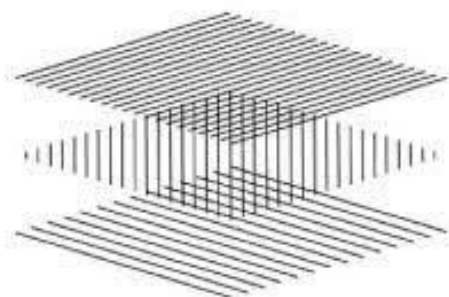


British Liquid Crystal Society

Annual Meeting 2024
10th – 12th April - Oxford

Conference Booklet

Hosted by the University of Oxford



BRITISH
LIQUID
CRYSTAL
SOCIETY



Photo Credit: Dr Ben Outram



Welcome

The Organisers of this year's BLCS Annual Meeting are delighted to welcome you to Worcester College and the city of Oxford. As has been the tradition for many years, this meeting aims to provide a platform for early career researchers to present their work to an expert audience, either as an oral presentation or a poster presentation. We are also delighted to be joined by our four invited speakers as well as the more established members of our community who have kindly agreed to give presentations at this year's meeting.

Finally, we would like to thank everyone who is participating in this meeting and to all those who are contributing to such a rich and varied programme.

This meeting could not take place without our sponsors...



Engineering and
Physical Sciences
Research Council



... and those that have helped to organise this event:

The Scientific Committee: Stephen Morris (Chair), Nigel Mottram, and Giampaolo d'Alessandro.

The Registration Team: Vicky Payne & the Engineering Science Events Team.

We are particularly grateful to Worcester College and their Conference and Catering Team for both hosting and feeding us from the 10th to 12th April 2024.

Essential Information

Transport

The conference is being held in the Sultan Nazrin Shah Centre (SNSC) at Worcester College (one of the 36 Colleges and 3 societies that make up the University of Oxford). Information about travelling to Oxford and finding your way around in relation to the University can be found here: <https://www.ox.ac.uk/visitors/visiting-oxford/how-get-oxford>.

Worcester College is situated a short walk from Oxford Train Station¹. A searchable map showing where the college is in relation to the city can be found here: [Searchable map | University of Oxford](#). Further information about the layout of Worcester College along with useful information for visitors can be found at this webpage: <https://www.worc.ox.ac.uk/visit/visitors>.

All of the lectures will take place in the Nazrin Shah lecture theatre in the SNSC, which is labelled in the college map that can be accessed here: [Worcester-College-Map-2023-Visitors.pdf \(ox.ac.uk\)](#) and a copy is also provided on the next page. The poster presentation will take place in the foyer outside of the lecture theatre which is also where the refreshments will be served.

Presentation Instructions

Talks: As per the programme, contributed talk slots are 20 minutes long which should include time for questions. We advise speakers to plan for 15-minute talks. Invited and Prize talks are scheduled for a 40-minute slot.

Posters: Poster boards will be 91cm wide and 210cm tall, which is sufficient for an A0 poster in portrait orientation or an A1 poster in landscape orientation. The poster boards will be available throughout the conference and presenters are asked to put their poster up as soon as they arrive.

Catering

Refreshments and lunch will be provided on all three days and will be served in the Sultan Nazrin Shah Centre. There is no provision for dinner on Wednesday, but are many restaurants located close by and spread throughout the city (some more expensive than others!). There are many that are easily accessible from Worcester College with no need for taxis or public

¹ Please note that Oxford Parkway is located on the edge of the city.

transport. More information about where to eat and drink can be found here: <https://oxfordcity.co.uk/explore-oxford/food-and-drink/>

There will be a Conference Dinner on Thursday evening which is provided as part of the registration. This will be held in the Dining Hall at Worcester College, which is labelled as 'Hall' on the college map: [Worcester-College-Map-2023-Visitors.pdf \(ox.ac.uk\)](#).

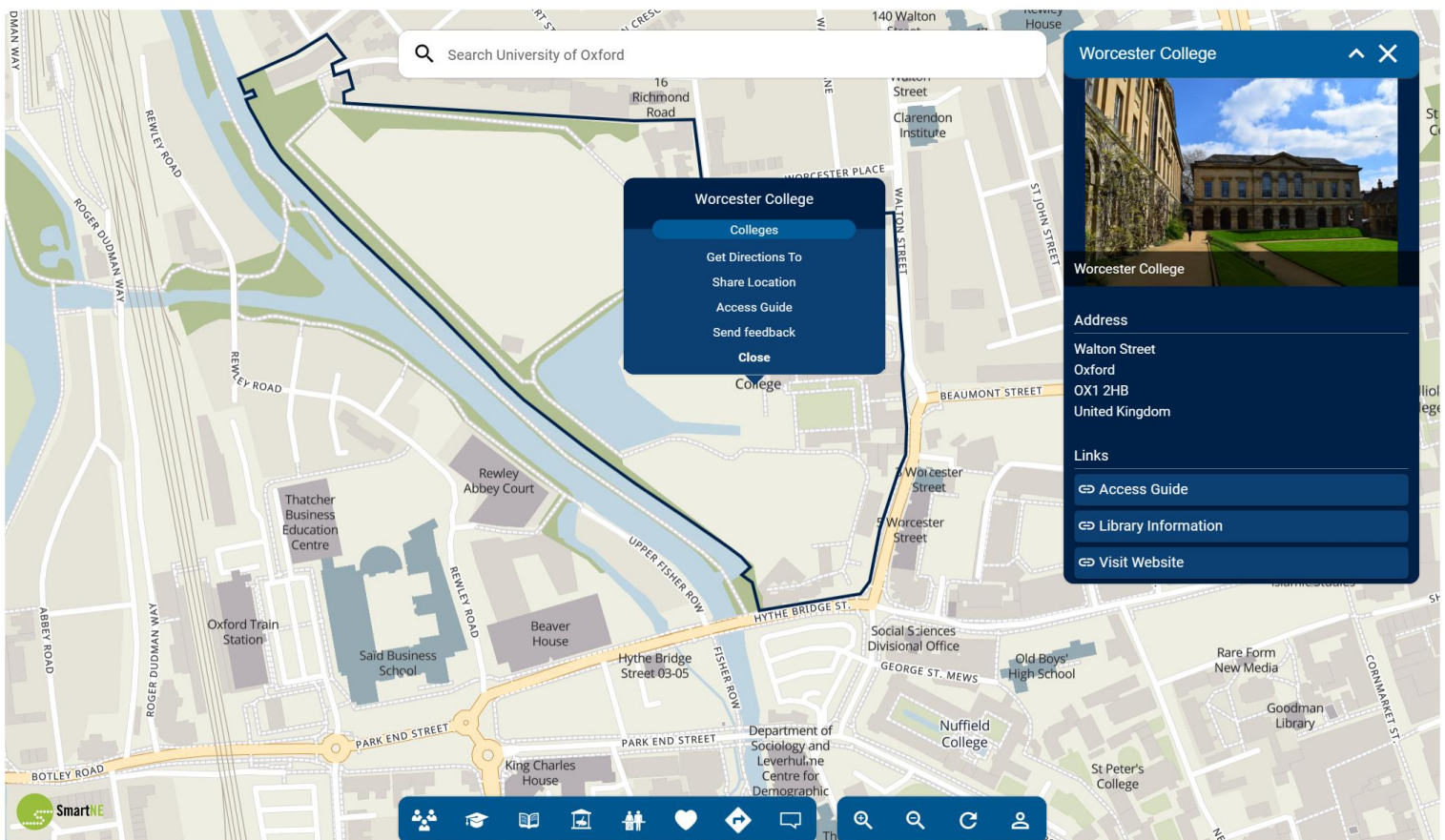
WI-FI access

Wi-fi access is available throughout Worcester College via Eduroam or the visitor network.

Contacts

Any further enquires can be sent by email to stephen.morris@eng.ox.ac.uk or please talk to any of the organising team.

A screenshot of the Searchable Oxford Map: [Searchable map | University of Oxford](#) – location of Worcester College is highlighted.





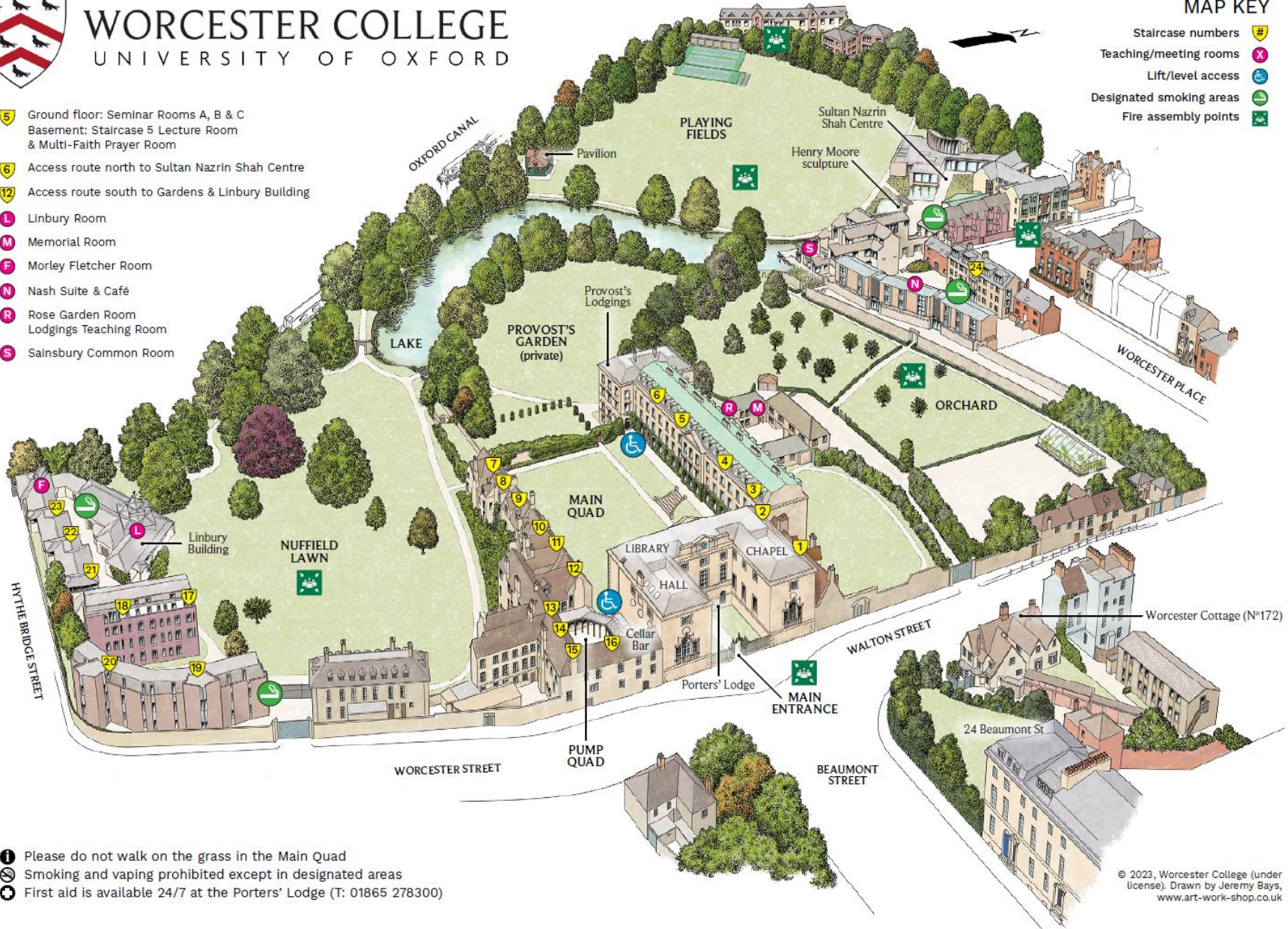
WORCESTER COLLEGE

UNIVERSITY OF OXFORD

- 5** Ground floor: Seminar Rooms A, B & C
Basement: Staircase 5 Lecture Room & Multi-Faith Prayer Room
- 6** Access route north to Sultan Nazrin Shah Centre
- 12** Access route south to Gardens & Linbury Building
- L** Linbury Room
- M** Memorial Room
- F** Morley Fletcher Room
- N** Nash Suite & Café
- R** Rose Garden Room
Lodgings Teaching Room
- S** Sainsbury Common Room

MAP KEY

- Staircase numbers
- Teaching/meeting rooms
- Lift/level access
- Designated smoking areas
- Fire assembly points



- i** Please do not walk on the grass in the Main Quad
- 🚭** Smoking and vaping prohibited except in designated areas
- 🆘** First aid is available 24/7 at the Porters' Lodge (T: 01865 278300)

Programme Summary

Time	Wednesday 10th April	Thursday 11th April	Friday 12th April				
9:20 am - 9:40 am		11: Schenning	12: Ravnik		KEY		
9:40 am - 10:00 am					Active & Biaxial Nematics		
10:00 am - 10:20 am		Berrow	Sahoo		Ferroelectric Nematics		
10:20 am - 10:40 am		Liu	D'Allessandro		Liquid Crystal Elastomers, Polymers, & Polymerisation		
10:40 am - 11:00 am		Niculescu	Coffee		Liquid Crystal Theory and Simulations		
11:00 am - 11:20 am		Coffee			Printed Liquid Crystals		
11:20 am - 11:40 am			13: Walker		Applications of Liquid Crystals		
11:40 am - 12:00 pm		Mur			Liquid Crystal Photonics & Topology		
12:00 pm - 12:20 pm	Registration	Zhao	Jiang		New Polar Liquid Crystals		
12:20 pm - 12:40 pm		Kwajighu	Cruickshank				
12:40 pm - 1:00 pm		Chakrabarti	Hobbs				
1:00 pm - 1:20 pm	Lunch	Lunch	Lunch				
1:20 pm - 1:40 pm							
1:40 pm - 2:00 pm							
2:00 pm - 2:20 pm				Sturgeon Lecture:	Prize Giving & Gray Medal Lecture	BLCS Committee Mtg.	
2:20 pm - 2:40 pm	Yeomans						
2:40 pm - 3:00 pm	Houston						
3:00 pm - 3:20 pm	Giglio	Kamal					
3:20 pm - 3:40 pm	Sponsors	Orr					
3:40 pm - 4:00 pm	Coffee	Coffee					
4:00 pm - 4:20 pm							
4:20 pm - 4:40 pm	Raistrick	Hands					
4:40 pm - 5:00 pm	Tufaha	Wyatt					
5:00 pm - 5:20 pm	Fagg	Turvey					
5:20 pm - 5:40 pm	Gibb	Xu					
5:40 pm - 6:00 pm	Posters	AGM					
6:00 pm - 6:20 pm							
6:20 pm - 6:40 pm							
6:40 pm - 7:00 pm							
7:00 pm - onwards		Conf. Dinner					

Programme

Day I – 10th April 2024

12:00 pm - 1:00 pm	Registration		
1:00 pm - 2:00 pm	Lunch		
	Active Nematics: Chair - Prof. Giampaolo D'Alessandro		
2:00 pm - 2:40 pm	Julia Yeomans	University of Oxford	Sturgeon Lecture: Active Nematics: A new approach to mechanobiology
2:40 pm - 3:00 pm	Alexander Houston	University of Glasgow	The Role of Activity Patterning in Active Nematic Flow Transitions
3:00 pm - 3:20 pm	Francesco Giglio	University of Glasgow	On the thermodynamics of biaxial nematics with discrete orientational degrees of freedom
3:20 pm - 3:40 pm	Sponsors Talk		
3:40 pm - 4:20 pm	Coffee		
	Ferroelectric Nematic Liquid Crystals: Chair - Prof. Miha Ravnik		
4:20 pm - 4:40 pm	Thomas Raistrick	University of Leeds	Evidence of order-disorder ferroelectric behavior in NF materials
4:40 pm - 5:00 pm	Naila Tufaha	University of Aberdeen	Diving into Dimerland - Structure property relationship of liquid crystal dimers and the ferroelectric nematic phase
5:00 pm - 5:20 pm	Kieran Fagg	University of Leeds	Deviations from Nematic Behaviour in Polar Nematic Liquid Crystals
5:20 pm - 5:40 pm	Calum Gibb	University of Leeds	A New Chemical Structure Space Exhibiting the Ferroelectric (NF) Nematic Phase.
5:40 pm - 7:00 pm	Posters		

Day 2 – 11th April 2024

Liquid Crystal Elastomers, Polymers, & Polymer-Stabilization: Chair - Prof. Tim Wilkinson			
9:20 am - 10:00 am	Albert Schenning	Eindhoven University of Technology	Invited Lecture: Stimuli-responsive Materials based on Liquid Crystal Polymers
10:00 am - 10:20 am	Stuart Berrow	University of Leeds	Structure - Property Relationships in Auxetic Liquid Crystal Elastomers
10:20 am - 10:40 am	Yang Liu	University of Oxford	Surface instabilities of a half-space coated by a liquid crystal elastomer film
10:40 am - 11:00 am	Oana Niculescu	University of Cambridge	The influence of UV exposure on polymer-stabilised liquid crystal blue phases
11:00 am - 11:40 am	Coffee		
Liquid Crystal Theory and Simulations: Chair - Prof. Nigel Mottram			
11:40 am - 12:00 pm	Urban Mur	University of Ljubljana	Numerical simulations for liquid crystal photonics
12:00 pm - 12:20 pm	Guinan Zhao	University of Manchester	All-atom simulations of CB6OIBeOn: a progress report
12:20 pm - 12:40 pm	Ijupatil Kwajighu	University of Glasgow	Mathematical Modelling of Active Nematics
12:40 pm - 1:00 pm	Dwaipayan Chakrabarti	University of Birmingham	Atomistic Simulations of Columnar Ordering of Triphenoxazoles - A New Class of Fluorescent Discotics
1:00 pm - 2:00 pm	Lunch		
2:00 pm - 3:00 pm	Prize Giving & Gray Medal Lecture		
Printed Liquid Crystals: Chair - Prof. Albert Schenning			
3:00 pm - 3:20 pm	Waqas Kamal	University of Oxford	Liquid Crystals Droplets for Photonic Applications
3:20 pm - 3:40 pm	Alva C. J. Orr	University of Oxford	Stable and Metastable Director Fields in Printed Chiral Nematic Liquid Crystal Droplets
3:40 pm - 4:20 pm	Coffee		
Applications of Liquid Crystals: Chair - Prof. Helen Gleeson			
4:20 pm - 4:40 pm	Philip Hands	University of Edinburgh	Long-pulse liquid crystal lasers: Redefining definitions of threshold
4:40 pm - 5:00 pm	Peter Wyatt	Merck	The next generation of optical components for augmented and virtual reality headsets enabled by reactive mesogens
5:00 pm - 5:20 pm	Martha Turvey	University of Warwick	Unusual applications: Liquid crystal sensors for ultrasonic displacement measurements
5:20 pm - 5:40 pm	Alec Xu	University of Oxford	Laser-written Tuneable Liquid Crystal Aberration Correctors
5:40 pm - 6:00 pm	BLCS Annual General Meeting		
7 pm - onwards	Drinks Reception & Conference Dinner: Worcester College Dining Hall		

Day 3 – 12th April 2024

Liquid Crystal Photonics & Topology: Chair - Prof. Stephen Morris			
9:20 am - 10:00 am	Miha Ravnik	University of Ljubljana	Invited Lecture: Photonic Liquid Crystal Soft Matter
10:00 am - 10:20 am	Rajalaxmi Sahoo	University of Leeds	Impact of Photoisomerization on the One-Dimensional and Three-Dimensional Photonic Structures of Liquid Crystals
10:20 am - 10:40 am	Giampaolo D'Alessandro	University of Southampton	Topological data analysis: a roadmap to liquid crystal physics
10:40 am - 11:20 am	Coffee		
New Polar Liquid Crystals: Chair - Dr. Dwaipayan Chakrabarti			
11:20 am - 12:00 pm	Rebecca Walker	University of Aberdeen	Invited Lecture: Design of new materials exhibiting polar & modulated liquid crystal phases
12:00 pm - 12:20 pm	Wanhe Jiang	University of Leeds	The behaviour of high dipole (10.6-13.6 D) nematic mesogens based on a novel phenyl pyrimidine motif
12:20 pm - 12:40 pm	Ewan Cruickshank	Robert Gordon University	New Compounds Based on RM734 Which Exhibit the Ferroelectric Nematic Phase
12:40 pm - 1:00 pm	Jordan Hobbs	University of Leeds	Novel Longitudinal Polar Smectic Phases
1:00 pm - 2:00 pm	Lunch		
2:00 pm - 2:40 pm	BLCS Committee Meeting		

Posters

P1	Abigail Pearson	University of Aberdeen	Alkylthio- Terminated Liquid Crystal Dimers and the Twist-Bend Smectic Phases
P2	Adithya Pradeep	University of Oxford	Applications through Bulk Polymerization of Pi cell domains
P3	Alanoud Al Suwaidan	University of Leeds	Investigating the influence of crosslinker concentrations on the phase templating of liquid crystal elastomers
P4	An Aloysius Wang	University of Oxford	Optical Skyrmions through the lens of Cohomology
P5	Bohan Chen	University of Oxford	Laser Written Diffraction Gratings and On-chip Optical Waveguides
P6	Bradley Mee	University of Oxford	Reconfigurable Optically Transparent Patch Antenna Using Nematic Liquid Crystal
P7	Camron Nourshargh	University of Oxford	Laser Written Liquid Crystal Optical Vortex Beam Generators
P8	Dezhi Shen	University College London	Phase Front Elements
P9	Guanxiong Zhang	University of Oxford	Stokes parameters and polarization properties of band-edge liquid crystal lasers
P10	Ji Qin	University of Oxford	Tunable Waveguides with Liquid Crystals
P11	Jinge Guo	University of Oxford	Printed Liquid Crystal Droplets for Tunable Microlenses
P12	Junseok Ma	Pohang University of Science and Technology	Enhancing Light-driven Polymer Stabilized Liquid Crystal Smart Devices
P13	Linpei Xue	University of Oxford	Time-Dependent Phase Modulation in Liquid Crystal Photonic Devices
P14	Marijus Juodka	University of Aberdeen	The ferroelectric nematic behaviour of DIO analogues containing a heteroaromatic moiety
P15	Mengmeng Li	University of Oxford	Printed Liquid Crystal Droplets for Optical Vortex Beam Generation
P16	Mona Alsubaie	University of Manchester	Spherical Microparticles Dynamics in Anisotropic Fluids Under Electric Fields
P17	Nathan Spiller	University of Oxford	A Liquid Crystal Active Screen for RGB Laser Speckle Reduction
P18	Qihao Han	University of Oxford	Flexoelectric-Liquid Crystal Diffraction Gratings for Beam Steering Technology
P19	Runchen Zhang	University of Oxford	An alternative set of polarisation metrics for information analysis
P20	Sarangi Krishna	Sheffield Hallam University	Simulations of liquid crystal tactoids
P21	Xuke Qiu	University of Oxford	Complex Structured Light Generation using Printed Liquid Crystal Droplets
P22	Zhi Chai	University of Oxford	Electromagnetic Modeling of Liquid Crystal Based Reconfigurable Intelligent Surfaces in Terahertz Communications
P23	Zhiyu Xu	University of Oxford	Switchable polymerizable Liquid Crystal Fresnel Zone Plates for Near Eye Displays
P24	Zimo Zhao	University of Oxford	3D Laser Sculpted Tunable Diffractive Optics Elements in Liquid Crystal Devices