



49th German Liquid Crystal Conference | 49. Arbeitstagung Flüssigkristalle
22 – 24 March 2023, Stuttgart, Germany

Tiefenhörsaal (M17.01)

Universitätscampus Stadtmitte
Kollegiengebäude II
Keplerstraße 17
70174 Stuttgart

Programme

Wednesday, 22 March 2023

14:00 **Opening** (Frank Giesselmann, Stuttgart)

Chair: Matthias Lehmann, Würzburg

14:10 I1 (Invited Lecture)

Phase, Morphology, and Chirality Control in B4-Phase Nanofilaments

Torsten Hegmann¹⁻⁴

¹*Advanced Materials and Liquid Crystal Institute*

²*Department of Chemistry and Biochemistry*

³*Materials Science Graduate Program*

⁴*Brain Health Research Institute, Kent State University, Kent (OH)*

14:50 O1

Phase Composition of Perylene-3,4,9,10-tetracarboxyl-tetraethyl ester and its Influence on the Optoelectronic Properties

D. Becker^{1,*}, P. Meier¹, A. Kuhlmann¹, H.-G. Steinrück¹, C. Sternemann², H. Kitzerow¹

¹*Department of Chemistry, Paderborn University, Paderborn, Germany*

²*Fakultät Physik / DELTA, Technische Universität Dortmund, Germany*

15:10 O2

Photovoltaic Effect in Self-Assembled Columnar and Cubic Bicontinuous-Network LC Morphologies

Alexey Eremin^{1,*}, Ahmad Murad¹, Mohamed Alaasar², Maximilian Baumann³, Matthias Lehmann³

¹*Institute of Physics, Dept. nonlinear Phenomena, Otto von Guericke University, Magdeburg, Germany*

²*Institute of Chemistry, Martin Luther University Halle-Wittenberg, Halle(Saale), Germany*

³*Institute of Organic Chemistry, University of Würzburg, Würzburg, Germany*

15:30 **Coffee Break** (Foyer)

Chair: Sabine Laschat, Stuttgart

16:00 O3

Direct Digital Photonic Patterning of Hydrogen-bonded CLC Films via SLA 3D-Printers

Florian Malotke¹, Tobias Thiele¹, Michael Giese^{1,*}

¹*Organic Chemistry, University of Duisburg-Essen, Universitätsstraße 7, 45141 Essen, Germany*

16:20 O4

Space-Filling in Polar Phases of Star-Shaped Molecules with C60 Fullerenes by Covalent Attachment

Maximilian Baumann¹, Ahmad Murad², Alexey Eremin², Dharmendra Pratap Singh³ and Matthias Lehmann^{1,*}

¹*Institute of Organic Chemistry, University of Würzburg, Germany*

²*Institute of Physics, University of Magdeburg, Germany*

³*Unité de Dynamique et Structure des Matériaux Moléculaires, ULCO, Calais, France*

16:40 O5

Exploration of New Tools for Dynamic Covalent Chemistry in Adaptive and Reusable Materials

Thorben Neumann¹ and Michael Giese^{1,*}

¹*Faculty of Chemistry (Organic Chemistry) and CENIDE, University of Duisburg-Essen, Universitätsstraße 7, 45141, Essen, Germany*

17:00 O6

Supramolecular Click Mechanism and Fullerene-Substituted Porphyrin Star Mesogens – a Success Story?

Lisa Reber¹, Matthias Lehmann¹

¹*University of Würzburg, Institute of Organic Chemistry, 97074 Würzburg, Germany*

17:20 O7

First Azulene Liquid Crystal with De Vries Behavior and a Sma Reentrant Phase

A. R. Raab^{1,*}, F. Schulz¹, B. Wank¹, P. Nacke², W. Frey¹ and S. Laschat¹

¹*Institute of Organic Chemistry, University of Stuttgart, Germany*

²*Institute of Physical Chemistry, University of Stuttgart, Germany*

18:00 Lecture Hall M17.01

**Deutsche Flüssigkristallgesellschaft
General Assembly (members only)**

Thursday, 23 March 2023

Chair: Heinz Kitzerow, Paderborn

9:00 I2 (Invited Lecture)

Emulating Native Tissue Using 3D Porous Biodegradable Liquid Crystal Elastomers

Prévôt, Marianne Estelle¹, Ustunel, Senay^{1,2}, Sternbach, Sarah³, Chenhui, Zhu⁶; Pindak, Ron⁷; McDonough, Jennifer; 3-5 Clements, Robert¹⁻⁵ and Hegmann, Elda^{1-5,*}

¹*Advanced Materials and Liquid Crystal Institute, Kent State University, Kent, USA*

²*Materials Science Graduate Program, Kent State University, Kent, USA*

³*Department of Biological Sciences, Kent State University, Kent, USA*

⁴*Brain Health Research Institute, Kent State University, Kent, USA*

⁵*Biomedical Sciences Program, Kent State University, Kent, USA*

⁶*Advanced Light Source, Lawrence Berkeley National Laboratory, USA*

⁷*National Synchrotron Light Source-II, Brookhaven National Laboratory, USA*

9:40 O8

Arbitrarily Long Tube-Shaped Liquid Crystal Elastomer Actuators

Nikolay Popov^{1,a}, Najiya Najiya^{1,a}, Venkata Subba Rao Jampani^{1,2}, Jan Lagerwall^{1,*}

¹*University of Luxembourg, Department of Physics and Materials Science, Luxembourg, Luxembourg*

²*Jozef Stefan Institute, Department of Condensed Matter Physics, Ljubljana, Slovenia*

10:00 O9

Utilization of Shape-Memory in Polymer Dispersed Liquid Crystal Elastomers

Andraž Rešetič^{1,*}, Saide Umerova¹, Danjela Kuščer², Matej Bobnar¹, Nikita Derets¹ and Boštjan Zalar^{1,3}

¹*Jožef Stefan Institute, Solid State Physics Department, Jamova cesta 39, 1000 Ljubljana, Slovenia*

²*Jožef Stefan Institute, Electronic Ceramics Department, Jamova cesta 39, 1000 Ljubljana, Slovenia*

³*Jožef Stefan International Postgraduate School, Jamova cesta 39, 1000 Ljubljana, Slovenia*

10:20 O10

Coalescence of Nematic Droplets in Quasi 2D Liquid Crystal Films

Christoph Klopp¹ and Ralf Stannarius¹

¹*Otto von Guericke University, Institute of Physics, 39106 Magdeburg, Germany*

10:40 **Coffee Break** (Foyer)

Chair: Johanna Bruckner, Stuttgart

11:00 I3 (Invited Lecture)

From Ferroelectric Nematics to Smectics

Joseph E. Maclennan

Department of Physics and Soft Materials Research Center, University of Colorado, Boulder, CO 80309-0390, USA

11:40 O11

Identification Method for Ferro- and Antiferroelectric Nematic Phases

Pierre Nacke¹, Per Rudquist², Sonja Dieterich¹, Melanie Klasen-Memmer³, Carsten Fritzsche³, Rachel Tuffin³ and Frank Giesselmann^{1,*}

¹ *Institute of Physical Chemistry, University of Stuttgart, 70569 Stuttgart, Germany*

² *Department of Microtechnology and Nanoscience, Chalmers University of Technology, 41296 Gothenburg, Sweden*

³ *Electronics Division, Merck KGaA, 64293 Darmstadt, Germany*

12:00 O12

Liquid Bridges in a Ferroelectric Nematic: Structure and Electric-Field Instabilities

Alexander Jarosik¹, Evangelia Zavvou^{1,2} and Alexey Eremin^{1,*}

¹ *Institute of Physics, Dept. nonlinear Phenomena, Otto von Guericke University, Magdeburg, Germany*

² *Department of Physics, University of Patras, 26504, Patras, Greece*

12:20 **Lunch Break**

Awards Session

14:00 **Alfred-Saupe-Award** (Laudatio: Ralf Stannarius)

Regular Patterns Induced by Electric Field in Nematics (from Calamitic, through Bent-Core to Ferroelectric Structures)

Agnes Buka^{1,*}

¹Institute for Solid State Physics and Optics, Wigner Research Centre for Physics, Budapest, Hungary

14:45 **Vorländer-Lecture** (Laudatio: Alexej Eremin)

Polarization Patterning in Ferroelectric Nematic Liquids

N. Sebastián^{1,*}, M. Lovšin^{1,2}, B. Berteloot³, N. Osterman^{1,2}, A. Petelin^{1,2}, R. J. Mandle^{4,5}, S. Aya^{6,7}, M. Huang^{6,7}, I. Drevenšek-Olenik^{1,2}, K. Neyts³, A. Mertelj¹

¹Jožef Stefan Institute, Ljubljana, Slovenia; ²University of Ljubljana, Faculty of Mathematics and Physics, Slovenia; ³Liquid Crystals and Photonics Group, ELIS Department, Ghent University, Belgium; ⁴School of Physics and Astronomy, University of Leeds, UK; ⁵School of Chemistry, University of Leeds, UK; ⁶School of Emergent Soft Matter, South China University of Technology, China; ⁷Guangdong Provincial Key Laboratory of Functional and Intelligent Hybrid Materials and Devices, South China University of Technology, China

15:30 **Luckhurst-Samulski Prize** (Laudatio: Corrie Imrie)

Ferroelectric Nematic Phase at and Below Room Temperature

Atsuka Manabe^{1,*}, Matthias Bremer^{1,*}, Martin Kraska¹

¹Electronics Division, Merck KGaA, Darmstadt, Germany

16:00 **Poster Session** (Foyer)

Coffee and tea is served during the poster session

18:15 **Departure to Conference Dinner**

19:00 **Conference Dinner**

The Conference Dinner will be served in the “*Leonhardts*” located at the Stuttgart TV tower

For admittance: please wear your badges!

22:30 **End** of the Conference Dinner

Friday, 24 March 2023

Chair: Michael Giese, Essen

- 9:00 O13
Effect of Lateral Substitution on Mesomorphic and Photosensitive Behaviour for Chiral Lactic Acid Derivatives
Sergei Mironov^{1,*}, Martin Cigl¹, Anna Radochová², Hana Marková³, Damian Pociecha⁴, Věra Hamplová¹ and Alexej Bubnov¹
¹*Institute of Physics, Czech Academy of Sciences, 182 00 Prague, Czech Republic*
²*Gymnázium Bohumila Hrabala, 288 02 Nymburk, Czech Republic*
³*Gymnázium Jírovcova, 370 01 České Budějovice, Czech Republic*
⁴*Department of Chemistry, University of Warsaw, 02-089 Warsaw, Poland*
- 9:20 O14
Observation of Helical Self-Assembly in Cyclic Triphosphazene-Based Columnar Liquid Crystals Bearing Chiral Mesogenic Units
Shruti Rani^a, Vidhika Punjani^a, Santosh Prasad Gupta^b, Madhu Babu Kanakala^c, C. V. Yelamagad^{*c} and Santanu Kumar Pal^{a,*}
^a*Department of Chemical Sciences, Indian Institute of Science Education and Research (IISER) Mohali, Punjab, 140306, India*
^b*Department of Physics, Patna University, Patna, 800005, India*
^c*Centre for Nano and Soft Matter Sciences, Bengaluru, 560013, India*
- 9:40 O15
Ionic Liquids – the path from lab curiosities to industrial applications
Boyan Iliev¹, Thomas J.S. Schubert^{1*}
¹*Iolitec Ionic Liquids Technologies GmbH, Im Zukunftspark 9, 74076 Heilbronn, Germany.*
- 10:00 O16
Saddle-Splay Elasticity and Chiral Structures in Confined Nematics
Davide Revignas¹ and Alberta Ferrarini¹
¹*Department of Chemical Sciences, University of Padova, Padova, Italy*
- 10:20 O17
First Measurements on the Elastic Constants of a Lyotropic Nematic Liquid Crystal of Rod-Like Micelles
Stella Varytimiadou¹, Per Rudquist² and Frank Giesselmann^{1,*}
¹*Institute of Physical Chemistry, University of Stuttgart, Germany*
²*Microtechnology and Nanoscience, Chalmers University of Technology, Gothenburg, Sweden*

10:40 **Coffee Break**

Chair: Frank Giesselmann, Stuttgart

11:00 I4 (Invited Lecture)

Luminescent Ionic Materials for Use as Tools in Biology and for Physics to Detect Neutron Radiation.

Laurent Douce^{1,*}, Nicolas del Giudice¹, Romain Berthiot¹ and Louise Stuttgé²

¹*Institut de Physique et de Chimie des Matériaux de Strasbourg, Université de Strasbourg/CNRS, France.*

²*Institut Pluridisciplinaire Hubert Curien, CNRS, Strasbourg, France.*

11:40 O17

Dynamic Polar Orientational Ordering in Groups of Self-Propelled Objects that Move in Discrete Steps Towards a Remote Target

Andreas M. Menzel^{1,*}

¹*Theory of Soft Matter / Biophysics, Institute of Physics, Otto von Guericke University Magdeburg, Universitätsplatz 2, 39114 Magdeburg, Germany*

12:00 O18

Making Heads and Tails of Amphiphile-Induced Distortions in Chiral Nematic Liquid Crystal Fingerprints

Lawrence W. Honaker^{1,*}, Jorik Schaap¹, and Siddharth Deshpande^{1,*}

¹*Laboratory of Physical Chemistry and Soft Matter, Wageningen University & Research, Stippeneng 4, 6708 WE Wageningen, Kingdom of the Netherlands*

12:20 **Young Scientists Awards** (Heinz-Siegfried Kitzerow, Paderborn)
Closing (Sabine Laschat, Stuttgart)

12:40 **End of the Scientific Programme**
