EFFECT OF LAYER STRUCTURE ON RATIO OF CONCENTRATION BETWEEN POLYMER AND LIQUID CRYSTAL FOR PHASE SEPARATED COMPOSITE ORGANIC FILMS (PSCOF)

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The ratio of optimized concentration on optical characteristics for phase separated composite organic films (PSCOF) liquid crystal display is 30% of polymer (NOA65) and 70% of ferroelectric liquid crystal (Felix016). The layer structure in ferroelectric liquid crystal cell made by 30% NOA65 and 70% Felix016 materials is tilt-bookshelf layer structure. The angle of tilt-bookshelf structure is 17° which is almost same of tilt angle of ferroelectric liquid crystal in smectic-C* phase. We know that this result is from compensating the layer buckling. In this paper, we will discuss the effect of layer structure in PSCOF cell on ratio of concentration between polymer and liquid crystal by x-ray measurements. We also discuss the relation between layer structures in the cell and electro-optical properties. We believe that technology of PSCOF is a good solution to solve the problems of align-defect and mechanical shock for future TV application and plastic LCD.
APPL-P031 POLARIZATION GRATING OF PHOTOLIGNED LIQUID CRYSTALS WITH OPPOSITELY TWISTED DOMAIN STRUCTURES  
C-J. Yu, J. Kim, D-W. Kim, S-D. Lee

APPL-P032 DESIGN OF A POLARIZATION-INSENSITIVE DIFFRACTION GRATING DEVICE BASED ON A DYE-DOPED LIQUID CRYSTAL IN POLYMER NETWORKS  
E. Jang, H-R. Kim, Y-J. Na, S-D. Lee

APPL-P033 PRECISE DETERMINATION OF THERMAL BEHAVIORS OF LIQUID CRYSTAL-BASED OPTICAL DEVICES IN THE FABRY-PEROT INTERFEROMETRY  
H-R. Kim, E. Jang, Y-W. Lee, J. Im, B. Lee, S-D. Lee

APPL-P034 PHOTO-CONTROLLED RETARDATION FILM BASED ON A REACTIVE LIQUID CRYSTAL AND ITS USE FOR TRANSLECTIVE DISPLAYS  
J. Kim, D-W. Kim, J-H. Kim, S-D. Lee

APPL-P035 FABRICATION OF A POLARIZATION INDEPENDENT MICROLENS ARRAY IN THE HOMEOTROPIC LIQUID CRYSTAL CONFIGURATION  
Y. Choi, Y-T. Kim, J-H. Park, J-H. Kim, S-D. Lee

APPL-P036 MOBILITY ENHANCEMENT IN AN ORGANIC THIN-FILM TRANSISTOR OF A SOLUBLE SEMICONDUCTING POLYMER ALIGNED ON A PHOTOSENSITIVE BUFFER LAYER  
S-J. Kim, C-J. Yu, C-H. Kim, T-Y. Yoon, S-D. Lee

APPL-P037 OPTICAL CONTROL OF A LIQUID CRYSTAL BINARY GRATING FABRICATED ON A SURFACE-COMMAND PATTERNED LAYER  
H. Baak, E. Jang, Y-T. Kim, S-D. Lee

APPL-P038 THE 00-3600 BISTABLE SWITCHING IN NLC CELLS WITHOUT INTERMEDIATE HALF-TURN TWISTED STATE  
S. Paltto, M. Barnik, V. Lazarov

APPL-P039 A METHOD FOR PREPARING FLEXIBLE FILMS FOR LIQUID CRYSTAL DISPLAYS  
Q. Wang, S. Kumar

APPL-P040 PROPOSAL OF A PARAMETER T2 TO DEFINE BIREFRINGENCE OF BIAXIAL RETARDATION FILMS  
T. Higano, T. Ishinabe, T. Uchida

APPL-P041 TRULY BISTABLE LOW VOLTAGE PHOTO-ALIGNED FERROELECTRIC LCD FOR SMART CARD APPLICATIONS  
V. Chigrinov, D.D. Huang, E. Poshidashev

APPL-P042 EFFECT OF THE SURFACE ANCHORING ENERGY ON DEFECTS IN A LIQUID CRYSTAL DIRECTOR FIELD  

APPL-P043 SYNTHESIS AND THERMAL PROPERTIES OF POLYMIDES CONTAINING CHALCONE DERIVATIVE AND THEIR APPLICATION FOR ALIGNMENT FILM  
N. Koide, T. Mihara, Y. Nakao

APPL-P044 OPTIMIZATION OF MEMOMI LCD PASSIVE MATRIX DRIVING  
V. Chigrinov, S.A. Studentskov, V.A. Brazheenev, I.S. Bezkozina, H.S. Kwon

APPL-P045 DEFECTS NUCLEATION AND DYNAMICAL BEHAVIOR FROM SURFACE INHOMOGENEITY  

APPL-P046 A STUDY OF THE ANTIFERROELECTRIC LIQUID CRYSTALS USING POLYMIDES AND AC FIELD  
K. Matczyszyn, N. Bennin, P. Castillo, X. Quintana, J.M. Oton

APPL-P047 EXPERIMENTAL AND NUMERICAL STUDIES ON LIQUID CRYSTAL LENS WITH SPERICAL ELECTRODE  
B. Wang, M. Ye, S. Sato

APPL-P048 NEW METHOD OF VOLTAGE APPLICATION FOR IMPROVING RESPONSE TIME OF A LIQUID CRYSTAL LENS  
M. Ye, S. Sato

APPL-P049 TWO-PHOTON PUMPED LASING OF PHOTONIC LIQUID-CRYSTAL LASERS  
K. Shirata, H-B. Sun, S. Kawata

APPL-P050 TIME DEPENDENCE OF SOLUTON FORMATION IN PLANAR BULK NEMATIC LIQUID CRYSTAL CELLS  
J. Beeckman, K. Neys, X. Hutsebaut, C. Cambournac, M. Haelterman

APPL-P051 LEAKAGE CURRENTS IN AFLC CELLS WITH ASYMMETRIC BOUNDARIES  

APPL-P052 LASER ACTION BASED ON THE ELECTRICALLY CONTROLLABLE DEFECT MODE IN ONE-DIMENSIONAL PHOTONIC CRYSTAL CONTAINING CONDUCTING POLYMER AND LIQUID CRYSTAL DEFECT LAYERS  
R. Ozaki, Y. Matsuha, M. Ozaki, K. Yoshino

APPL-P053 THE STUDY OF PHASE TRANSITION FOR NEW BANANA-SHAPED LIQUID CRYSTALS  

APPL-P054 EFFECT OF LAYER STRUCTURE ON RATIO OF CONCENTRATION BETWEEN POLYMER AND LIQUID CRYSTAL FOR PHASE SEPARATED COMPOSITE ORGANIC FILMS (PSCOF)  

APPL-P055 TUNABLE DEFECT MODE IN ONE-DIMENSIONAL PHOTONIC CRYSTAL WITH LIQUID CRYSTAL DEFECT LAYER  
R. Ozaki, H. Miyauchi, M. Ozaki, K. Yoshino

APPL-P056 A NOVEL METHOD TO BROADEN THE EFFECTIVE BANDWIDTH OF CHOLESTERIC LIQUID CRYSTAL POLARIZER  
H-L. Kuo, P-J. Hsieh

APPL-P057 POLYPHENOL NEW TYPE OF NANOSCALE POLYMER-LC SWITCHABLE PHOTONIC DEVICES FOR TRANSDUCERS  
J. Stumpf, S. Slussarenko, O. Sakhno

APPL-P058 THE ROLE OF ALIGNMENT LAYERS ON THE INDUCED RELAXATION OF PASSIVELY MULTIPLEXED ANTIFERROELECTRIC LIQUID CRYSTAL DISPLAYS  
P. L. Castillo, R. DaJhrwell, P. Kula, X. Quintana, N. Bennin, J-M. Oton

APPL-P059 ELECTRO-OPTIC TELECOMMUNICATION DEVICES AT 1550NM EMPLOYING ELECTROCLINIC AND FERROELECTRIC SWITCHING OF AN ORGANOSILICONXOXYLAM LIQUID CRYSTAL  
O. Hadeler, M. Pivnienko, M. Coles, H. Coles