumar	Joy Farnaby	Richard Kong	John Fielden
09:50	<b>Delineating the interactions of cytotoxic pyrrole-based metal chelates with human serum albumin</b> Orde Munro, University of Leeds, UK (IBDG-O16)	<b>The Active Encounter Complex in Frustrated Lewis Pair Chemistry</b> Alastair Littlewood, University of Birmingham, UK (IRMG-O15)	<b>Cyclohexyl-PCP Supported Titanium Dinitrogen Complexes for Nitrogen Silylation and Small Molecule Activation</b> Sara Belazregue, Imperial College London, UK (CODG-O17)	<b>Zwitterionic Heavy Main Group Species in Redox Organometallics</b> Oriol Planas, Imperial College London, UK (MGCG-O16)	<b>Exploring the pH-dependent self-assembly of polyoxometalates in organic media using multinuclear chemical shift imaging NMR</b> Matthew Wallace, University of East Anglia, UK (SUS-O15)



10:10	<p><b>Mass spectrometric imaging and quantitative analysis of the <i>in vivo</i> biodistribution of trastuzumab using a rhodium(III) sarcophagine complex functionalized with dibromopyridazine dione</b></p> <p>Michelle Ma, King's College London, UK (IBDG-O17)</p>	<p><b>Hypervalent Iodine Oxidation of Alcohols: A Mechanistic Puzzle Hiding in Plain Sight</b></p> <p>Paul Dingwall, Queen's University Belfast, UK (IRMG-O16)</p>	<p><b>The development of optically transparent porous thin films for <i>in situ</i> characterization of post synthetic metalation and active site reactivity</b></p> <p>Joe Simmons, Indiana University, USA (CODG-O18)</p>	<p><b>Synthesis of a Tin Carbonyl Complex and its Isomerisation to a Carbene-Stabilised Tin Atom</b></p> <p>Maximilian Dietz, University of Oxford, UK (MGCG-O17)</p>	<p><b>Isomer Selective Self-Assembly of Coordination Cages from Low Symmetry Ligands</b></p> <p>James Lewis, University of Birmingham, UK (SUS-O16)</p>
10:30	<p><b>Design and development of gold(III)-glycoconjugates as antiviral agents against SARS-CoV-2</b></p> <p>Luca Ronconi, University of Galway, Ireland (IBDG-O18)</p>	<p><b>Oxidation States and Inverted Ligand Fields: Facts or Artefacts?</b></p> <p>Robert Deeth, University of Warwick, UK (IRMG-O17)</p>	<p><b>Role-reversal in hybrid polyoxometalate Donor-<math>\pi</math>-Acceptor non-linear optical chromophores</b></p> <p>Claire Jones, University of East Anglia, UK (CODG-O19)</p>	<p><b>Synthesis, Reactivity and Computational Studies of the [NCCCO]<sup>-</sup> Cyanoketenate Anion</b></p> <p>Laura English, University of Birmingham, UK (MGCG-O18)</p>	<p><b>Coordinating a New Approach to Drug Detection: Functional Metal Complex Based Ionic Liquids</b></p> <p>Anthony Fitzpatrick, Nottingham Trent University, UK (SUS-O17)</p>
10:50	<b>Tea and Coffee Break</b>				
11:10	<p><b>Plenary (PL5) – Session Chair: Joseph Wright (OC1.05 Lecture Theatre)</b></p> <p><b>Organometallic Chemistry at the Edge: Installing Active Sites on Clusters and Nanosheets</b></p> <p>Alexandra Velian, University of Washington, USA</p>				
11:55	<b>Closing Remarks</b>				

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