

Plenary Lectures

Sunday, July 2

PLEN1 Plenary 1

Room: *Longs/Grays*

Chair: **J. Naciri**

7:30 PM PLEN1-1 Photoresponsive behavior of photochromic liquid-crystalline polymers

T. Ikeda

Tokyo Institute of Technology, Japan

8:10 PM PLEN1-2 Nematic elastomers by self-assembly of block copolymers

J. A. Kornfield

California Institute of Technology, USA

Monday, July 3

PLEN2 Plenary 2

Room: *Longs/Grays*

Chair: **S. Kumar**

7:00 PM PLEN2-1 The geometry and topology of smectics

R. Kamien

University of Pennsylvania, USA

7:40 PM PLEN2-2 Many faces of order from tapered mesogens

G. Ungar

University of Sheffield, United Kingdom

Tuesday, July 4

PLEN3 Plenary 3

Room: *Longs/Grays*

Chair: **S. Sprunt**

4:30 PM PLEN3-1 Laser tweezing of colloidal particles, defects, and director structures in liquid crystals

I. I. Smalyukh

Kent State University, USA

5:10 PM PLEN3-2 Optic and electric field manipulation of nematic colloids

I. Musevic

Jozef Stefan Institute, Slovenia



Thursday, July 6

PLEN4 Plenary 4

Room: *Longs/Grays*

Chair: **D. Schwartz**

- 7:00 PM PLEN4-1 Amplification of biological interactions using liquid crystals
N. L. Abbott
University of Wisconsin, USA
- 7:40 PM PLEN4-2 Modelling of constrained nematic order: From defects to colloidal structures
S. Zumer
University of Ljubljana & Jozef Stefan Institute, Slovenia

Friday, July 7

PLEN5 Plenary 5

Room: *Longs/Grays*

Chair: **P. Keller**

- 9:00 AM PLEN5-1 Transmission and amplification of information and properties
J. W. Goodby, I. M. Saez, S. J. Cowling, V. Gortz, S. Sia, P. Raynes
The University of York, United Kingdom
- 9:40 AM PLEN5-2 Ordering kinetics of anisotropic soft matter: Novel mechanisms of pattern selection
H. Tanaka
University of Tokyo, Japan

Glenn H. Brown Prizewinners' Lectures

Wednesday, July 5

GHBP Glenn H. Brown prizewinners' lectures

Room: *Longs/Grays*

Chair: **R. Pindak**

- 11:00 AM GHBP-1 Chirality and polarity in bent-core liquid crystals
M. Nakata, N. A. Clark, H. Takezoe
University of Colorado, USA
- 11:20 AM GHBP-2 Curvature and topology in smectic liquid crystals
C. Santangelo
University of Pennsylvania, USA
- 11:40 AM GHBP-3 Three-dimensional imaging of director structures in liquid crystals
I. Smalyukh, O. D. Lavrentovich
Kent State University, USA
- 12:00 PM GHBP-4 Swelling dynamics and electromechanical effects of liquid crystal elastomers as artificial muscles
Y. Yusuf
Kyushu University, Japan



Applications Plenary Lectures

Monday, July 3

APLE1 Applications plenary 1

Room: *Longs/Grays*

Chair: **D. Krüerke**

8:00 AM APLE1-1 Liquid crystal on silicon devices: Then 'til now
M. A. Handschy
Displaytech, Inc., USA

Thursday, July 6

APLE2 Applications plenary 2

Room: *Longs/Grays*

Chair: **G. Crawford**

8:00 AM APLE2-1 Nanostructured alignment layers and their applications
H. S. Kwok, P. Sheng, O. Tsui, V. G. Chigrinov, A. Muravski
Hong Kong University of Science and Technology, Hong Kong

Friday, July 7

APLE3 Applications plenary 3

Room: *Longs/Grays*

Chair: **T. Baur**

8:00 AM APLE3-1 Emerging technologies of liquid crystal displays for digital convergence
S. D. Lee
Seoul National University, South Korea

Invited and Oral Contributions

Monday, July 3

FERR1 Ferroelectric and antiferroelectric LCs 1

Room: *Longs/Grays*

Chair: **S. Lagerwall**

9:00 AM FERR1-I1 Optical and resonant X-ray diffraction studies of two liquid crystal mixtures: A critical test of theoretical phase diagrams
C. C. Huang
University of Minnesota, USA



- 9:30 AM FERR1-O1 Resonant X-ray scattering studies of 3- and 4-layer intermediate phases in antiferroelectric liquid crystals
S. Jaradat, N. W. Roberts, S. Wang, C. Southern, C. C. Huang, R. Pindak, H. F. Gleeson
University of Manchester, United Kingdom
- 9:50 AM FERR1-O2 Dynamics of the collective modes in an antiferroelectric liquid crystal with very large tilt angle
S. A. Rozanski, J. Thoen
Higher Vocational State School in Pila, Poland
- 10:10 AM FERR1-O3 Frontiers of switching between various chiral smectic subphases by the electric field
A. Emelyanenko, A. Fukuda, J. K. Vij
Moscow State University, Russia

SYNT1 Design and synthesis 1

Room: *Torreys*

Chair: **D. Dyer**

- 9:00 AM SYNT1-I1 New challenges in liquid crystal dendrimers: Synthesis, properties and applications
J. L. Serrano, J. Barberá, S. M. Hernandez, M. Marcos, A. Omenat, R. Martin-Rapun
Instituto de Ciencia de Materiales de Aragon, UZ-CSIC, Spain
- 9:30 AM SYNT1-O1 Synthesis and properties of the novel liquid crystalline compounds having fluorinated fused ring systems
K. Sago, A. Fujita
Chisso Petrochemical Corporation, Japan
- 9:50 AM SYNT1-O2 Molecular free volume in the creation of ordered nematic solutions of electronic polymers
T. M. Swager
Massachusetts Institute of Technology, USA
- 10:10 AM SYNT1-O3 Mixed tail triphenylene discogens with ester or amide groups: The effect of hydrogen bonding on mesomorphism
K. Q. Zhao, P. Hu, B. Q. Wang, C. Y. Gao, W. H. Yu, Y. Shimizu
Sichuan Normal University, China

LYOT Lyotropics

Room: *Shavano*

Chair: **G. Nounesis**

- 9:00 AM LYOT-I1 Dislocation loop mediated smectic melting
L. Navailles, P. Moreau, J. Giermanska-Kahn, O. Mondain Monval, D. Roux
CNRS, France
- 9:30 AM LYOT-O1 Polymer nanostructures through photopolymerization in lyotropic liquid crystals
C. A. Guymon, M. A. DePierro, J. D. Clapper
University of Iowa, USA
- 9:50 AM LYOT-O2 Lateral separation within surfactant layers gives multiple lamellar phases in a "binary" surfactant/solvent system – the phase behaviour of sodium alkyl-benzene sulphonate/water mixtures and sodium alkyl-benzene sulphonate/sulphonic acid systems
G. J. Tiddy, J. Bonsall, B. J. Carroll, J. G. Chambers, S. Casey, S. Ramaraju, C. Richards
University of Manchester, United Kingdom
- 10:10 AM LYOT-O3 Phase separation in bilayer lipid membranes having anisotropic leaflets
D. W. Allender, M. Schick
Kent State University, USA



FERR2 *Ferroelectric and antiferroelectric LCs 2*

Room: *Longs/Grays*

Chair: **P. Rudquist**

- 11:00 AM FERR2-I1 Amplification of the electroclinic effect induced by an atropisomeric biphenyl dopant using achiral additives
R. P. Lemieux, C. S. Hartley, N. Kapernaum, J. C. Roberts, F. Giesselmann
Queen's University, Canada
- 11:30 AM FERR2-O1 Double peak polarization current response in the deVries SmA phase: Experimental observation and theoretical modeling
L. Wang, D. M. Walba, R. Shao, D. A. Coleman, M. Nakata, T. Shimmachi, J. E. Maclennan, N. A. Clark
University of Colorado, USA
- 11:50 AM FERR2-O2 A new class of germanium-based ferroelectric liquid crystals
M. D. Wand, K. M. More, W. N. Thurmes, M. J. O'Callaghan
Displaytech, USA
- 12:10 PM FERR2-O3 A molecular model for de Vries smectics A and C, and the nature of the SmA - SmC phase transition
M. A. Osipov, M. Gorkunov, T. J. Sluckin
University of Strathclyde, United Kingdom

SYNT2 *Design and synthesis 2*

Room: *Torreys*

Chair: **A. Seed**

- 11:00 AM SYNT2-I1 Preparation and properties of paramagnetic, all-organic, chiral nitroxyl radical liquid crystals
R. Tamura, N. Ikuma, Y. Uchida, S. Shimono, Y. Noda, J. Yamauchi, Y. Aoki, H. Nohira
Kyoto University, Japan
- 11:30 AM SYNT2-O1 Self-assembled columnar mesophase from new disclike polar mesogens for (opto)electronics applications
F. Mathevet, D. Kreher, B. Donnio, D. Guillon, G. Schull, F. Charra, A. J. Attias
CEA-Grenoble, France
- 11:50 AM SYNT2-O2 Mesomorphism and interfacial properties of tetraazaporphyrins and phthalocyanines containing eight carboxylic acid groups
S. H. Eichhorn, S. Dufour, H. S. Li
University of Windsor, Canada
- 12:10 PM SYNT2-O3 Highly polar mesogens and their behavior in nematic solvents
P. Kaszynski, A. Januszko, B. Ringstrand, S. Pakhomov, M. D. Wand
Vanderbilt University, USA

BIAX *Biaxial nematics*

Room: *Shavano*

Chair: **P. Barois**

- 11:00 AM BIAX-O1 On the Landau theory of biaxial nematics: A molecular field approach
G. R. Luckhurst, T. J. Sluckin, K. S. Thomas
University of Southampton, United Kingdom



- 11:20 AM BIAX-O2 Universal mean-field phase diagram for biaxial nematics
F. Bisi, E. G. Virga, E. C. Gartland, G. De Matteis, A. Sonnet, G. E. Durand
Università di Pavia, Italy
- 11:40 AM BIAX-O3 Stronger evidence for bent-core biaxial nematics
L. A. Madsen, N. A. Zafiroopoulos, T. J. Dingemans, E. T. Samulski
University of North Carolina at Chapel Hill, USA
- 12:00 PM BIAX-O4 The nature of phases, phase transitions, and defects in achiral bent-core and Ge-tetrapodic mesogens exhibiting the biaxial nematic phase
S. Kang, V. Prasad, V. Pandya, L. Joshi, Q. Wang, G. H. Mehl, D. Finotello, S. Kumar
Kent State University, USA
- 12:20 PM BIAX-O5 Shape persistent bent mesogens: Biaxial molecules forming biaxial nematic phases
M. Lehmann, C. Köhn, S. Kumar, S. Kang, U. Kolb, T. Gorelik, D. Schollmeyer
Chemnitz University of Technology, Germany

NANO1 LC nanoscience 1

Room: *Longs/Grays*

Chair: **H. Yokoyama**

- 8:30 PM NANO1-I1 Nematic nanotube gels and other interesting lyotropic nematics
A. G. Yodh
University of Pennsylvania, USA
- 9:00 PM NANO1-O1 Physical interactions of liquid crystals with carbon nanotubes
H. J. Shah, A. K. Fontecchio, M. P. Rossi, D. Mattia, Y. Gogotsi
Drexel University, USA
- 9:20 PM NANO1-O2 Discotic-functionalized carbon nanotubes and their insertion into a columnar matrix
S. Kumar, H. K. Bisoyi
Raman Research Institute, India

BLUE Blue phases

Room: *Torreys*

Chair: **H. Coles**

- 8:30 PM BLUE-I1 Photonic lattice in polymer-stabilized blue phases
H. Kikuchi, K. Uchida, S. I. Hirata, Y. Haseba, S. Yokoyama
Kyushu University, Japan
- 9:00 PM BLUE-O1 Blue phases in dimeric liquid crystals with strong flexoelectric behaviour
M. N. Pivnenko, H. J. Coles
University of Cambridge, United Kingdom
- 9:20 PM BLUE-O2 Stabilising the blue phases
G. Alexander, J. M. Yeomans
University of Oxford, United Kingdom

COLL1 Colloids and composite systems 1

Room: *Shavano*

Chair: **T. Bellini**

- 8:30 PM COLL1-I1 Wetting phenomena in liquid-crystal colloids
H. Stark, J. I. Fukuda, M. Huber, H. Yokoyama
Universität Konstanz, Germany



- 9:00 PM COLL1-O1 Alignment and orientational ordering of the different components in liquid crystal/clay composites
S. Klein, J. S. Van Duijneveldt, J. Connolly, R. M. Richardson, G. R. Luckhurst, A. Mainal, C. R. Mamat, C. Pizzey
Hewlett-Packard Laboratories, United Kingdom
- 9:20 PM COLL1-O2 Self-organization of colloidal particles in 2D and 3D LC matrices
P. Cluzeau
CNRS, France

Tuesday, July 4

NANO2 LC nanoscience 2

Room: *Longs/Grays*

Chair: **G. Smith**

- 8:00 AM NANO2-I1 Alignment of carbon nanotubes in thermotropic and lyotropic liquid crystals
G. Scalia, J. P. F. Lagerwall, M. Haluska, U. Dettlaff-Weglikowska, S. Roth, F. Giesselmann
ENEA, C. R. Portici, Italy
- 8:30 AM NANO2-O1 Optical transmission and conductivity of nematic liquid crystals containing dispersed multiwall nanotubes
L. Lysetskiy, N. Lebovka, O. Sidletskiy, V. Panikarskaya, N. Kasyan, S. Kositsyn, P. Shtifanyuk, M. Lisunova, O. Melezhyk
National Academy of Sciences, Ukraine

SYNT3 Design and synthesis 3

Room: *Torreys*

Chair: **R. Dabrowski**

- 8:00 AM SYNT3-I1 Organic thin film transistors (TFTs) using a p-type mesomorphic semiconductor of a dithienyl-naphthalene derivative
Y. Shimizu, K. Oikawa, H. Monobe, K. I. Nakayama, B. Heinrich, T. Kimoto, K. Tsuchiya, D. Guillon, M. Yokoyama
National Institute of Advanced Industrial Science and Technology (AIST), Japan
- 8:30 AM SYNT3-O1 Polymer vesicles formed by amphiphilic diblock copolymers containing a thermotropic LC polymer block
M. H. Li, J. Yang, D. Lévy, P. Keller
Institut Curie, France

CHIR1 Chirality 1

Room: *Shavano*

Chair: **Y. Takanishi**

- 8:00 AM CHIR1-I1 Chiroclinic effect
M. Čepič
Jozef Stefan Institute and University of Ljubljana, Slovenia
- 8:30 AM CHIR1-O1 Helical mesophases in high-density DNA solutions
F. A. Manna, V. L. Lorman, R. Podgornik, B. Zeks
Université Montpellier II/ CNRS, France



BENT1 Bent-core LCs 1

Room: *Longs/Grays*

Chair: **E. Gorecka**

- 9:00 AM BENT1-I1 Application of banana mesogens
H. Takezoe
Tokyo Institute of Technology, Japan
- 9:30 AM BENT1-O1 Exciting properties of conventional phases formed by bent-core mesogens
W. Weissflog, G. Pelzl, S. Diele
Martin-Luther University of Halle, Germany
- 9:50 AM BENT1-O2 Understanding the self organization of polyphilic bent-core liquid crystals: From molecules via dimers and oligomers to side-chain-polymers and dendrimers based on silicon-containing units
C. Tschierske, C. Keith, R. Amaranatha Reddy, U. Baumeister
Martin-Luther University of Halle, Germany
- 10:10 AM BENT1-O3 Bistable analogous linear electro-optical effect and fast giant field-induced biaxiality in carbonate bent-core liquid crystals
A. Jáklí, S. Umadevi, B. Sadashiva, K. Fodor-Csorba, G. Galli
Kent State University, USA

SURF1 Interfaces and surfaces 1

Room: *Torreys*

Chair: **L. Martinez - Miranda**

- 9:00 AM SURF1-I1 Structure and rheology of smectics in random porous environments
R. L. Leheny
Johns Hopkins University, USA
- 9:30 AM SURF1-O1 Easy axis gliding and competition between surface elasticity and anchoring memory
I. Dozov, D. Stoenescu, K. Antonova, E. Popov, S. Lamarque-Forget, L. Faget, P. Martinot-Lagarde
Nemoptic, France
- 9:50 AM SURF1-O2 Planar anchoring and surface melting in smectic A phases
E. Lacaze, M. Goldmann, J. P. Michel, M. Alba
Institut des Nano-Sciences de Paris, France
- 10:10 AM SURF1-O3 Order on curved surfaces
V. Vitelli
University of Pennsylvania, USA

DEVI1 Devices and applications 1

Room: *Shavano*

Chair: **P. Bos**

- 9:00 AM DEVI1-I1 Liquid crystal waveguides: A new technology platform
S. R. Davis, M. H. Anderson, S. D. Rommel
Vescent Photonics, USA
- 9:30 AM DEVI1-O1 Photo-patterned stressed liquid crystal prisms and lenses
G. Zhang, J. West, K. Zhang, X. Wang, P. Bos, A. Glushchenko
Kent State University, USA



- 9:50 AM DEVI1-O2 True or false discrepancies on the experimental investigations of nematic order reconstruction?
R. Barberi, F. Ciuchi, H. Ayeb, G. Lombardo, R. Bartolino, G. Durand
University of Calabria, Italy
- 10:10 AM DEVI1-O3 Computational studies of liquid crystal non-linear optics
V. I. Hazelwood, T. J. Sluckin, S. L. Subota, S. J. Cox
University of Southampton, United Kingdom

BENT2 Bent-core LCs 2

Room: *Longs/Grays*

Chair: **H. Pleiner**

- 11:00 AM BENT2-I1 Mesogenic dimers composed of bent-core molecules with flexible alkylene spacer
B. Sadashiva, S. Umadevi
Raman Research Institute, India
- 11:30 AM BENT2-O1 Development of polar order and tilt in achiral smectics
D. Pocięcha, E. Gorecka, M. Cepic, N. Vaupotic, K. Gomola, J. Mieczkowski, W. Weissflog
Warsaw University, Poland
- 11:50 AM BENT2-O2 Structural characterization of the B2 phase by polarisation-analysed resonant scattering of X-rays
P. Barois, P. Fernandes, S. Wang, Z. Liu, B. McCoy, C. C. Huang, R. Pindak, W. Caliebe, W. Weissflog, T. H. Nguyen
CNRS and University of Bordeaux, France
- 12:10 PM BENT2-O3 Synthesis and B-phases of main chain liquid crystalline polymers with banana-shaped mesogen
E. J. Choi, W. C. Zin, Y. C. Kim, S. H. Paek
Kumoh National Institute of Technology, South Korea

SURF2 Interfaces and surfaces 2

Room: *Torreys*

Chair: **C. Rosenblatt**

- 11:00 AM SURF2-I1 Microfluidics in smectic free standing films and filaments
R. Stannarius
Otto von Guericke University, Magdeburg, Germany
- 11:30 AM SURF2-O1 *In-situ* prepared polymer films
D. Pires, Y. Galerne
Institut de Physique et Chimie des Matériaux de Strasbourg, France
- 11:50 AM SURF2-O2 Static friction driven dynamics of surface walls and nematic disclinations on a rough surface
M. Nobili, E. Angot, C. Blanc, M. Nespoulous
Université Montpellier II/CNRS, France
- 12:10 PM SURF2-O3 Telephone-cord instabilities in thin smectic capillaries
P. Biscari, M. C. Calderer
Politecnico di Milano, Italy



DEVI2 *Devices and applications 2*

Room: *Shavano*

Chair: **P. Raynes**

- 11:00 AM DEVI2-I1 Polarization-independent modulation and simplified spectropolarimetry using LC polarization gratings
M. J. Escuti, W. M. Jones, C. Oh, R. K. Komanduri, C. Sanchez, C. W. M. Bastiaansen, D. J. Broer
North Carolina State University, USA
- 11:30 AM DEVI2-O1 Optical simulations and measurements on a new reconfigurable liquid crystal wave plate
K. Neyts, C. Desimpel, S. Verstuyft, D. Van Thourhout, K. D'Havé, P. Rudquist
Ghent University, Belgium
- 11:50 AM DEVI2-O2 Utilization of the analog switching mode in ferroelectric liquid crystals for near-lossless continuous phase modulation
D. Engström, P. Rudquist, J. Bengtsson, K. D'Havé, S. Galt
Chalmers University of Technology, Sweden
- 12:10 PM DEVI2-O3 Polymer network stabilisation of the V state in nematic pi cell devices
P. D. Brimicombe, S. J. Elston, E. P. Raynes
University of Oxford, United Kingdom

EXOT *Exotic soft materials*

Room: *Longs/Grays*

Chair: **D. Gin**

- 6:00 PM EXOT-I1 Isotropic liquid crystalline order with spherical symmetry
J. Yamamoto, I. Nishiyama, H. Yokoyama
Kyoto University, Japan
- 6:30 PM EXOT-O1 The design, synthesis and the investigation of the structure-properties relationships of liquid crystal gold nanoparticles
G. H. Mehl, L. Cseh
University of Hull, United Kingdom
- 6:50 PM EXOT-O2 Supramolecular liquid crystalline assemblies exhibiting ionic functions
T. Kato, M. Yoshio, K. Kishimoto, H. Ohno
The University of Tokyo, Japan

CHRO *Chromonic LCs*

Room: *Torreys*

Chair: **R. Meyer**

- 6:00 PM CHRO-I1 Aggregation in dye systems that form chromonic liquid crystals
P. J. Collings, V. R. Horowitz, M. R. Tomasik
Swarthmore College, USA
- 6:30 PM CHRO-O1 A study of the effect of salts and polyamines on phase diagrams of lyotropic chromonic liquid crystals
L. Tortora, H. S. Park, K. Antion, C. Woolverton, O. D. Lavrentovich, D. Finotello
Kent State University, USA



6:50 PM CHRO-O2 Liquid crystal phases of 6-20 base pairs duplex DNA oligomers: new insights into the DNA-DNA interactions
T. Bellini, M. Nakata, G. Zanchetta, B. B. Chapman, R. Pindak, N. A. Clark
University of Milano, Italy

DFCT Structure, ordering, and defects

Room: *Shavano*

Chair: **P. Taylor**

6:00 PM DFCT-I1 Defect structures in nematic shells
A. Fernandez-Nieves, V. Vitelli, A. S. Utada, D. R. Link, D. R. Nelson, D. A. Weitz
Harvard University, USA

6:30 PM DFCT-O1 Labyrinths in free standing smectic films
N. Vaupotic, D. Pociecha, E. Gorecka, M. Cepic, J. Mieczkowski
Jozef Stefan Institute and Faculty of Education, University of Maribor, Slovenia

6:50 PM DFCT-O2 Dynamics of nematic disclinations under an external force
C. Blanc, D. Svensek, S. Zumer, M. Nobili
Université Montpellier II/CNRS, France

Wednesday, July 5

COLL2 Colloids and composite systems 2

Room: *Longs/Grays*

Chair: **Y. Reznikov**

8:00 AM COLL2-I1 The outstanding magnetic properties of liquid-crystalline suspensions of goethite nanorods
P. J. Davidson, B. J. Lemaire, J. P. Jamet, J. Ferré, P. Panine, I. Dozov, D. Stoenescu, J. P. Jolivet
CNRS, France

8:30 AM COLL2-O1 Micro-bubbles in liquid crystals
C. Voeltz, Y. Maeda, Y. Tabe, H. Yokoyama
Japan Science and Technology Agency, Japan

8:50 AM COLL2-O2 Manipulation of magnetic wires in a multi-domain twisted nematic
C. Lapointe, D. H. Reich, R. L. Leheny
Johns Hopkins University, USA

9:10 AM COLL2-O3 Probing gold nanoparticle chirality in nematic liquid crystal phases
T. Hegmann, H. Qi
University of Manitoba, Canada

DYNA Dynamic properties

Room: *Torreys*

Chair: **J. Thoen**

8:00 AM DYNA-I1 Flexoelectricity and electroconvection in a banana nematic
N. Éber, A. Jákli, J. Harden, B. Mbanga, J. Gleeson, D. Wiant, K. Fodor-Csorba
Research Institute for Solid State Physics and Optics, Hungary



- 8:30 AM DYNA-O1 Measurement of the flexoelectric coefficients e_1 and e_3
C. Kischka, L. A. Parry-Jones, S. J. Elston, E. P. Raynes
University of Oxford, United Kingdom
- 8:50 AM DYNA-O2 Flexoelectricity, ionic conduction and the nematic Freedericksz transitions in magnetic and electric fields
C. V. Brown, J. M. Hind, A. A. Smith, C. L. Trabi
Nottingham Trent University, United Kingdom
- 9:10 AM DYNA-O3 Using nanowires to perform *in-vivo* measurements of elastic and viscous properties of an anisotropic fluid
C. Denniston, C. J. Smith
University of Western Ontario, Canada

LASE LC lasers

Room: *Shavano*

Chair: **P. Palffy-Muhoray**

- 8:00 AM LASE-I1 Lasing from a liquid crystal grating formed by polarization holography
S. J. Woltman, J. N. Eakin, G. P. Crawford
Brown University, USA
- 8:30 AM LASE-O1 Random lasing and weak localization of light in nematic liquid crystals
G. Strangi, S. Ferjani, V. Barna, A. De Luca, C. Versace, N. Scaramuzza, R. Bartolino
University of Calabria, Italy
- 8:50 AM LASE-O2 Random lasing in multidomain cholesteric liquid crystals
M. F. Moreira, M. Gu, O. D. Lavrentovich, B. Taheri, P. Palffy-Muhoray, H. Finkelmann
Kent State University, USA
- 9:10 AM LASE-O3 Electric field controlled lasing from a low-molecular mass cholesteric liquid crystal
B. A. Umanskii, M. I. Barnik, L. M. Blinov, V. V. Lazarev, S. P. Palto, N. M. Shtykov
A.V. Shubnikov Institute of Crystallography of Russian Academy of Sciences, Russia

Thursday, July 6

ELAS1 LC elastomers 1

Room: *Longs/Grays*

Chair: **L. Radzihovsky**

- 9:00 AM ELAS1-I1 Modeling shape evolution in LC elastomers
R. L. B. Selinger, J. V. Selinger, B. Mbang
Kent State University, USA
- 9:30 AM ELAS1-O1 Soft smectic-C elastomers
T. Lubensky, O. Stenull
University of Pennsylvania, USA
- 9:50 AM ELAS1-O2 Electroclinic liquid crystal elastomers with electrically controlled actuation
J. Naciri, C. Spillmann, B. R. Ratna
Naval Research Laboratory, USA
- 10:10 AM ELAS1-O3 Micro-actuators: When artificial muscles made of nematic liquid crystal elastomers meet soft lithography
P. Keller, A. Buguin, M. H. Li, P. Silberzan, B. Ladoux
Institut Curie, France



PHRE Photoresponsive materials

Room: *Torreys*

Chair: **K. Suresh**

- 9:00 AM PHRE-I1 Photoactive liquid-crystalline elastomers
A. Sanchez-Ferrer, A. Szymczyk, D. Velasco, H. Finkelmann
Albert-Ludwigs-Universität Freiburg, Germany
- 9:30 AM PHRE-O1 Layer-by-layer thickening and inclusions nucleations light-induced in chiral smectic membranes
F. Bougrioua, P. Cluzeau, G. Joly, H. T. Nguyen, V. Dolganov
University of Lille, France
- 9:50 AM PHRE-O2 Light controlled bistable switching in surface stabilized ferroelectric liquid crystals
M. Talarico, A. Golemme
University of Calabria, Italy
- 10:10 AM PHRE-O3 Photo-alignment in azo dye-doped liquid crystal films and applications
A. Y.-G. Fuh, S. Y. Huang, T. H. Lin, S. T. Wu, H. C. Jau
National Cheng Kung University, Taiwan

NPRT Nanoparticles in LCs

Room: *Shavano*

Chair: **A. Glushchenko**

- 9:00 AM NPRT-I1 Ferroelectric nanoparticle/liquid crystal colloids: Nonsynthetic method of adjusting physical properties
J. L. West, F. Li, Y. Reznikov, O. Buchnev, C. I. Cheon, A. Glushchenko, V. Y. Reshetnyak, T. J. Sluckin
Kent State University, USA
- 9:30 AM NPRT-O1 Viscoelastic properties of ferroelectric nematic suspensions with large increase in T_{NI}
M. Copic, A. Mertelj, O. Buchnev, Y. Reznikov
Jozef Stefan Institute and University of Ljubljana, Slovenia
- 9:50 AM NPRT-O2 Freedericksz transition threshold in nematic liquid crystals filled with ferroelectric nano-particles
T. J. Sluckin, V. Y. Reshetnyak, S. M. Shelestiuk
University of Southampton, United Kingdom
- 10:10 AM NPRT-O3 Modification of physical properties of the host media of LCDs by doping nanoparticles resulting in the enhancement of their performance
S. Kobayashi, S. Sano, K. Takatoh, T. Miyama, Y. Shiraishi, N. Nishida, N. Toshima
Tokyo University of Science, Japan

ELAS2 LC elastomers 2

Room: *Longs/Grays*

Chair: **F. Giesselmann**

- 11:00 AM ELAS2-I1 Liquid crystalline polymers in confined geometries: Colloids and layers
R. Zentel, M. Vennes, P. Beyer
University of Mainz, Germany



- 11:30 AM ELAS2-O1 Biaxial shape memory effect exhibited by monodomain chiral smectic C elastomers
K. Hiraoka
Tokyo Polytechnic University, Japan
- 11:50 AM ELAS2-O2 Critical point for the isotropic-nematic phase transition in liquid single-crystal elastomers
G. Cordoyiannis, A. Lebar, B. Zalar, S. Zumer, H. Finkelmann, Z. Kutnjak
Jozef Stefan Institute, Slovenia
- 12:10 PM ELAS2-O3 Structure of nematic liquid crystalline elastomers under uniaxial deformation
P. A. Heiney, F. Zhang, A. Srinivasan, B. R. Ratna, J. Naciri
University of Pennsylvania, USA

MODL Modeling and simulation

Room: *Torreys*

Chair: **M. Yoneya**

- 11:00 AM MODL-I1 Simulation and theory of inhomogeneous liquid crystals
M. P. Allen, D. L. Cheung
University of Warwick, United Kingdom
- 11:30 AM MODL-O1 Self organization of nanoscale mesogens
A. G. Vanakaras, S. D. Peroukidis, D. J. Photinos
University of Patras, Greece
- 11:50 AM MODL-O2 Coarse-grained simulations of a macromolecular liquid crystal
M. R. Wilson, Z. E. Hughes
University of Durham, United Kingdom
- 12:10 PM MODL-O3 Molecular simulation and theory of liquid crystals at rough surfaces
D. L. Cheung
University of Warwick, United Kingdom

OPTI1 LC optics and photonics 1

Room: *Shavano*

Chair: **M. O'Callaghan**

- 11:00 AM OPTI1-I1 Liquid crystal cells for generation and propagation of optical spatial solitons
C. Umeton, A. De Luca, G. Coschignano, L. Pezzi, A. Veltri, A. Alberucci, C. Conti,
M. Peccianti, G. Assanto
University of Calabria, Italy
- 11:30 AM OPTI1-O1 Diffractive LC gratings with linear and circular birefringence
C. M. Van Heesch, M. J. Escuti, C. Bastiaansen, D. Broer
Eindhoven University of Technology, Netherlands
- 11:50 AM OPTI1-O2 Observation of the out-coupling of a nematicon
J. Beeckman, K. Neyts, X. Hutsebaut, M. Haelterman
Ghent University, Belgium
- 12:10 PM OPTI1-O3 Liquid crystal fresnel lens using a surface relief structure
L. C. Chien, D. Wang
Kent State University, USA



NANO3 LC nanoscience 3

Room: *Longs/Grays*

Chair: **J. Lagerwall**

- 8:30 PM NANO3-I1 Field-theoretic nanocomposite simulations: Results of a new hybrid particle/SCFT algorithm
S. W. Sides, G. H. Fredrickson
Tech-X Corporation, USA
- 9:00 PM NANO3-O1 New liquid crystalline nanocomposites
G. Lattermann, L. Torre Lorente, M. Gruzdev, M. Krekhova, N. V. Usoltseva
Universität Bayreuth, Germany
- 9:20 PM NANO3-O2 Nano-porous polymer networks based on hydrogen bonding smectic liquid crystal monomers
C. Luengo Gonzalez, J. Lub, C. W. M. Bastiaansen, D. J. Broer
Technical University Eindhoven, Netherlands

BIOL LC bioscience and biotechnology

Room: *Torreys*

Chair: **O. Lavrentovich**

- 8:30 PM BIOL-I1 Interactions and symmetry in DNA mesophases
R. Podgornik
National Institutes of Health, USA
- 9:00 PM BIOL-O1 Liquid crystal pre-patterning as a mechanism for cell division
D. Miroshnychenko, N. A. Hill, N. J. Mottram, J. E. Lydon
University of Leicester, United Kingdom
- 9:20 PM BIOL-O2 Polarity and chirality in NCP mesophases and chromatin fibers
V. L. Lorman, F. A. Manna, R. Podgornik, B. Zeks
Université Montpellier II/ CNRS, France

OPTI2 LC optics and photonics 2

Room: *Shavano*

Chair: **T. Furtak**

- 8:30 PM OPTI2-I1 Infrared spectra and director fields of photonic crystals made of macroporous silicon and liquid crystals
H. S. R. Kitzerow, H. Matthias, S. L. Schweizer, R. B. Wehrspohn
University of Paderborn, Germany
- 9:00 PM OPTI2-O1 Tunable all-optical switching in photonic structures with liquid-crystal defects
A. E. Miroshnichenko, I. Pinkevych, Y. S. Kivshar
The Australian National University, Australia
- 9:20 PM OPTI2-O2 Photonic effects based on nano-modification of self-organized helix in chiral liquid crystals
M. Ozaki, H. Yoshida, Y. Matsuhisa, C. H. Lee, Y. Takao, A. Fujii
Osaka University, Japan



Friday, July 7

SUPR *Supermolecular assembly*

Room: *Longs/Grays*

Chair: **P. Kaszynski**

- 10:50 AM SUPR-I1 Synthesis, assembly, and electrical properties of new liquid crystals from crowded and twisted pi systems
C. Nuckolls
Columbia University, USA
- 11:20 AM SUPR-O1 Shape selection in self-assembled chiral membranes: New mechanism based on the flexoelectric effect
J. V. Selinger, Z. Lu
Kent State University, USA
- 11:40 AM SUPR-O2 Mesomorphic properties induced by hyperfunctionalization of dendronized polymers
D. Guillon, F. Moingeon, P. Masson, S. Mery
IPCMS, France
- 12:00 PM SUPR-O3 Superstructures of non-disk shaped mesogens generated by dipole-dipole and quadrupole-quadrupole interactions
K. Kishikawa, K. Oda, S. Kohmoto
Chiba University, Japan

ALGN *LC alignment*

Room: *Torreys*

Chair: **D.-K. Yang**

- 10:50 AM ALGN-I1 Physical mechanisms of liquid crystal photoaligning
V. G. Chigrinov, V. M. Kozenkov, A. D. Kiselev, H. S. Kwok
Hong Kong University of Science and Technology, Hong Kong
- 11:20 AM ALGN-O1 Alignment control of columnar liquid crystals for uniformly homeotropic domain with circularly polarized infrared irradiation
H. Monobe, H. Hori, K. Awazu, Y. Shimizu
National Institute of Advanced Industrial Science and Technology (AIST), Japan
- 11:40 AM ALGN-O2 Effects of properties of polyimides on pre-tilt angle of liquid crystals
I. Kobayashi, H. Endo
Nissan Chemical Industries, Ltd., Japan
- 12:00 PM ALGN-O3 2-D liquid crystal patterning using holographically exposed alignment layers
J. N. Eakin, G. P. Crawford
Brown University, USA

CHIR2 *Chirality 2*

Room: *Shavano*

Chair: **K. Fodor-Csorba**

- 10:50 AM CHIR2-I1 Liquid crystal properties as a monitor of internal structure of filamentous bacteriophage
M. M. Green, S. Tomar, L. A. Day
Polytechnic University, USA



- 11:20 AM CHIR2-O1 Organic semiconductors with helical structure based on oligothiophene derivatives exhibiting chiral nematic phase
M. Funahashi, N. Tamaoki
National Institute of Advanced Industrial Science and Technology, Japan
- 11:40 AM CHIR2-O2 Chiral LC nanomotor in pseudo-biomembranes driven by proton transfer
Y. Tabe, T. Tezuka, H. Yokoyama
Waseda University, Japan
- 12:00 PM CHIR2-O3 Light driven supramolecular chirality in propeller-like H-bonded complexes showing columnar mesomorphism
T. Sierra, J. Barbera, A. Pérez, P. Romero, B. Ros, J. L. Serrano, R. Tejedor, F. Vera
Instituto de Ciencia de Materiales de Aragon, Spain

