

50 years of Synchrotron Radiation in the UK and its global impact
26-29 June 2018, University of Liverpool, UK

DAY 1: TUESDAY 26th JUNE 2018

13:00	15:00	Check in, registration (Central Teaching Laboratory, Building 22)
15:00	16:00	Opening Ceremony : Sir Venki Ramakrishnan, Prof Mark Thomson, Andrew Harrison, Susan Smith, Keith Hodgson, Richard Catlow & Samar Hasnain
16:00	17:00	Chair: Richard Catlow PLENARY 1: Moniek Tromp (Amsterdam, Netherlands) <i>Synchrotron Radiation to Observe Molecules React – From ‘Death by White Chocolate’ to ‘Poached Eggs’</i>
17:00	18:00	Chair: Sir Venki Ramakrishnan (MRC LMB Cambridge and President of the Royal Society) PLENARY 2: Ian Munro (Daresbury, UK) 50 Years of SYNCHROTRON Radiation in the UK
18:15	22:30	RECEPTION, POSTERS & BUFFET DINNER (Welcome by Dame Janet Beer (Vice Chancellor, University of Liverpool)) (Student Guild, Building 502)

DAY 2: WEDNESDAY 27th JUNE 2018

09:00-10:30	Plenary Session 2: Chair Sir Tom Blundell PLENARY 3: BIOLOGY : Sir Venki Ramakrishnan <i>Synchrotrons and the structure of ribosome</i>
10:30-11:00	PLENARY 4: Tetsuya Ishikawa (Japan) <i>Accelerator-Based X-ray Sources; SR, XFEL and Beyond</i> COFFEE/TEA & POSTERS

	Stream 1 (Lecture Theatre B)	Stream 2 (Lecture Theatre C)	Stream 3 (Lecture Theatre A)
11:30 13:00	BIOLOGY (Chemical Biology and Drug design) Chair: James Naismith (Harwell) and Richard Garratt (Brazil)	MATERIALS (I) - Energy Chair: XXXX	ACCELERATOR (I) Chair: Caterina Biscari (ALBA) and Vic Suller (Daresbury & Louissiana)
S E S I O N 1	11:30 12:00 Harren Jhoti (Astex,UK) <i>From X-rays to bringing drugs on the market</i>	Richard Walton (Warwick) <i>In Situ Synchrotron X-ray Diffraction Studies of the Crystallisation of Functional Inorganic Materials under Solvothermal Conditions</i>	Toru Hara (SPring-8, Japan) <i>Recent Progress and Future plans of SACL: Multi-beamline XFEL light source</i>
	12:00 12:30 Andreas Förster (Switzerland) <i>Transforming X-ray detection: PILATUS and EIGER</i>	Chris Hardacre (Manchester) <i>Understanding the structure of heterogeneous catalysts under thermal and non-thermal plasma activation</i>	Winfried Decking (DESY, Germany) <i>Recent developments in hard X-ray FELs</i>
	12:30 13:00 Glaucius Oliva (USP, Brazil) <i>Structural biology and drug discovery against Zika virus and other arboviruses</i>	Caroline Kirk (Edinburgh) <i>Investigating the environmental stability of synthetic analogues of metatorbernite (Cu(UO₂)₂(PO₄)₂·8H₂O)-type minerals</i>	Jim Clarke (Daresbury, STFC) <i>Next Generation Light Source R&D at Daresbury Laboratory</i>

13:00-14:15 LUNCH & POSTERS

	Stream 1 (Lecture Theatre B)	Stream 2 (Lecture Theatre C)	Stream 3 (Lecture Theatre A)
14:30 16:30	CHEMISTRY (I) Chair: Andy Fitch (ESRF)	PHYSICS Chair: Ingolf Lindau (Stanford/MAX IV)	Advanced methods in structural Biology Chair: Andrew Thompson (SOLEIL) & John Helliwell (Manchester)
S E S I O N 2	14:30 15:00 Emma Gibson (Glasgow, UK) <i>Developments in in situ and operando spectroscopy for catalysis</i>	Steve Collins (DIAMOND, UK) <i>X-ray Physics: From new phenomena to new techniques.</i>	Arwen Pearson (CFEL, Germany) <i>Developing new tools to enable time-resolved structural biology</i>
	15:00 15:30 Andrew Beale (UCL, UK) <i>Chemical imaging of catalytic systems under operational conditions</i>	Piero Pianetta (Stanford, USA) <i>The genesis and evolution of synchrotron radiation research at Stanford</i>	Masaki Yamamoto (RIKEN, Japan) <i>Development of beamlines for protein microcrystallography at SPring-8</i>
	15:30 16:00 Bill Clegg (Newcastle, UK) <i>The development and exploitation of synchrotron single-crystal diffraction for chemistry and materials</i>	Laura Heyderman (ETH Zurich) <i>Driving Discovery in Mesoscopic Magnetism with Synchrotron X-rays</i>	Javier Perez (SOLEIL, France) <i>SAXS analysis of membrane proteins in detergent solutions</i>

16:00 16:30 **COFFEE/TEA & POSTERS**

16:40 18:00 **Plenary Session 3: Chairs (Inglof Lindau)**
PLENARY 5: Simon Billing (Columbia, USA)

PLENARY 6: Mikael Eriksson (Lund, Sweden)

18:15 22:30 **SPECIAL DINNER (The Crypt, Metropolitan Cathedral)**

DAY3: THURSDAY 28 June 2018

09:00-10:30 **Plenary Session 4: Chairs Samar Hasnain (Liverpool) and Andrew Harrison (Diamond)**

PLENARY 7: John Spence (ASU, USA)

Imaging protein dynamics with an X-ray laser

PLENARY 8: Bert Weckhuysen (Utrecht)

Spatial and Temporal Exploration of Heterogeneous Catalysts with Synchrotron Radiation

10:30-11:00 **COFFEE/TEA & POSTERS**

	Stream 1 (Lecture Theatre B)	Stream 2 (Lecture Theatre C)	Stream 3 (Lecture Theatre A)
11:30 13:00	BIOLOGY - Multi-protein complexes Chair: E. Yvonne Jones (Oxford) and Brit Hedman (SSRL, Stanford)	MATERIALS (II) - Functional Materials Chair: Rasmita Ravel (Liverpool)	PHYSICS Chair: Malcolm Cooper (Warwick) & Peter Hatton (Durham)
S	11:30 12:00 Natalie Strynadka (UBC, Canada) <i>Structure-based analysis of the T3SS injectisome of pathogenic bacteria</i>	Simon Parsons (Edinburgh, UK) <i>High Pressure and Structure-Property Relationships in Molecular Functional Materials.</i>	Z.-X. Shen (Stanford, USA) <i>Coupled Interactions as a Pathway for High Temperature Superconductivity</i>
E	12:00 12:30 Kiyoshi Nagai (MRC, Cambridge) <i>CryoEM snapshot of the spliceosome provide catalytic mechanism of pre-mRNA splicing</i>	Matt Rosseinsky (Liverpool)	Tom Hase (Warwick) <i>XMaS: the UK CRG's contribution to materials research over 20 years.</i>
S	12:30 13:00 Richard Garratt (USP, Brazil) <i>The Flexibility of Septins, their filaments and their higher order complexes</i>	Dong Liu (Oxford) <i>In situ X-ray computed tomographic imaging of the deformation and fracture of composite materials at temperatures above 1000°C</i>	Deny Mills (APS, USA) <i>Static and Dynamic Imaging with Hard X-rays at the Advanced Photon Source</i>

13:00-14:15 **LUNCH & POSTERS**

	Stream 1 (Lecture Theatre B)	Stream 2 (Lecture Theatre C)	Stream 3 (Lecture Theatre A)
14:20 16:10	BIOLOGY - cryoEM Chair: Helen Saibil (London)	CHEMISTRY (II) Chair: Paul Raithby (Bath)	ACCELERATOR (II) Chair: Chair: Richard Walker (DIAMOND) and Susan Smith (Daresbury)
S	14:20 14:50 Helen Saibil (Birkbeck, London) <i>Machinery for protein disaggregation</i>	Philip Lightfoot (St Andrews, UK) <i>Resolution – the key to resolving complex problems in power diffraction</i>	Andreas Streun (PSI, Switzerland) <i>Pushing the Limits of Storage Ring Light Sources</i>
E	14:50 15:20 Gabriel Lander (Scripps, USA) <i>Structural studies of mitochondrial AAA+ proteases using cryo-EM</i>	John Evans (Southampton) <i>Towards tracking the primary steps in catalytic reactions</i>	Andrew Dent (Diamond) <i>The Diamond Upgrade; Diamond-II</i>
S	15:20 15:50 Vicky Gold (Exeter, UK) <i>Twitch or swim: understanding prokaryotic filament- driven motility</i>	Robert Weatherup (Manchester, UK) <i>In situ soft x-ray spectroscopy of atmospheric pressure reactions</i>	Pantaleo Raimondi (ESRF) <i>ESRF-EBS</i>
I	15:50 16:10 Stephen Muench (Leeds, UK) <i>Developing electron microscopy for structure based drug design</i>	Grazia Malta (Cardiff, UK) <i>Operando XAFS study of single-site gold on carbon acetylene hydrochlorination catalyst</i>	Vic Suller (Louisiana) <i>The Daresbury SRS – its origins, realisation and achievements</i>

16:10 16:35 **COFFEE/TEA & POSTERS**

16:40 18:00 **Plenary Session 5: Chairs Galucius Oliva, USP, Brazil) and Susan Smith (Daresbury)**

PLENARY 9: Liu Lin (LNLS, Campinas, Brazil)

Synchrotron radiation sources in Brazil

PLENARY 10: BIOLOGY : Sir Tom Blundell (Cambridge)

Applications of Synchrotron Radiation to Understanding Multicomponent Assemblies in Cell Signaling, DNA Damage Repair and Drug Discovery

19:00 23:00 **GALA CELEBRATORY DINNER (The Crypt, Metropolitan Cathedral)**

DAY 4: FRIDAY 29TH JUNE 2018

09:00-10:30 **Plenary Session 6: Chairs (Andy Dent (Diamond) and Svetlana Antonyuk (Liverpool)**

PLENARY 11: Phil Withers (Manchester)

Insights into advanced materials by imaging and diffraction

PLENARY 12: Dave Stuart (Oxford/Diamond)

The co-evolution of structural biology and synchrotron

10:30-11:00 **COFFEE/TEA & POSTERS**

	Stream 1 (Lecture Theatre B)	Stream 2 (Lecture Theatre C)	Stream 3 (Lecture Theatre A)
11:30 13:00	BIOLOGY (serial crystallography) Chair: Sean McSweeney (Brookhaven)	MATERIALS (III) - Energy Chair: Richard Catow (UCL/Cardiff)	HOT TOPICS Chair:
S	11:30 12:00 Keith Moffat (Chicago, USA) <i>Laue Diffraction and Time-resolved Crystallography: A Personal History</i>	Veronica Celorrio (UCL) <i>Insights into the Co-Fe spinels durability during the oxygen evolution reaction by following in situ transformations</i>	Chris Hall (Monash, Australia) <i>SR Biomedical x-ray imaging and radio-therapy</i>
E	12:00 12:30 Petra Fromme (Arizona, USA) <i>Serial Crystallography: success and challenges</i>	Paul McMillan (UCL, UK) <i>New nitrides and energy application</i>	Mark Tobin (Australian Light Source) <i>From the Nanoscale to Cosmic Scale Synchrotron Infrared: from Daresbury to the World</i>
S	12:30 13:00 Clyde Smith (Stanford, USA) <i>New Opportunities for Structural Biology Research at LCLS and SSRL</i>	Alan Chadwick (Kent, UK) <i>Preserving Old Wrecks with SR</i>	Thomas Halsted (Liverpool - 15 minutes) <i>Serial crystallography of nitrite reductase</i> Louis Piper(Binghamton University - 15 minutes) <i>Oxygen redox mechanism in Li-ion battery cathodes</i>

13:00-15:30 **POSTER PRIZES**

13:30 15:30 **LUNCH and Farewell Drinks**