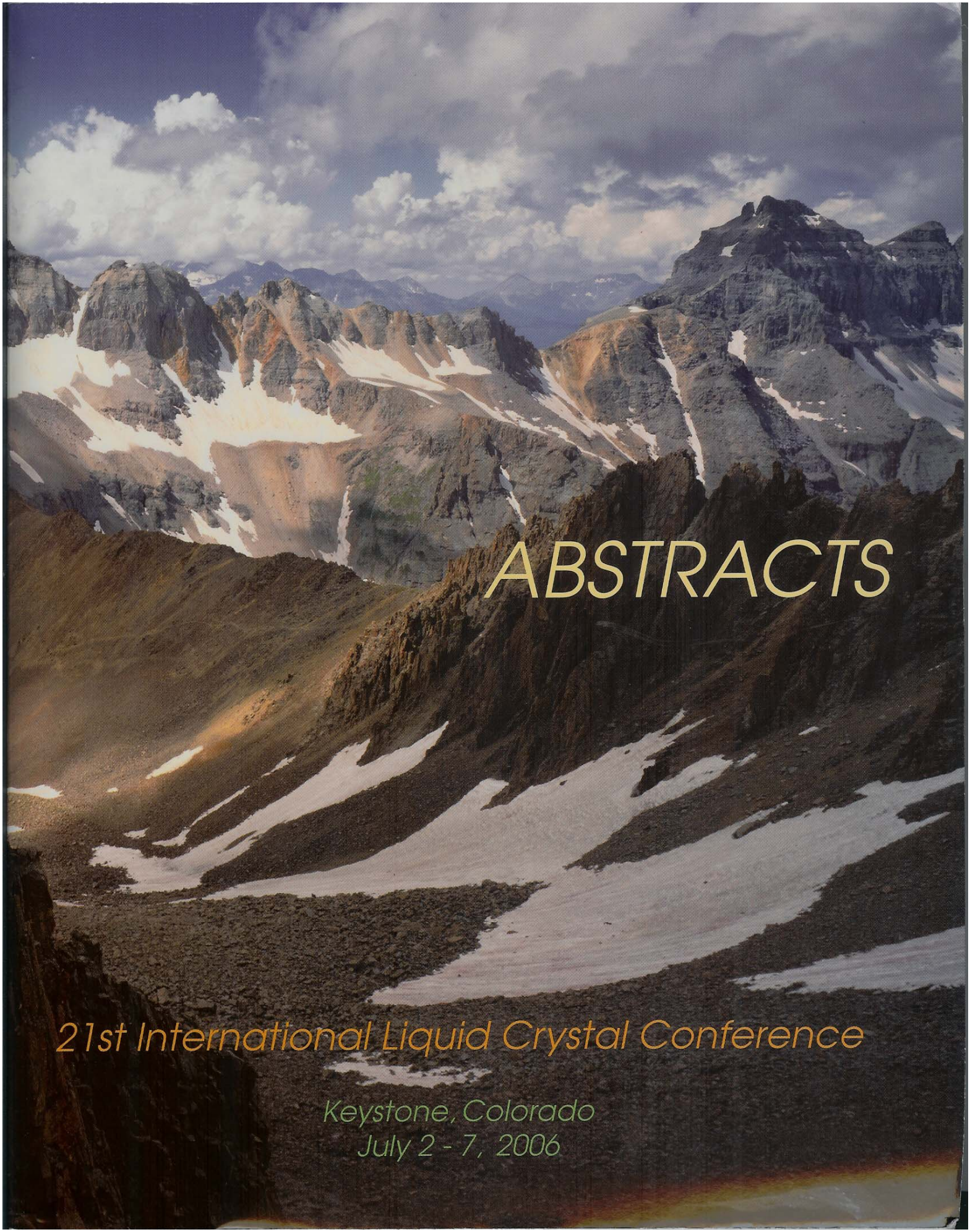
ABSTRACTS
21st International Liquid Crystal Conference
Keystone, Colorado
July 2 - 7, 2006

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PROGRAM SUPPLEMENT

Organized by:

The Liquid Crystal Materials Research Center
University of Colorado, Boulder

Tuesday, July 4

Poster Session 5, 3:30 PM - 4:30 PM

DEVIP ***Posters - Devices and applications***

Room: *Quandary*

DEVIP-4 *CHANGED TO ORAL CONTRIBUTION DEVI1-O3*
Microwave variable phase shifter of microstrip and coplanar waveguide structures using ferroelectric liquid crystal
H. Moritake, S. Morita, R. Ozaki, T. Kamei, Y. Utsumi
National Defense Academy, Japan

DEVIP-18 *CHANGED TO DIFFERENT POSTER SESSION SYNTP-92*
All aromatic, nonlinear mesogens with heterocyclic units
N. A. Zafiropoulos, T. J. Dingemans, E. J. Choi, W. Lin, E. T. Samulski
University of North Carolina at Chapel Hill, USA

DEVIP-80 Electrically-switchable, polarization-independent diffraction grating based on negative dielectric anisotropy liquid crystal
M. H. Zhu, G. Carbone, and C. Rosenblatt
Case Western Reserve University, USA

DEVIP-81 The effect of interfacial roughness on the electrical properties of organic thin film transistors with an anisotropic dielectric layer
J. I. Jung, H. R. Kim, J. Y. Song, and J. H. Kim
Hanyang Univesity, South Korea

DEVIP-82 Novel Patterned Vertical Alignment LCD for Mobile Application with High Transmittance and Reliability
J. H. Kim, Y. S. Yeo, W. S. Park, S. K. Lee, S. H. Ahn, and C. W. Kim
Samsung Electronics Co., Ltd., South Korea

DEVIP-83 Prove of biaxial nematic phase by electro-optical properties
C. Shin, N. C. Choi, D. W. Kim, H. Choi, W. T. Kim, J. I. Jin, and S. T. Shin
Korea University, South Korea

DEVIP-84 Multi-reflection effects in the black state of a LCD
P. J. Bos, and Y. K. Jang
Kent State University, USA

DEVIP-85 Rotating polarizing technique for the determination of phase transitions of liquid crystals
L. Somayajula
Acharya Nagarjuna University, India

DEVIP-86 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

DEVIP-81

The effect of interfacial roughness on the electrical properties of organic thin film transistors with an anisotropic dielectric layer

J. I. Jung, H. R. Kim, J. Y. Song, and J. H. Kim

Department of Electronics and Computer Engineering, Hanyang univesity, South Korea

Organic thin film transistors (OTFTs) have drawn much attention for flexible electronics such as smart cards, flexible displays, and several types of low cost and low-end electronics.Recently , OTFTs with fold-effect mobility and on/off ratio current ratio comparable to a-Si:H thin film transistors have been fabricated. Since the electrical conduction of OTFTs is highly affected by the molecular ordering, crystalline orientation, and the crystallized grain size of the organic semiconductors, there were several efforts to modify interfacial properties between the evaporated pentacene molecules and the insulator surface. In general, highly oriented polymeric layers by mechanical rubbing or irradiation of polarized UV light were used for the purpose. But, the electrical performances of OTFTs on the organic insulators are not satisfactory yet, comparing with those on the inorganic insulators, especially in terms of leakage current, the driving gate voltage, and stability in ambient condition. In this paper, we investigated anisotropic conduction effects of pentacene-based OTFT on an anisotropic insulator fabricated by obliquely evaporated silicon dioxide. As the evaporation angle of SiO2 increased, the anisotropic interaction at the dielectric interface and molecular ordering of evaporated pentacenes increased. However, in highly obliquely evaporated dielectric surface, it was observed that growth of the pentacene molecules was highly limited due to increased roughness at the inteface. The molecular ordering effect and the grain size effect depending on the surface anisotropy and the surface roughness were discussed with the results of the field-induced mobility and the surface morphology. We believe that further optimization of oblique evaporation in OTFTs would result in more anisotropic electrical property.