

# 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

Poster Sessions online (Padlet)

Liquid Crystal Art Exhibition (Library)

Registration (entrance Building IV)

Thursday, 28th July					
Grand Auditorium					
Chair: Claudio Zannoni					
08:45-09:35	PL-4 Robin Selinger				
09:35-10:00	Coffee Break				
	Grand Auditorium	Building IV Amph.I	Building IV Amph.II	Building IV Amph.III	Building IV Amph.IV
	Chair: Georg Mehl	Chair: John Ball	Chair: Hiroshi Yokoyama	Chair: Antal Jakli	Chair: Masanori Ozaki
10:00-10:15	IL-11-GA: José Luis Serrano	ILK-7-AI: Slobodan Zumer	ILK-8-AII: Emmanuelle Lacaze	ILK-10-AIII: Helen Gleeson	FO-20: C.-R. Lee (online)
10:15-10:30					FO-21: C. Dong (online)
10:30-10:45	DO-21: G. Ungar (online)	EO-21: G. Watanabe (online)	CO-25: Q.-H. Wei (online)	DO-32: J.A. Herman	FO-22: C. Mahyaoui
10:45-11:00	DO-22: P. Nacke	EO-22: Z. Ou-Yang (online)	CO-26: I. Nys (online)	DO-33: M. Vilfan	FO-23: O. Tsutsumi
11:00-11:15	DO-23: N. Scheuring	EO-23: V. Rudyak (online)	CO-27: P. Salamon	DO-34: K. Lewis	FO-24: D. Liu
11:15-11:30	DO-24: X. Zeng	EO-24: N. Vaupotic (online)	CO-28: G. Poy	DO-35: Y. Panarin	FO-25: A. Shah
11:30-11:45	IL-12-GA: Rudolf Zentel (online)	IL-8-AI: Ralph Stannarius	CO-29: J. Yoshioka	IL-11-AIII: Alexey Bobrovsky (online)	IL-5-AIV: Kristiaan Neyts
11:45-12:00			CO-30: J. Niyozima		
12:00-13:30	Lunch (General Meeting ILCS Building IV Amph.III)				
13:30-15:30	Poster Session III - Onsite (Ágora Room) + Online (Padlet and Zoom) and Break				
	Grand Auditorium	Building IV Amph.I	Building IV Amph.II	Building IV Amph.III	Building IV Amph.IV
	Chair: Alain Goriely	Chair: Giampaolo D'Alessandro	Chair: Paulo Ivo Teixeira	Chair: Mohan Srinivasarao	Chair: António Figueiredo Neto
15:30-15:45	ILK-13-GA: Peter Palffy-Muhoray	DO-25: B. Loska	FO-26: M. Ozaki	CO-31: S. Yadav (online)	ILK-6-AIV: Oleg Lavrentovich
15:45-16:00		DO-26: V. Punjani	FO-27: S.M. Muszyński	CO-32: L. Tran	
16:00-16:15	EO-25: T. Shendruk	DO-27: I. Sivakumar	FO-28: V.G. Chigrinov	CO-33: R. Sahoo	AO-14: A. Gradisek
16:15-16:30	EO-26: M. Wilson	DO-28: N. Sebastián	FO-29: F. Van Acker	CO-34: C. Tone (online)	AO-15: C. Dore (online)
16:30-16:45	IL-14-GA: Epifanio Virga	DO-29: A. Roy (online)	FO-30: S. Ghosh (online)	CO-35: M. Sadati (online)	ILK-7-AIV: Linda Hirst
16:45-17:00		DO-30: S. Eichhorn	FO-31: L. Lu (online)	CO-36: X. Wang (online)	
17:00-17:20	Coffee Break				
	Grand Auditorium	Building IV Amph.I	Building IV Amph.II	Building IV Amph.III	Building IV Amph.IV
	Chair: Irena Drevnšek-Olenik	Chair: Ivan Bechtold	Chair: Jun Yamamoto	Chair: Goran Ungar	Chair: Epifanio Virga
17:20-17:35	DO-31: E. Westphal	BO-23: F. Vita	EO-27: R. Coelho	DO-37: G. Chu	AO-16: T. Fraccia (online)
17:35-17:50	IL-15-GA: Georg Mehl (online)	IL-9-AI: Janusz Parka	EO-28: J. Renner	IL-12-AIII: Patrick Davidson	AO-17: M. De Oliveira Silva
17:50-18:05			DO-36: X. Chen (online)		AO-18: L. Carenza
20:00-23:00	Gala Dinner and Fado (Restaurant Quinta dos Pézinhos no Tejo)				

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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**Thursday, 28<sup>th</sup> July**

Room: **Grand Auditorium**

08:45-09:35

**Chair: Claudio Zannoni**

**PL-4** - “*Morphing Liquid Crystal Elastomer Coatings: A Machine Learning Approach to Inverse Design*” R.L.B. Selinger; Y.M. Golestani; M.J. Deutsch; M. Varga; B.L. Mbanda.

Coffee Break

10:00-12:00

**Chair: Georg Mehl**

**IL-11-GA** - “*Ionic Conductivity in Pillarene-Based Liquid Crystals*” I. Marín; S. del Moral; P. Romero; J. Barberá; R.I. Merino; J.L. Serrano.

**DO-21** - “*Why is there a Cp maximum in the isotropic liquid above LC phases?*” Y-n Xue; Y. Wang; S-g Yang; G. Ungar; Y-x Li; L. Cseh; X-b Zeng; F. Liu.

**DO-22** - “*New Examples of Ferronematic Materials Showing Evidence for the Antiferroelectric Smectic-Z Phase*” P. Nacker; A. Manabe; M. Klasen-Memmer; X. Chen; V. Martinez; E. Korblova; G. Freychet; M. Zhernenkov; M. Glaser; J.E. Maclennan; D.M. Walba; M. Bremer; F. Giesselmann.

**DO-23** - “*Does the Real Biaxial Nematic Phase Exist in the Family of Roof-Shaped Nematogens?*” N. Scheuring; M. Lehmann.

**DO-24** - “*A Columnar Liquid Quasicrystal – Honeycomb with Triangular, Square and Trapezoidal Cells*” X.B. Zeng; B. Glettner; U. Baumeirer; B. Chen; G. Ungar; F. Liu; C. Tschierske.

**IL-12-GA** - “*LC-Elastomers: Structure -Property Relations and Concepts to Improve Applicability*” R. Zentel.

Lunch

13:30-15:30

Poster Session III – Onsite (Ágora Room) + Online (Padlet and Zoom)

15:30-17:00

**Chair: Alain Goriely**

**ILK-13-GA** - “*Symmetry arguments and the totalitarian principle in the physics and metaphysics of liquid crystals*” T. Guo; X. Zheng; P. Palfy-Muhoray.

**EO-25** - “*Complex-tensor Theory of Simple Smectics*” J. Paget; U. Alberti; A. Balach-Conte; M.G. Mazza; A.J. Archer; T.N. Shendruk.

**EO-26** - “*Formation of stacks, shift-defects, Y-defects and novel layer structures in chromonic liquid crystals*” G. Yu; M.R. Wilson.

**IL-14-GA** - “*Mathematical Models for Chromonics*” E.G. Virga.

Coffee Break

17:20-18:05

**Chair: Irena Drevenšek-Olenik**

**DO-31** - “*Tris(N-phenyltriazole) as a new template for star-shaped luminescent Discotic Liquid Crystals*” C. Ratto; W.A. Oliveira; H. Gallardo; E. Westphal.

**IL-15-GA** - “*Exploration of the twist bend nematic (Ntb) and ferroelectric (Nf) nematic phase in mixtures with LC-QDs and LC-gold nanoparticles*” G.H. Mehl; W. Jiang; H. Ojajm; H. Yu; S. Conopo-Holyoake; F. Liu; Y. Zhao; X.B. Zeng; G. Siligardi.

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Room: **Building IV – Amphitheater I**

10:00-12:00

**Chair: John Ball**

**ILK-7-AI** - “*Light Control by Topological Solitons in Frustrated Chiral Nematics*” A.J. Hess; G. Poy; J.B. Tai; I.I. Smalyukh; S. Žumer.

**EO-21** - “*A Molecular Dynamics Study of Novel Columnar Metallomesogens Forming Helical Structure*” G. Watanabe; M. Hara; J. Yoshida.

**EO-22** - “*Electromagnetic deformation theory of a liquid bilayer vesicle*” Z.C. Ou-Yang; Y.G. Shu.

**EO-23** - “*Gathering Metastable States in Confined Systems by Stochastic Approximation Monte Carlo Simulations*” V.Y. Rudyak; I.V. Afanasyev; D.I. Lichmanov; V.V. Voevodin.

**EO-24** - “*Resonant X-ray Response of a Chiral Cubic Phase*” N. Vaupotic; T. Grabovac; E. Gorecka; D. Pocięcha; C. Zhu.

**IL-8-AI** - “*Freely floating smectic films*” R. Stannarius.

Lunch

13:30-15:30

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

15:30-17:00

**Chair: Giampaolo D'Alessandro**

**DO-25** - “*Structure of the twist-bend nematic phase with respect to the orientational molecular order*” B. Loska; A. Kocot; Y. Arakawa; K. Merkel.

**DO-26** - “*Chiral bent-shaped liquid crystals exhibiting a wide range of blue liquid crystalline phase and mechanochromic behaviour*” V. Punjani; N. Joshi; G. Mohiuddin; S.K. Pal.

**DO-27** - “*Flow-induced transient chirality in a columnar liquid crystal*” I. Sivakumar; K. Swamynathan; D. Ram; V.A. Raghunathan; S. Kumar.

**DO-28** - “*Similarities and differences between two ferroelectric nematic materials*” N. Sebastián; R.J. Mandle; S. Aya; M. Huang; N. Osterman; M. Lovšin; L. Cmok; A. Petelin; A. Eremin; J. Martinez-Perdiguero; I. Drevenšek-Olenik; M. Čopič; A. Mertelj.

**DO-29** - “*The evidence of SmA to deVries SmA transition exhibited by bent-core hockey-stick shaped molecules*” A. Roy; D. Malkar; D. Patra.

**DO-30** - “*Columnar Mesomorphism of Board-Shaped Diketopyrrolopyrrole, Isoindigo, and Quinoxalino-Phenanthrophenazine Dyes*” S.H. Eichhorn; H. Taing; A.M. Cassar; B.R. Kaafarani.

Coffee Break

17:20-18:05

**Chair: Ivan Bechtold**

**BO-23** - “*Nematic Order in Graphene Oxide Nanocomposites: from Colloidal Solutions to Polymeric Films*” E. Vita; M. Hegde; L. Marchio; S.J. Picken; E.T. Samulski; T.J. Dingemans; O. Francescangeli.

**IL-9-AI** - “*Hyperbolic metamaterials with dye doped nematic liquid crystals for spontaneous emission engineering*” K. Sielezin; A. Pianelli; R. Kowerdziej; U. Chodorow; R. Mazur; B. Jankiewicz; J. Parka.

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10:00-12:00

**Chair: Hiroshi Yokoyama**

**ILK-8-AII** - “Liquid Crystal topological defects and nanoparticles” E. Lacaze.

**CO-25** - “Photopatterning Designer Disclinations and Templated Colloidal Assembly in Nematic Liquid Crystals” Y. Guo; M. Jiang; S. Afghah; C. Peng; R. Selinger; O. Lavrentovich; Q.-H. Wei.

**CO-26** - “Photo-patterned defect grids for the creation of disclination lines in nematic liquid crystal cells” I. Nys; B. Berteloot; J. Beekman; K. Neyts.

**CO-27** - “Ferroelectric nematic liquid crystal thermo-motor” M.T. Máthé; A. Buka; A. Jákli; P. Salamon.

**CO-28** - “Hidden traces of chirality in the fluctuation modes of fully unwound frustrated cholesterics” G. Poy.

**CO-29** - “Rotational Phenomenon Driven by Temperature Gradient in a Cholesteric Droplet with Air Interface” J. Yoshioka; K. Fukao.

**CO-30** - “Topological defects in Liquid crystal thin films” J.D. Niyozima; H. Jeridi; C. Sakr; A. Vlad; A. Coati; M. Goldmann; D. Constantin; B. Gallas; Y. Garreau; B. Croset; E. Lacaze.

Lunch

13:30-15:30

Poster Session III – Onsite (Ágora Room) + Online (Padlet and Zoom)

15:30-17:00

**Chair: Paulo Ivo Teixeira**

**FO-26** - “Molecularly Oriented Organic-Semiconductor Thin Film based on its Mesogenic Potential” M. Osaki; E. Nishimoto; G. Uzurano; A. Fujii.

**FO-27** - “Realizing Rashba-Dresselhaus lasing in tunable liquid crystal birefringent optical microcavity” M. Muszyński; M. Król; R. Rechcińska; P. Oliwa; M. Kędziora; K. Łempicka-Mirek; R. Mazur; P. Morawiak; W. Piecek; P. Kula; P.G. Lagoudakis; B. Piętko; J. Szczytko.

**FO-28** - “Photoaligning and photopatterning of liquid crystals: physics and applications” Chigrinov, V.G.

**FO-29** - “Chiral Liquid Crystal laser with metallic end-mirror” F. Van Acker; J. Beeckman; K. Neyts.

**FO-30** - “Electrical Switching of Nematic Plasmonic Nanocolloids for Infrared Solar Gain Control” S. Ghosh; I. Smalyukh.

**FO-31** - “Liquid Crystal Polarization Holograms for Thinner and Lighter AR/VR Display Systems” L. Lu; X. Feng; H. Cheng; E. Huang; F. Peng; Y.-H. Lee; M. Wang; J. Wang; B. Silverstein.

Coffee Break

17:20-18:05

**Chair: Jun Yamamoto**

**EO-27** - “Dynamics of flowing skyrmions” R.C.V. Coelho; M. Tasinkevych; M.M. Telo da Gama.

**EO-28** - “Better than counting: Orientational distribution functions from torque sampling” J. Renner; M. Schmidt; D. de las Heras.

**DO-36** - “Zig-Zag Morphology of  $2\pi$  Disclination Lines in the Ferroelectric Nematic Phase” X. Chen; E. Korblova; M. Glaser; J. Maclennan; D. Walba; N. Clark.

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10.00-12.00

**Chair: Antal Jakli**

**ILK-10-AIII** - “*Stretching the imagination; new applications for liquid crystal elastomers*” H.F. Gleeson; T. Raistrick; R. Mandle; D. Mistry.

**DO-32** - “*Fundamental Studies and Functional Applications of Mechanotropic Phase Transitions in Polymer Networks Containing Appreciable Liquid Crystalline Content*” J.A. Herman; J.A. Koch; T.J. White.

**DO-33** - “*Bidirectional flow in ferromagnetic ferrofluids generated by a uniaxial magnetic field*” M. Vilfan; B. Lampret; Ž. Gregorin; N. Sebastián; J. Klepp; J. Kohlbrecher; P. Hribar Boštjančič; D. Lisjak; A. Mertelj.

**DO-34** - “*Liquid Crystalline Elastomers Containing Supramolecular Bonds*” K. Lewis; K. Herbert; T. White.

**DO-35** - “*Polar nature of the ferroelectric nematic studied by dielectric and electrooptic spectroscopy.*” Y.P. Panarin; N. Yadav; J.K. Vij; W. Jiang; G.H. Mehl.

**IL-11-AIII** - “*Photocontrollable LC hybrid composites based on organic and inorganic porous matrices*” A. Bobrovsky; V. Shibaev.

Lunch

13:30-15:30

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

15.30-17.00

**Chair: Mohan Srinivasarao**

**CO-31** - “*Quantum dot-polymer stabilized blue phase liquid crystals for next generation displays*” S. Yadav; P. Malik.

**CO-32** - “*Helfrich-Hurault-like undulations in cholesteric liquid crystals induced by anchoring transitions*” M.O. Lavrentovich; L. Tran.

**CO-33** - “*Tuning the photonic bandgap by actinic light in one and three-dimensional photonic structures of liquid crystals*” R. Sahoo; D.S. Rao; U.S. Hiremath; C.V. Yelamaggad; S. Prasad.

**CO-34** - “*Microfluidic production of chromonic microdroplets with precise topology control*” C.M. Tone; A. Zizzari; L. Spina; M. Bianco; M.P. De Santo; R. Barberi; V. Arima; F. Ciuchi.

**CO-35** - “*Blue Phase Liquid Crystal Core-Shells*” S. Norouzi; A. Tavera-Vazquez; T. Lopez Leon; J.J. de Pablo; J.A. Martinez-Gonzalez; M. Sadati.

**CO-36** - “*Liquid Crystal-Infused Porous Surfaces with Molecular Order-Dependent Slipperiness and Cargo Release*” X. Wang; Y. Xu; A. Rather; R. Dupont; U. Kara; R. Mamtani; U. Tkalec.

Coffee Break

17:20-18:05

**Chair: Goran Ungar**

**DO-37** “*Liquid-Liquid Phase Separation in All-Aqueous Liquid Crystal Colloids: Binary Polymers meets Self-assembled Nanocellulose*” G. Chu; O.J. Rojas.

**IL-12-AIII** - “*Do aqueous suspensions of smectite clays form a smectic liquid-crystalline phase?*” K. El Rifaii; H.H. Wensink; F. Puchler; I. Dozov; T. Bizien; L.J. Michot; J.C.P. Gabriel; J. Breu; P. Davidson.

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Room: **Building IV – Amphitheater IV**

10:00-12:00

**Chair: Masanori Ozaki**

**FO-20** - “Self-Steering Lasing System Enabled by Soft Photo-Actuators with Sandwich-Like Structure” Y.-S. Zhang; Z.-W. Lin; C.-R. Lee.

**FO-21** - “3D-Printed Biomimetic Systems with Synergetic Color and Shape Responses Based on Oblate Cholesteric Liquid Crystal Droplets” C. Yang; C. Dong.

**FO-22** - “Interaction of Smectic A Defects with Light, and Application to Active Glazing” C. Mahyaoui; G. Boniello; P. Davidson; C. Meyer; I. Dozov; F. Mondiot.

**FO-23** - “Controlled Photoluminescence from Liquid-Crystalline Gold(I) Complexes with High Aggregation-Induced Emission Character” O. Tsutsumi; Y. Kuroda; A. Ando; K. Yamaguchi; K. Hisano.

**FO-24** - “On-demand secreting functional liquid from liquid crystal polymer network” Y. Zhan; D.J. Broer; D. Liu.

**FO-25** - “Mechanically stabilized discotic liquid crystals via UV-crosslinked reactive nematogen manifest effective drift mobility of charge carriers accompanied by enhanced dielectric properties” A. Shah; D. Singh; A. Ellass; B. Duponchel; S. Kumar; R. Douali; A. Daoudi.

**IL-5-AIV** - “Properties of chiral liquid crystal gratings and their use in optical components” K. Neyts; I. Nys; M. Stebryte; B. Berteloot; Ye. Ussembayev; X. Xue; J. Beeckman.

Lunch

13:30-15:30

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

15:30-17:00

**Chair: António Figueiredo Neto**

**ILK-6-AIV** - “Liquid crystals to control active matter” O.D. Lavrentovich.

**AO-14** - “Local ordering in the isotropic phase of a liquid crystal investigated by NMR relaxometry” A. Gradisek; T. Apih; M.J. Beira; C. Cruz; S.N. Fernandes; M.H. Godinho; P.J. Sebastiao.

**AO-15** - “Active nematics microfluidics : from channels to autonomous flow networks” C. Dore; J. Laurent; J. Hardouin; J. Ignés-Mullol; F. Sagués; T. Lopez-Leon.

**ILK-7-AIV** - “Controlling chaos in active nematics” L.S. Hirst.

Coffee Break

17:20-18:05

**Chair: Epifanio Virga**

**AO-16** - “Liquid-liquid crystalline phase separations in DNA based coacervates” T.P. Fraccia; T.Z. Jia; N. Martin.

**AO-17** - “Pf4 tactoids interaction with synthetic rods” M. De Oliveira Silva; I. Grobas; Y. Han; L. Zhang; A. Majumdar; A. Tarafder; T. Bharat; D. Aarts.

**AO-18** - “Epithelia are multiscale active liquid crystals” J.-M. Armengol-Collado; L.N. Carenza; J. Eckert; D. Krommydas; L. Giomi.