

# ILCC2022

28<sup>th</sup> International Liquid Crystal Conference

24<sup>th</sup> to 29<sup>th</sup> July 2022, NOVA School of Science and Technology, Lisbon, Portugal

Posters Sessions online (Padlet)

Liquid Crystal Art Exhibition (Library)

Registration (entrance Building IV)

Monday, 25th July					
07:20-08:20	Registration (entrance building IV)				
Grand Auditorium					
08:35-09:00	Opening session				
Chair: Agnes Buka					
09:00-09:50	PL-1 Sriram Ramaswamy				
09:50-10:15	Coffee Break				
	Grand Auditorium	Building IV Amph.I	Building IV Amph.II	Building IV Amph.III	Building IV Amph.IV
	Chair: Corrie Imrie	Chair: Helen Gleeson	Chair: Igor Musevic	Chair: Peter Palffy-Muhoray	Chair: Peter Collings
10:15-10:30	ILK-1-GA: John Goodby	ILK-1-AI: Tomiki Ikeda (online)	IL-1-AII: Yuka Tabe (online)	ILK-1-AIII: John Ball	ILK-1-AIV: Pawel Pieranski
10:30-10:45					
10:45-11:00	DO-1: T. Kato (online)	BO-1: T. Ohzono (online)	AO-1: Y. Uchida	EO-1: K. Aoki (online)	CO-1: M. Chemingui (online)
11:00-11:15	DO-2: M. Alaasar (online)	BO-2: S. Kawano (online)	AO-2: L. Hoffmann	EO-2: Y. Han	CO-2: Y. Liu (online)
11:15-11:30	DO-3: E. Cruickshank	BO-3: K. Okoshi (online)	AO-3: J. Jeong (online)	EO-3: G. Napoli	CO-3: A. Eremin
11:30-11:45	ILK-2-GA: Ewa Görecka	IL-2-AI: Tommaso Bellini	AO-4: A. Tavera-Vazquez	IL-2-AIII: Alberta Ferrarini	CO-4: J. Kim
11:45-12:00			AO-5: D. Benkowska-Biernacka		CO-5: P. Michels-Brito
12:00-14:00	Lunch				
	Grand Auditorium	Building IV Amph.I	Building IV Amph.II	Building IV Amph.III	Building IV Amph.IV
	Chair: Tommaso Bellini	Chair: Mark Maclachlan	Chair: Ivan Smalyukh	Chair: Kristiaan Neyts	Chair: Alexey Eremin
14:00-14:15	ILK-3-GA: Frank Giesselmann	ILK-3-AI: Timothy Bunning	ILK-2-AII: Agnes Buka	ILK-3-AIII: Dirk Broer	CO-6: Y. Takenaka (online)
14:15-14:30					CO-7: G. Nava
14:30-14:45	DO-4: C. Kyrou (online)	BO-4: A. Gablier	EO-4: E. Kats (online)	FO-1: A. Mamonova	CO-8: H. Wensink
14:45-15:00	DO-5: G. D'Alessandro	BO-5: T. Hebner	EO-5: D. Castro	FO-2: Y. Tsukamoto	CO-9: A. Zavala-Martinez
15:00-15:15	IL-4-GA: Noel Clark (online)	BO-6: M. Abdelrahman	EO-6: J. Garcia	FO-3: M. Stebryte	IL-2-AIV: Peter Collings
15:15-15:30		BO-7: L. de Haan	EO-7: C. Modes	FO-4: J. Szczytko	
15:30-16:00	Coffee Break				
	Grand Auditorium	Building IV Amph.I	Building IV Amph.II	Building IV Amph.III	Building IV Amph.IV
	Chair: Pawel Pieranski	Chair: Eugene Terentjev	Chair: Ralf Stannarius	Chair: José Luis Serrano	Chair: Patrick Davidson
16:00-16:15	ILK-5-GA: Nicholas Abbott	BO-8: M. Saed	IL-3-AII: Jonathan Selinger	DO-6: I. Abdulhalim	CO-10: K. De France
16:15-16:30		BO-9: K. Lee		DO-7: H. Nádasi	CO-11: C. Klopp
16:30-16:45	AO-6: M. Ravnik	BO-10: S. Lügger	EO-8: D. de las Heras	DO-8: I. Bechtold	CO-12: A. Visco
16:45-17:00	AO-7: P. Guillamat	BO-11: P. Paudel (online)	EO-9: C. Dias	DO-9: Y. Garbovskiy (online)	CO-13: T. Atherton
17:00-17:15	ILK-6-GA: Tom Lubensky (online)	BO-12: R. Koizumi (online)	EO-10: E. Grelet	IL-4-AIII: Carsten Tschierske (online)	CO-14: D. Manaila-Maximean (online)
17:15-17:30		BO-13: C. Chen (online)	EO-11: S. Harkai		CO-15: T. Emeršič (online)
17:30-19:30	Poster Session I - Onsite (Ágora Room) + Online (Padlet and Zoom)				

A - Liquid Crystals in Biology and Active Matter	
B - Macromolecular Liquid Crystals	
C - Confined Liquid Crystals	
D - Design of New Materials	
E - Mathematical Modelling, Symmetry and Topology	
F - Novel Applications	

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**Monday, 25<sup>th</sup> July**

Room: **Grand Auditorium**

09:00-09:50

**Chair: Agnes Buka**

**PL-1** - "Active liquid crystals: order, fluctuations, flow, defects, and chirality" S. Ramaswamy.

Coffee Break

10:15-12:00

**Chair: Corrie Imrie**

**ILK-1-GA** - "Making Materials: Serendipity or Rational Design" J.W. Goodby; S.J. Cowling.

**DO-1** - "Nanostructured Liquid-Crystalline Materials for Water Treatment Membranes and Electrolytes for Lithium Ion Batteries" T.K. Kato.

**DO-2** - "Network Formation and Transition from One Dimensional to Three-Dimensional Liquid Crystalline Phases in Photosensitive Polycatenars" M. Alaasar; C. Yu; F. Liu; C. Tschierske.

**DO-3** - "The Influence of Lateral Substituents on the Formation of the Ferroelectric Nematic Phase" E. Cruickshank; S. Brown; R. Walker; M. Majewska; A. Makal; D. Pocięcha; E. Górecka; J.M.D. Storey; C.T. Imrie.

**ILK-2-GA** - "Intrinsically chiral ferronematic liquid crystals" D. Pocięcha; R. Walker; E. Cruickshank; J. Szydłowska; P. Rybak; A. Makal; J. Matraszek; J.M. Wolska; J.M.D. Storey; C.T. Imrie; N. Vaupotic; E. Gorecka.

Lunch

14:00-15:30

**Chair: Tommaso Bellini**

**ILK-3-GA** - "Elasticity and chirality in lyotropic nematic liquid crystals" C.F. Dietrich; T. Sottmann; P. Rudquist; P.J. Collings; F. Giesselmann.

**DO-4** - "Impact of nanoparticles on the liquid crystalline order" C. Kyrou; S. Kraly; D. Tsiourvas; I. Lelidis.

**DO-5** - "Topological and physical characterization of doped liquid crystals" G. D'Alessandro; I. Membrillo-Solis; T. Orlova; N. Podoliak; N. Broukaert; J. Brodzki; M. Kaczmarek.

**IL-4-GA** - "A uniaxial ferroelectric smectic A phase and the smectic A to smectic Z phase transition" X. Chen; V. Martinez; P. Nacke; E. Korblova; A. Manabe; M. Klasen-Memmer; G. Freychet; M. Zhernenkov; M.A. Glaser; L. Radzihovsky; J.E. Maclennan; D.M. Walba; M. Bremer; F. Giesselmann; N.A. Clark

Coffee Break

16:00-17:30

**Chair: Pawel Pieranski**

**ILK-5-GA** - "Dynamic Mechanical Interactions of Biological Vesicles and Cells with Liquid Crystals" N.L. Abbott.

**AO-6** - "Nematic micro-robotics based on far-from-equilibrium topological defects" T.Y. Yao; Ž.K. Kos; Y.L. Luo; F.S. Serra; E.B.S Steager; M.R. Ravnik; K.J.S. Stebe.

**AO-7** - "Spirals and asters direct supracellular organization in nematic tissues" P. Guillamat; C. Blanch-Mercader; K. Kruse; A. Roux.

**ILK-6-GA** - "Theory of director fluctuations about a hedgehog defect" O. Stenull; T.C. Lubensky; A. de la Cotte; P.J. Collings; S. Ettinger; A.J. Yodh.

17:30-19:30

Poster Session I - Onsite (Ágora Room) + Online (Padlet and Zoom)

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Room: **Building IV – Amphitheater I**

10:15-12:00

**Chair: Helen Gleeson**

**ILK-1-AI** - “Sunlight-driven smart windows with polymer/liquid crystal composites for autonomous control of optical properties” T. Ube; J. Imai; M. Yoshida; T. Fujisawa; H. Hasebe; H. Takatsu; T. Ikeda.

**BO-1** - “Stabilized Stripe Domains in Nematic Elastomers with Dynamic Pearlescence” T. Ohzono; H. Minamikawa; E.M. Terentjev.

**BO-2** - “Exploitation of Nanospace in Columnar Liquid Crystals Composed of Shape-Persistent Macrocycles” S.I. Kawano; K. Tanaka.

**BO-3** - “Entropy-Driven Formation of Smectic Phases with Rigid Rod-Like Polymers” K. Okoshi.

**IL-2-AI** - “On the Liquid Crystal Ordering of Nucleic Acids and its Intimate Connection to Watson-Crick Pairing” T. Bellini.

Lunch

14:00-15:30

**Chair: Mark Maclachlan**

**ILK-3-AI** - “Liquid Crystal/Polymer Material Systems” T.J. Bunning; M.E. McConney; N.V. Tabirian; V.V. Tsukruk; D. Nepal.

**BO-4** - “Isotropic liquid-crystalline epoxy-thiol vitrimers” A. Gablier; M.O. Saed; E.M. Terentjev.

**BO-5** - “Sharpening and Amplifying the Stimuli-Response of Liquid Crystalline Elastomers by Molecular Engineering” T.S.H. Hebnar; J.M.M. McCracken; C.N.B. Bowman; T.J.W. White.

**BO-6** - “Microscopic Actuation for Macroscopic Aggregation” M.K. Abdelrahman; L.K. Jang; S. Wang; M. Javed; T.H. Ware.

**BO-7** - “Soft electricity-responsive liquid crystal polymer materials for switchable surfaces” L.T. de Haan; G. Zhou.

Coffee Break

16:00-17:30

**Chair: Eugene Terentjev**

**BO-8** - “Enhanced damping and adhesion in liquid-crystalline elastomers” M.O. Saed; E.M. Terentjev.

**BO-9** - “Electrically Controllable Holographic Colors and Patterns of Liquid Crystal Gels” K.M. Lee; T.J. White; M.E. McConney; T.J. Bunning; N.P. Godman.

**BO-10** - “One-Pot Synthesis of Melt-Processable Supramolecular Soft Actuators” S.J.D. Lugger; D.J. Mulder; A.P.H.J. Schenning.

**BO-11** - “Effect of Director Alignment on Ionic Liquid Crystal Elastomer Based Organic Electrochemical Transistors” C.P.H. Rajapaksha; P.R. Paudel; P.M.S.G. Kodikara; D. Dahal; T.M. Dassanayake Mudiyanse; V. Kaphle; B. Lussem; A. Jakli.

**BO-12** - “Patterned liquid crystal elastomer coating with surface profile controlled by visible light” R.K. Koizumi; H.W. Wang; O.D.L. Lavrentovich.

**BO-13** - “Mesogen alignment in liquid crystal elastomer (LCE) microparticles under mechanical stress: experiments and simulations” C. Chen; V. Palacio-Betancur; S.J. Rowan; J.J. de Pablo.

17:30-19:30

Poster Session I - Onsite (Ágora Room) + Online (Padlet and Zoom)



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10:15-12:00

**Chair: Igor Musevic**

**IL-1-AII** - “Rotation of Chiral LC Droplets Embedded in Lipid Monolayers Driven by Gas Flow” Y. Tabe.

**AO-1** - “Chemistry of Liquid Crystalline Microcapsules” Y. Uchida; Y. Iwai; T. Akita; N. Nishiyama.

**AO-2** - “Tuneable defect-curvature coupling and topological transitions in active shells” L.A. Hoffmann; L.N. Carenza; L. Giomi.

**AO-3** - “Nematodynamic propulsion of pulsating bubbles in nematic liquid crystals” S.-J. Kim; Ž. Kos; E. Um; J. Jeong.

**AO-4** - “Micro-swimmers activated by light at the nematic-isotropic interface of a liquid crystal” A. Tavera-Vazquez; D. Montalvan-Sorrososa; N. Atzin; G. Perez-Lemus; V. Manoharan; J.J. de Pablo.

**AO-5** - “Linear and non-linear optical studies on myelin figures doped with luminescent carbon nanodots” D. Benkowska-Biernacka; S.G. Mucha; K. Matczyszyn.

Lunch

14:00-15:30

**Chair: Ivan Smalyukh**

**ILK-2-AII** - “Topology in lens shape geometry” A.A. Buka; M.T. Mathe; P. Salamon; Z. Karaszi; A. Jakli.

**EO-4** - “Structure factor of liquids and liquid crystals” E.I. Kats; A.R. Muratov.

**EO-5** - “Analytic solutions to the two-dimensional inverse problem of deforming nematic elastomer surfaces” D. Castro; H. Aharoni.

**EO-6** - “Defect evolution in smectic-A to nematic phase transition at undulated surfaces” J.B.D.M. Garcia; M. O’Keefe; M.A. Gharbi; D.A. Beller.

**EO-7** - “Mix and Match: Incommensurate Order Parameters, Phase Separation, and Client Segregation” C.D. Modes.

Coffee Break

16:00-17:30

**Chair: Ralf Stannarius**

**IL-3-AII** - “Director Deformations, Geometric Frustration, and Modulated Phases in Liquid Crystals” J.V. Selinger.

**EO-8** - “Gravity-induced phase phenomena in plate-rod liquid crystalline colloidal mixtures” T. Eckert; M. Schmidt; D. de las Heras.

**EO-9** - ““Flocking” dynamics of active skyrmions” E. Gouveia; N.A.M. Araújo; M. Tasinkevych; C.S. Dias.

**EO-10** - “Elementary Dislocations in Colloidal Smectics: in situ Visualization and Dynamics within the Defect Core” E. Grelet; A. Repula.

**EO-11** - “Reconfigurable Networks of Nematic Topological Defects” S. Harkai; B.S. Murray; C. Rosenblatt; S. Kralj.

17:30-19:30

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10:15-12:00

**Chair: Peter Palffy-Muhoray**

**ILK-1-AIII** - “A free discontinuity model for smectic thin films” J.M. Ball; G. Canevari; B. Stroffolini.

**EO-1** - “Spontaneous Formation of Cubic Phases” K.M. Aoki; Y. Yamamura; S. Kutsumizu; K. Saito.

**EO-2** - “Solution Landscapes of the Ericksen-Leslie Model and its Comparison with the Landau-de Gennes Model” Y.H. Han; J. Yin; Y. Hu; A. Majumdar; L. Zhang.

**EO-3** - “Curvature-induced effects in nematic shells” G. Napoli; O.V. Pylypovskyi; D.D. Sheka; L. Vergori.

**IL-2-AIII** - “Shape polarity, chirality and curvature as players in the behavior of nematics” D.R. Revignas; A.F. Ferrarini.

Lunch

14:00-15:30

**Chair: Kristiaan Neyts**

**ILK-3-AIII** - “New Liquid Crystal Network Functionalities Using Chiral Fingerprint Dynamics” D.J. Broer; D. Liu.

**FO-1** - “Liquid Crystal Metasurfaces for Versatile Electrically Tunable Diffraction” A.V. Mamonova; M.V. Gorkunov; I.V. Kasyanova; V.V. Artemov; I.V. Simdyankin; A.R. Geivandov; S.P. Palto; A.A. Ezhov.

**FO-2** - “Generation of Focused Optical Vortex with High Efficiency using Liquid Crystal Spiral Zone Plate” Y. T. Tsukamoto; H.Y. Yoshida; M.O. Ozaki.

**FO-3** - “Chiral liquid crystal based holographic reflective lens for spectral detection” M. Stebryte; J. Beeckman; K. Neyts.

**FO-4** - “Liquid crystal microcavities for topological photonics: control over the spin-orbit coupling of light” J. Szczytko; M. Król; M. Muszyński; K. Rechcińska; P. Oliwa; K. Łempicka-Mirek; R. Mazur; P. Morawiak; P. Kula; W. Piecek; M. Matuszewski; W. Bardyszewski; H. Sigurdsson; P. Lagoudakis; B. Piętko.

Coffee Break

16:00-17:30

**Chair: José Luis Serrano**

**DO-6** - “Nano-Micro Liquid Crystal Composites for Fast Modulation and Smart Window Applications” P. Madhuri; S. Barinova; M. Abu Aisheh; M.J. Abuleil; R.J. Martín-Palma; Z.M.A. Judeh; ; I. Abdulhalim.

**DO-7** - “Effects of rotating and oscillating fields on the isotropic and ferromagnetic nematic phases of BaHF nanoplatelets” H. Nádasi; M. Küster; F. Ludwig; N. Sebastián; P. Hribar Boštjančič; D. Lisjak; A. Mertelj; A. Eremin.

**DO-8** - “An unusual plank-shaped nematogen with a graphene nanoribbon core” G. Farias; E. Giroto; A.P. Monkman; J. Eccher; H. Bock; B. Souza; I.H. Bechtold.

**DO-9** - “Nanoparticle-Enabled Ionic Effects in Liquid Crystals” Y. Garbovskiy.

**IL-4-AIII** - “Marriage of bicontinuous and micellar cubic liquid crystals –Single network cubics and beyond” C. Tschierske; S. Poppe; M. Poppe; C. Chen; F. Liu; H. Lu; X. B. Zeng; G. Ungar.

17:30-19:30

Poster Session I - Onsite (Ágora Room) + Online (Padlet and Zoom)

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Room: **Building IV – Amphitheater IV**

10:15-12:00

**Chair: Peter Collings**

**ILK-1-AIV** - “Fertile metastability” P. Pieranski; M.H. Godinho.

**CO-1** - “Influence of quantum dots on the optical properties of a room temperature cholesteric liquid crystal” M.C. Chemingui; D.Y. Yang; Y.W. Wang; W.C. Cai; I. Drevensek-Olenik; X.Z. Zhang; J.X. Xu.

**CO-2** - “Flexible Normally Transparent Smart Window Modulating Penetrating Near-infrared Under Ambient Conditions” Y. Liu.

**CO-3** - “Magnetic tilting in ferronematic hybrid materials driven by self-assembly” A. Eremin; M. Hähsler; H. Nádasi; M. Feneberg; S. Marino; F. Giesselmann; S. Behrens.

**CO-4** - “Monitoring LC behavior of Colloidal Nanorods via Polarized Luminescence of Rare-Earth Dopants” J.K. Kim; T. Gacoin; J. Kim; K. Lahlil; J. Peretti.

**CO-5** - “Bright, Non-Iridescent Structural Coloration from Nematic Clay Nanosheet Suspensions” P.H. Michels-Brito; V. Dudko; D. Wagner; P. Markus; G. Papastavrou; L. Michels; J. Breu; J.O. Fossum.

Lunch

14:00-15:30

**Chair: Alexey Eremin**

**CO-6** - “Necklace Structure Made of Nematic Liquid-Crystal” Y. Takenaka; M. Škarabot; I. Mušević.

**CO-7** - “Ferroelectric nematics in microchannels: switching and propagation of order” G. Nava; F. Caimi; S. Fuschetto; L. Lucchetti; P. Paie; R. Osellame; X. Chen; N. Clark; M. Glaser; T. Bellini.

**CO-8** - “Colloidal Self-Assembly in Cholesteric Host Fluids” H.H. Wensink; M. Torres Lázoro; J.-S. Wu; H. Mundoor; I. Smalyukh.

**CO-9** - “Star-like structures with nematic organization from self-assembled colloidal rods in 2D confinement” A. Zavala-Martinez; A. Repula; E. Grelet.

**IL-2-AIV** - “Giant Director Fluctuations in Nematic Liquid Crystal Drops with a Radial Director Configuration” A. de la Cotte; O. Stenull; S. Ettinger; P.J. Collings; T.C. Lubensky; A.G. Yodh.

Coffee Break

16:00-17:30

**Chair: Patrick Davidson**

**CO-10** - “Self-assembly, phase behavior, and adhesive potential of cellulose nanocrystal – BSA amyloid composites” K.J. De France; N. Kummer; S. Campioni; G. Nystrom.

**CO-11** - “Coarsening dynamics of quasi 2D emulsions in free-standing smectic films” C. Klopp; T. Trittel; R. Stannarius.

**CO-12** - “Surface Tension and Viscoelastic Properties of Ultra-thin Liquid Crystal Films at the SmA-N Transition by Surface Light Scattering Spectroscopy” A.S. Visco; H.A. Alwusaydi; A.E. Smart; W.V. Meyer; A.I. Belgovskiy; J.A. Mann; E.K. Mann.

**CO-13** - “Gigantic anchoring-mediated topographical variations in thin nematic films” A. Ferris; C. Rosenblatt; T. J. Atherton.

**CO-14** - “Polymer Dispersed Liquid Crystal films doped with carbon nanotubes: electric, electro-optical properties and modeling” D. Manaila-Maximean; O. Danila; V.A. Loiko; A. Konkolovich; A. Miskevich; C.P. Ganea; L. Frunza; V. Cîrcu; A. Barar.

**CO-15** - “Directed Self-Assembly and Post-Assembly Modification of Functional Blue-Phase Liquid Crystals” T.E. Emeršič; K.B. Bagchi; J.A. Martínez-González; P.F. Nealey; J.J. de Pablo.

17:30-19:30

Poster Session I - Onsite (Ágora Room) + Online (Padlet and Zoom)