Session 1: Annual SID Business Meeting  
Tuesday, June 5, 2012 / 8:00 – 8:20 am / Ballroom West

Session 2: Opening Remarks / Keynote Addresses  
Tuesday, June 5, 2012 / 8:20 – 10:20 am / Ballroom West

2.1: **Keynote 1:** Recent Breakthroughs for Larger-Sized OLED Displays and Their Application to OLED TV  
Byung Chul Ahn, LG Display Co., Ltd.

2.2: **Keynote 2:** Photonic Display Transformation for Continuous Growth of the Display Industry  
Sung Tae Shin, Samsung Electronics, Co., Ltd.

2.3: **Keynote 3:** Computational Displays: New Opportunities for Interactive, Light Sensitive, and 3D Displays  
Ramash Raskar, MIT Media Lab

Session 3: Oxide TFTs (Active-Matrix Devices)  
Tuesday, June 5, 2012 / 10:50 am – 12:10 pm / Ballroom East

Chair: Mike Hack, Universal Display Corp.  
Co-Chair: Jerzy Kanicki, University of Michigan

3.1: **Invited Paper:** Amorphous-Oxide TFTs: Progress and Issues  
Arokia Nathan, University College London, London, UK

3.2: An Integrated Gate Driver Circuit Employing Depletion-Mode IGZO TFTs  
Zhongyuan Wu, BOE Technology Group Co., Ltd., Beijing, China

3.3: High-Speed Shift Register for High-Resolution AMBs with Self-Aligned Coplanar a-IGZO TFTs  
Jin Jang, Kyung Hee University, Seoul, Korea

3.4L: **Late-News Paper:** Physical Model and Simulation Platform for High-Level Instability-Aware Design of Amorphous-Oxide Semiconductor Thin-Film Transistors  
Woojoon Kim, Kookmin University, Seoul, Korea

Session 4: Blue-Phase Liquid Crystal 1 (Liquid-Crystal Technology)  
Tuesday, June 5, 2012 / 10:50 am – 12:10 pm / Ballroom West

Chair: Shin Tson Wu, University of Central Florida  
Co-Chair: Matthew E. Sousa, 3M

4.1: **Distinguished Student Paper:** Low-Voltage and Hysteresis-Free Blue-Phase LCD with Vertical Field Switching  
Hui Chuan Cheng, University of Central Florida, Orlando, FL USA

4.2: Polymer-Stabilized Blue-Phase Material Driven at Low Voltage  
Tetsuji Ishitani, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

4.3: Frequency Effects on Blue-Phase Liquid Crystals  
Yan Li, University of Central Florida, Orlando, FL USA

4.4: New Materials for Polymer-Stabilized Blue Phase  
Michael Wittek, Merck KGaA, Darmstadt, Germany

Session 5: Stereoscopic Display Applications (3D/Applications)  
Tuesday, June 5, 2012 / 10:50 am – 12:10 pm / Room 205AB

Chair: Jyrki Kimmel, Nokia Research Center  
Co-Chair: Adi Abileah, Planar Systems, Inc.

5.1: A Novel Wide-View Design for Stereoscopic 3D LCDs  
Chia Chiang Hsiao, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

5.2: Switchable 2D/3D Display Using Prism Conversion Module  
Wallen Mphepo, Beijing University, Beijing, China

5.3: Active Light-Field Rendering in Multi-View Display Systems  
Juyong Park, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea

5.4: The Autostereoscopic System with Diffractive Optical Elements  
Qing-Long Deng, National Chiao Tung University, Tainan City, Taiwan

Session 6: Innovations in FPD Analysis (Display Measurement)
Tuesday, June 5, 2012 / 10:50 am – 12:10 pm / Room 205C
Chair: Stephen P. Atwood, Azonix Corp.
Co-Chair: Frank F. Rochow, Consultant
6.1: Influence of TV Media Content on Display Lifetime and Image-Sticking Measurement Techniques
Andrew Johnson, Dupont Displays, Inc., Santa Barbara, CA USA
6.2: Viewing-Angle Measurements on Reflective e-Paper Displays
Dirk Hertel, E Ink Corp., Cambridge, MA USA
6.3: A New Method for Hot-Spot Mura Quantification and Evaluation in LCD Backlight Units and Panels
Li-Xuan Chen, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
6.4: A Computational Color-Difference Metric to Evaluate the Viewing-Angle Range for FPDs
Chao Hua Wen, National Taiwan University, Taipei, Taiwan

Session 7: Plasma-Display Technology (Emissive Displays)
Tuesday, June 5, 2012 / 10:50 am – 12:10 pm / Room 210A
Chair: Larry F. Weber, Consultant
Co-Chair: Ravi P. Rao, Specialty Phosphors, Inc.
7.1: Invited Paper: Characteristics of Pure MgO Powders Added to an MgO Film
Min Suk Lee, Samsung SDI Co., Ltd., Chungcheongnam, Korea
7.2: Fast-Addressing Waveform with Negative-Going Ramp for High-Xe PDP with High-Gamma Cathode Materials
Ki-Woong Whang, Seoul National University, Seoul, Korea
7.3: Distinguished Paper: Ultra-Thin Shadow-Mask PDP Fabricated by Vacuum In-line Sealing Technology
Lanlan Yang, Southeast University, Nanjing, China
7.4: AC PDPs with Gold Nanorods in the Protecting layer
Kyung Cheol Choi, KAIST, Daejeon, Korea
7.5L: Late-News Paper: Development of a 145-in.-Diagonal Super Hi-Vision Plasma-Display Panel
Keiji Ishii, Japan Broadcasting Corporation (NHK), Tokyo, Japan

Session 8: e-Paper I (Flexible Displays)
Tuesday, June 5, 2012 / 10:50 am – 12:10 pm / Room 210B
Chair: Kevin Gahagan, Corning Incorporated
Co-Chair: Jutta Rasp, FPExperts
8.1: Invited Paper: A High-Brightness Electrofluidic Display Film
Jason Heikenfeld, University of Cincinnati, Cincinnati, OH USA
8.2: Flexible Electrophoretic Displays Driven by N-Type Organic TFTs
Wei-Lun Hung, AU Optronics Corp., Hsinchu, Taiwan
8.3: Transparent Silver Nanowire Film as Pixel Electrode for Flexible Electrophoretic Displays
Shih-Hao Tseng, AU Optronics Corp., Hsinchu, Taiwan
8.4: Distinguished Paper: Novel Color Electrophoretic e-Paper Using Independently Movable Colored Particles
Naoki Hiji, Fuji Xerox Co., Ltd., Kanagawa, Japan

Session 9: Oxide AMOLED Displays (Active-Matrix Devices)
Tuesday, June 5, 2012 / 2:00 – 3:20 pm / Ballroom East
Chair: Hyun Jae Kim, Yonsei University
Co-Chair: Kalluri R. Sarma, Honeywell, Inc.
9.1: WITHDRAWN
9.2: New Threshold-Voltage Compensation Pixel Circuits in 13.5-in. QFHD OLED Display of Crystalline In-Ga-Zn-Oxide FETs
Toru Tanabe, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
9.3: A 32-in. AMOLED TV Panel Driven by a-IGZO TFTs
Tsung Hsiang Shih, AU Optronics Corp., Hsinchu, Taiwan
9.4L: Late-News Paper: Microscopic Mechanism of the Negative Bias and Illumination Stress Instability of Amorphous-Oxide TFTs
Yong-Sung Kim, Korea Research Institute of Standards and Science, Daejeon, Korea

Session 10: Blue-Phase Liquid Crystal 2 (Liquid-Crystal Technology)
Tuesday, June 5, 2012 / 2:00 – 3:20 pm / Ballroom West
Chair: Allan R. Kmetz, Consultant
Co-Chair: Tatsuo Uchida, Sendai National College of Technology
10.1: A Microsecond-Response Blue-Phase Liquid-Crystal Device
Yuan Chen, University of Central Florida, Orlando, FL USA
10.2: Dynamic Response of a Polymer-Stabilized Blue-Phase Liquid Crystal
Jin Yan, University of Central Florida, Orlando, FL USA
10.3: Polymerization Effect on Electro-Optic Properties of Blue-Phase Liquid Crystals
Jian Gang Lu, Shanghai Jiao Tong University, Shanghai, China

10.4: Aerosil-Gels-Dispersed Blue-Phase Liquid Crystals: A New Technique to Control the 
Electro-Optical Behavior of a Fast-Switching Display
Jeong-yeon Hwang, Kent State University, Kent, OH USA

Session 11: Polarization-Based 3D Displays (3D/Display Systems/Liquid-Crystal Technology)
Tuesday, June 5, 2012 / 2:00 – 3:20 pm / Room 205AB
Chair: Philip J. Bos, Kent State University
Co-Chair: W. Lee Hendrick, Rockwell Collins Optronics

11.1: Video-Wall Matrix of Stereoscopic Displays Using a Film Patterened Retarder (FPR)
Adi Abileah, Planar Systems, Inc., Beaverton, OR USA

11.2: Fast Ferroelectric Liquid-Crystal Modes for Field-Sequential-Color and 3D Displays
Vladimir Chigrinov, Hong Kong University of Science & Technology, Kowloon, Hong Kong

11.3: Stereoscopic 3D Display by Fast-Response Liquid-Crystal Polarization Rotator
Chung Yang Lee, Hong Kong University of Science & Technology, Kowloon, Hong Kong

11.4: Invited Paper: Autostereoscopic Imaging with Simultaneous Reproduction of Two Image
Elements in One Display Pixel: General Approach and Experimental Results
Vasily Alexandrovich Ezhov, A. M. Prokhorov General Physics Institute, Moscow, Russia

Session 12: Advances in 3D Display Characterization (Display Measurements/3D)
Tuesday, June 5, 2012 / 2:00 – 3:20 pm / Room 205C
Chair: Marja P. Salmimaa, Nokia Research Center
Co-Chair: Thomas G. Fiske, Qualcomm MEMS Technologies, Inc.

Takashi Shibata, Waseda University, Saitama, Japan

12.2: Characterization of 3D Gray-to-Gray Crosstalk with a Matrix of Lightness Differences
Hans Von Parys, Philips Big TV, Brugge, Belgium

12.3: Characterizations of 3D TV: Active vs. Passive
Kjell Brunstrom, Acreo AB, Kista, Sweden

12.4: Investigation of Perceptual Gray-to-Gray and 3D Color Crosstalk for Stereoscopic Display
Sunhee Park, LG Display Co., Ltd., Gyeongguki-do, Korea

12.5L: Late-News Paper: Binocular Fusion Camera to Render Pixel Detail in 3D Displays
Edward Kelley, Keltek, Longmont, CO USA

Session 13: CaMgO Protective Layer for Low-Power Plasma Displays (Emissive Displays)
Tuesday, June 5, 2012 / 2:00 – 3:20 pm / Room 210A
Chair: Qun Yan, Sichuan COC Display Devices Co., Ltd.
Co-Chair: Yong Seog Kim, Hongik University

13.1: Invited Paper: Carbonation Reaction of a CaMgO Protective Layer for PDPs
Yasushi Motoyama, Japan Broadcasting Corporation (NHK), Tokyo, Japan

13.2: Characteristics of ACPDPs with (Mg,Ca)O Protective Layer Sealed under Reducing Atmosphere
Yong Seog Kim, Hongik University, Seoul, Korea

13.3: CaMgO (CMO) Film-Properties Study
Fangli Xing, Sichuan Shiji Shuanghong Display Device Co., Ltd., Beijing, China

13.4: Photoluminescent Properties of MgCaO for High-Xe PDPs
Wenjian Kuang, Southeast University, Nanjing, China

13.5L: Late-News Paper: Development of MgCaO Protective Layer of PDPs for Decreased Discharge Voltage
Takehiro Zukawa, Panasonic Plasma Display Co., Ltd., Osaka, Japan

Session 14: e-Paper II (Flexible Displays)
Tuesday, June 5, 2012 / 2:00 – 3:20 pm / Room 210B
Chair: Paul Drzaic, Apple, Inc.
Co-Chair: Makoto Omodani, Tokai University

14.1: Distinguished Paper: A 13.3-in, 200-dpi Flexible Electrophoretic Display Driven by OTFTs Manufactured
Using High-Resolution Offset Printing
Ryuto Akiyama, Sony Corp., Kanagawa, Japan

14.2: New Transparent Electrodes for Cholesteric LCDs
Mark Pellerite, 3M Co., Saint Paul, MN USA

14.3: Patterned Image Flexible Reflex Displays
Erica Moutbath, Kent Displays, Inc., Kent, OH USA

14.4: WITHDRAWN
Session 15: AMOLED Displays (Active-Matrix Devices)
Tuesday, June 5, 2012 / 3:40 – 5:00 pm / Ballroom East
Chair: Takatoshi Tsujimura, Konica Minolta Technology Center
Co-Chair: Arokia Nathan, University College London
15.1: Research, Development, and Application of Crystalline Oxide Semiconductor
    Jun Kayama, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
15.2: WITHDRAWN
15.3: Stabilized AMOLED Displays by Process Tuning and Backplane OLED Compensation
    Reza Chaji, IGNIS Innovation, Inc., Kitchener, Ontario, Canada
15.4: Backplane Process Technology for AMOLEDs with Bottom-Gate TFTs and Laser Annealing
    Tohru Saitoh, Panasonic Image Devices Development Center, Kyoto, Japan
15.5L: Late-News Paper: 4.0-in. High-Definition AMOLED Panel Employing Simultaneous Emission Driving Method
    Min Koo Han, Seoul National University, Seoul, Korea

Session 16: Blue-Phase Liquid Crystal 3 (Liquid-Crystal Technology)
Tuesday, June 5, 2012 / 3:40 – 5:00 pm / Ballroom West
Chair: Akihiro Mochizuki, I-CORE Technology, LLC
Co-Chair: Shunsuke Kobayashi, Tokyo University of Science
16.1: Hysteresis-Free Blue-Phase LCDs
    Linghui Rao, University of Central Florida, Orlando, FL USA
16.2: Crystalline OS-LCD Using Blue-Phase Liquid Crystal Having Characteristic Texture
    Takahiro Yamamoto, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
16.3: Polarization-Independent and Fast-Response Blue-Phase Liquid-Crystal Lens with a PEDOT:PSS Film
    Yi-fan Liu, University of Central Florida, Orlando, FL USA
16.4: Identification of Blue-Phase Liquid Crystal by CIE
    Yi-Fen Lan, AU Optronics Corp., Hsinchu, Taiwan

Session 17: Autostereoscopic 3D Displays I (3D / Systems)
Tuesday, June 5, 2012 / 3:40 – 5:00 pm / Room 205AB
Chair: K. Käläntär, Global Optical Solutions
Co-Chair: Han Ping D. Shieh, Display Institute, National Chiao Tung University
17.1: Invited Paper: Hardware and Software Technologies for Glasses-Free 3D TVs and PCs
    Goh Itoh, Toshiba Corp., Kanagawa, Japan
17.2: Large-Scale Color Omnidirectional-View 3D Display Based on Projector Array
    Xu Liu, Zhejiang University, Zhejiang, China
17.3: 3D Display Using Active Liquid-Crystal Parallax Barrier with Supersonic Position Detector
    Koji Kusunoki, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
17.4: A Novel Parallax LC Barrier for Temporally Interlaced Autostereoscopic 3D Display
    Yuchi Inoue, Sony Corp., Tokyo, Japan
17.5: High-Resolution Floating Autostereoscopic 3D Display Based on Iris-Plane-Dividing Technology
    Takahiro Ishinabe, Tohoku University, Sendai, Japan

Session 18: Advanced and 3D Display Applications (Applications / 3D)
Tuesday, June 5, 2012 / 3:40 – 5:00 pm / Room 205C
Chair: Gary W. Jones, Nanoquantum Corp.
Co-Chair: Jean-Noel Perbet, THALES Avionics
18.1: Invited Paper: Color-Accurate Monitors
    Adi Abileah, Planar Systems, Inc., Beaverton, OR USA
18.2: Sensing and Augmented-Reality Technologies for Mobile 3D Platforms
    Chang Yuan, Sharp Laboratories of America, Camas, WA USA
18.3: 3D Metrology System Based on a Bidirectional OLED Microdisplay
    Constanze Grassmann, Fraunhofer IOF, Jena, Germany
18.4L: Late-News Paper: OLED-Based Binocular Interactive See-Through HMD
    Rigo Herold, Fraunhofer IPMS, Dresden, Germany
18.5L: Late-News Paper: WUXGA Resolution 3D Stereoscopic Head-Mounted Full-Color AMOLED Microdisplay
    Ilyas Khayrullin, eMagin Corp., Hopewell Junction, NY USA

Session 19: Solid-State-Lighting Applications (Lighting /Applications)
Tuesday, June 5, 2012 / 3:40 – 5:00 pm / Room 210A
Chair: Gerard Rilly, Technicolor Research & Innovation
Co-Chair: Mike Hack, Universal Display Corp.
19.1: Invited Paper: From Backlight to Luminaire
Session 20: Flexible TFTs (Flexible Displays)
Tuesday, June 5, 2012 / 3:40 – 5:00 pm / Room 210B
Chair: Douglas Loy, Flexible Display Center, Arizona State University
Co-Chair: Shawn O'Rourke, DpiX, LLC
20.1: Invited Paper: Robust TFT Backplane for Flexible AMOLED
Jin Jang, Kyung Hee University, Seoul, Korea
20.2: Invited Paper: Reliability Improvement of Flexible AMOLED Based on Auxiliary Functional Film Technology
Jang Lin Chen, DTC/ITRI, Hsinchu, Taiwan
20.3: Organic Passivation Layer for Flexible TFTs
Chi-Shun Chan, AU Optronics Corp., Hsinchu, Taiwan
20.4: An 8-in. Oxide-TFT-Driven Flexible AMOLED Display with Solution-Processed Insulators
Toshihiro Yamamoto, NHK Science & Technology Research Laboratories, Tokyo, Japan

Session 21: OLED Displays I (OLEDs)
Wednesday, June 6, 2012 / 9:00 – 10:20 pm / Ballroom East
Chair: Eric W. Forsythe, Army Research Laboratory
Co-Chair: Yasunori Kijima, Sony Corp.
21.1: Electron-Transport Layers with Air-Stable Dopants for Display Applications
Jan Birnstock, Novaled AG, Dresden, Germany
21.2: A 55-in. FHD OLED TV Employing New Tandem WOLEDs
Chang-wook Han, LG Display Co., Ltd., Gyeonggido, Korea
21.3: Power-Efficient RGBW AMOLED Displays Incorporating Color-Down-Conversion Layers
Woo-Young So, AU Optronics Corp., Ewing, NJ USA
21.4L: Late-News Paper: Advanced Circular Polarizer by Using Coatable QWP Technology for Large-sized OLED Display Applications
Su Hyun Park, LG Display Co., Ltd., Gyeonggido, Korea

Session 22: Liquid-Crystal Alignment I (Liquid-Crystal Technology)
Wednesday, June 6, 2012 / 9:00 – 10:20 am / Ballroom West
Chair: Philip Chen, National Chiao Tung University
Co-Chair: Rumiko Yamaguchi, Akita University
22.1: Binary Alignment Pattern Induced by Single-Step Exposure of Laser-Beam Polarization Interference
Tan Li, Hong Kong University of Science & Technology, Kowloon, Hong Kong
22.2: Variable Liquid-Crystal Pretilt Angle Using Nano-Alignment Surfaces
Chung Yang Lee, Hong Kong University of Science & Technology, Kowloon, Hong Kong
22.3: Real Multi-Domain Reduced Color and Gamma Shift in Fringe-Field-Switching (FFS) Mode LCD with Photostimulation Method
Hung-Yu Wu, Chunghua Picture Tubes, Ltd., Taoyuan, Taiwan
22.4: Investigation of Curtain Mura in TFT-TN Panels after COG ACF Process
Sheng-Ya Wang, National Chiao Tung University, Tainan, Taiwan

Session 23: Autostereoscopic 3D Displays II (3D / Applications)
Wednesday, June 6, 2012 / 9:00 – 10:20 am / Room 205AB
Chair: Robert L. Donofrio, Display Device Consultants LLC.
Co-Chair: John Rupp, Motorola Solutions Inc.
23.1L: Late-News Paper: High-Resolution Time-Multiplexed Backlight with Tracking System for Multi-User-Applicable Wide-Viewing Autostereoscopic LCD
Che Hsuan Yang, National Chiao Tung University, Hsinchu, Taiwan
23.2: Design, Fabrication, and Characterization of Multi-View Glasses-Free 3D Displays
Manoj Nirmal, 3M Co., St. Paul, MN USA
23.3: Landscape/Portrait Dual-Mode Lens-Type 3D Display Using a 2D Lens Array
Ching-tsuan Chang, AU Optronics Corp., Hsinchu, Taiwan
23.4: Hybrid 230-ppi 3D Display Using Time-Sequential OCB-LCD
Daichi Suzuki, Toshiba Mobile Displays, Ishikawa, Japan

Session 24: Novel and Emerging Display Applications (Applications)
Wednesday, June 6, 2012 / 9:00 — 10:20 am / Room 205C
Chair: Susan K. Jones, Consultant
Co-Chair: Ian Underwood, University of Edinburgh
24.1: Detection of Ionizing Radiation by Plasma-Panel Sensors: Cosmic Muons, Ion Beams, and Cancer Therapy
Peter Friedman, Integrated Sensors LLC, Toledo, OH USA
24.2: A Novel 5.8-in. Dual-Display Design and Optimization
Tsung-Ning Niu, AU Optronics Corp., Hsinchu, Taiwan
24.3: Optical Rewritable Diffraction Grating Made of Photoalignment Materials
Jiatong Sun, Hong Kong University of Science and Technology, Kowloon, Hong Kong
24.4: WITHDRAWN
24.5: Late-News Paper: A Novel User Interface for Flexible AMOLEDs
Chao Chiu Liang, ITRI, Hsinchu, Taiwan

Session 25: Optical Touch Panels (Touch and Interactive Display / Active-Matrix Devices)
Wednesday, June 6, 2012 / 9:00 — 10:20 am / Room 210A
Chair: Steven Bathiche, Microsoft
Co-Chair: Jerzy Kanicki, University of Michigan
25.1: Characteristics of IR Photosensor Using a-SiGe for In-Cell Touch Panels
Sang Youn Han, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea
25.2: Photosensor TFT Based on Double Metal-Oxide Layer for In-Cell Remote Touch Screen
Seung-Eon Ahn, Samsung Advanced Institute of Technology, Gyeonggi-do, Korea
25.3: Flexible In-cell Infrared a-Si Sensor
Wen-Jen Chiang, ITRI, Hsinchu, Taiwan

Session 26: Flexible-Display Manufacturing (Flexible Displays / Display Manufacturing)
Wednesday, June 6, 2012 / 9:00 — 10:20 am / Room 210B
Chair: Nick Colaneri, Flexible Display Center, Arizona State University
Co-Chair: Elliott Schlam, Elliott Schlam Associates
Sean Garner, Corning Incorporated, Corning, NY USA
26.2: Flexible Hybrid Substrates of Roll-to-Roll Manufacturing for Flexible-Display Application
Yung Hui Yeh, ITRI, Hsinchu, Taiwan
26.3: Development of Nanoporous Anodic Aluminum Oxide (np-AAO) Thin Template on PET/Ti Flexible Substrate for Flexible LCD Application
Chitsung Hong, National Tsing Hua University, Hsinchu, Taiwan
26.4: Transparent Conductive Film Nb2O5/Ag/IZO with an Anti-Reflection Design
Ywh-Tarng Leu, Electronics and Optoelectronics Research Laboratories, Hsinchu, Taiwan

Session 27: OLED Displays II (OLEDs)
Wednesday, June 6, 2012 / 10:40 am — 12:00 pm / Ballroom East
Chair: Tariq A. Ali, eMagin Corp.
Co-Chair: Jang Hyuk Kwon, Kyung Hee University
Jeremy Burroughes, CDT Ltd., Cambridge, UK
27.2: High-Definition 458-ppi OLED with Logic Circuit Using Low-Temperature Single-Crystal-Silicon (LTSS) TFT Backplane Driven by 2.5-V Single Power Supply
Hideto Ohnuma, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
27.3: Stable White OLED Device for 3D-Compatible Head-Mounted Display
Emiko Kambe, Sony Corp., Kanagawa, Japan
27.4: A 13.5-in. QFHD Top-Emission OLED Display Using Crystalline-OS FET
Shingo Eguchi, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

Session 28: Liquid-Crystal Alignment II (Liquid-Crystal Technology)
Wednesday, June 6, 2012 / 10:40 am — 12:00 pm / Ballroom West
Chair: Shui Chih Alan Lien, TCL Group
Co-Chair: Jenn Jia Su, AU Optronics Corp.
28.1: Premium Picture Quality by Super-Multi-Domain Polymer-Sustained Alignment LCD Technology
Ko-Wei Chen, AU Optronics Corp., Hsinchu, Taiwan
28.2: Analysis of Two Types of Multi-Domain IPS Viewing-Angle Characteristics
Shinich Nishida, NLT Technologies, Ltd., Kawasaki, Japan
28.3: WITHDRAWN
Session 29: LC Lens for 3D (3D / Liquid-Crystal Technology)
Wednesday, June 6, 2012 / 10:40 am – 12:00 pm / Room 205AB
Chair: Yasufumi Iimura, Tokyo University of Agriculture & Technology
Co-Chair: Gang Xu, Tianma Microelectronics
29.1: Overview of Factors Affecting Lens Performance for 3D Displays
Liwei Li, Kent State University, Kent, OH USA
29.2: Distinguished Student Paper: Tunable Polymer Localized Liquid-Crystal Lenses for Autostereoscopic 3D Displays
Lu Lu, Kent State University, Kent, OH USA
29.3: Crosstalk Reduction of 3D LCDs Based on the Analysis of LC Graded-Index (GRIN) Lens Factors
Shinichiro Oka, Hitachi Displays, Ltd., Chiba, Japan

Session 30: Video Processing for 2D/3D (Display Electronics / 3D)
Wednesday, June 6, 2012 / 10:40 am – 12:00 pm / Room 205C
Chair: Nikhil Balram, Ricoh Innovations, Inc.
Co-Chair: Mainak Biswas, Marvell Semiconductor
Taiichiro Kurita, National Institute of Information and Communications Technology, Tokyo, Japan
30.2: UD-Resolution 240-Hz LCD-TV Display System with High-Speed Driving
Bong-Hyun You, Seoul National University, Gwanak-gu, Korea
30.3: Invited Paper: Improvement of 3D Image Quality by Using High Frame Rate from 3D Cameras to 3D Displays
Yoshikiko Kuroki, Sony Corp., Kanagawa, Japan
30.4: Trilateral Filter for Depth-Map Interpolation in 3D Video
Ilsoon Lim, Samsung Advanced Institute of Technology, Gyeonggi-do, Korea

Session 31: Enabling Technologies for Touch (Touch and Interactive Displays)
Wednesday, June 6, 2012 / 10:40 am – 12:00 pm / Room 210A
Chair: Bob Senior, IsiQiri Interface Technologies GmbH
Co-Chair: Byeong Koo Kim, LG Display Co., Ltd.
31.1: Invited Paper: Programmable Electrostatic Surface for Tactile Perceptions
Zoran Radijovic, Nokia Research Center, Cambridge, UK
31.2: Eliminating Ghost Touches on a Self-Capacitive Touch Screen
Philippe Conti, THALES Avionics, le Haillan, France
31.3: Bare-Finger 3D Touch with Multi-Wavelength Sensing
Hsuan-He Fang, National Chiao Tung University, Hsinchu, Taiwan

Session 32: Printed Displays and Electronics I (Printed Displays and Electronic / Flexible Displays)
Wednesday, June 6, 2012 / 10:40 am – 12:00 pm / Room 210B
Chair: Jang Lin Chen, DTC/ITRI
Co-Chair: Wei Lung Liau, AU Optronics Corp.
32.1: Invited Paper: Printing Technologies for Organic TFT Array for Electronic Paper
Ryohei Matsubara, Toppan Printing Co., Ltd., Saitama, Japan
32.2: Invited Paper: Printable Organic TFT Backplanes for Mass-Produced Displays
Mark James, Merck Chemicals, Ltd., Southampton, UK
32.3: Invited Paper: Large-Area Flexible Organic AMLED Pixel Circuits Driven by Printed Organic Floating-Gate Transistors
Tsuyoshi Sekitani, University of Tokyo, Tokyo, Japan
32.4: Invited Paper: Broad Implications Arising from Novel Photo-Sintering Process and Conductive Inks for Printed Electronics
Stan Farnsworth, NovaCentrix, Austin, TX USA

Session 33: OLED Devices I (OLEDs)
Wednesday, June 6, 2012 / 3:30 – 4:50 pm / Ballroom East
Chair: Chishio Hosokawa, Idemitsu Kosan Co., Ltd.
Co-Chair: Denis Y. Konidakov, DuPont Displays
33.1: Invited Paper: A Novel Triplet Green Host System and Charge Balance Tuning for High-Performance Singlet Blue Devices
Christof Pflumm, Merck KGaA, Frankfurt, Germany
33.2: Solution-Processed Hole-Injection and Hole-Transport Layers: Design Features for OLED Manufacturing
Neetu Chopra, Plextronics, Inc., Pittsburgh, PA USA
33.3: Distinguished Student Paper: Improved Blue-Phosphorescent OLEDs with a Linearly Graded Mixed-Host Architecture
33.4: A New Class of Host Materials for Blue-Phosphorescent Organic EL Devices
Mark Brown, CSIRO Materials Science and Engineering, Clayton, Australia

Session 34: Ferroelectric and Antiferroelectric LC Effects (Liquid-Crystal Technology)
Wednesday, June 6, 2012 / 3:30 – 4:50 pm / Ballroom West
Chair: Michael Wand, LC Vision, LLC
34.1: Deformed-Helix Ferroelectric Display with Low Driving Voltage and Fast Response Time
Qi Guo, Hong Kong University of Science and Technology, Kowloon, Hong Kong
34.2: Electro-Optical Response of Compensated Helix Ferroelectric: Continuous Gray Scale, Fastest Response, and Lowest Control Voltage Demonstrated to Date
Igor Kompanets, Lebedev Physical Institute of RAS, Moscow, Russia
34.3: Fast Orthoconic Antiferroelectric Liquid Crystals for Field-Sequential-Color Applications
Mattias Wessling, Orhocone AB, Gothenburg, Sweden

Session 35: 3D Lightfield Imaging and Displays (3D / Display Systems)
Wednesday, June 6, 2012 / 3:30 – 4:50 pm / Room 205AB
Chair: Jean-Pierre Guillou, Apple, Inc.
Co-Chair: Brian T. Schowengerdt, University of Washington
35.1: Invited Paper: Envisioning a Light-Field Ecosystem
Kurt Akeley, Lytro, Mountain View, CA USA
35.2: Generation Method of Orthoscopic Elemental Image Array from a Sparse Camera Array
Qiong Hua Wang, Sichuan University, Chengdu, China
35.3: Computational Photography
William Freeman, Massachusetts Institute of Technology, Boston, MA USA

Session 36: Image-Quality Enhancement (Display Electronics)
Wednesday, June 6, 2012 / 3:30 pm – 4:50 pm / Room 205C
Chair: Haruhiko Okumura, Toshiba Corp.
Co-Chair: Hyounsgik Nam, Kyung Hee University
36.1: Invited Paper: Trends of Future Image-Quality Enhancement with Case Studies
Jaehye You, Hongik University, Seoul, Korea
36.2: Enhanced Local Pixel Compensation with Clipping Suppression and Global Luminance Preservation
Daniel Schafer, Saarland University Campus, Saarbruecken, Germany
36.3: Adaptive Denoising Based on Image Region Analysis
Sung-In Cho, Pohang University of Science and Technology, Pohang, Korea
36.4: Subjective and Objective Visual-Quality Evaluation of 4K Video Using AVC and HEVC Compression
Sachin Deshpande, Sharp Laboratories of America, Camas, WA USA

Session 37: Projected-Capacitive Touch Panels (Touch and Interactive Displays)
Wednesday, June 6, 2012 / 3:30 – 4:50 pm / Room 210A
Chair: Jefferson Han, Perceptive Pixel
Co-Chair: Joo Hyung Lee, Samsung Mobile Display
37.1: Distinguished Paper: An In-Cell-Capable Capacitive Touch-Screen Controller with 41-dB SNR and Integrated Display Driver IC for 480 x 864 LTPS Displays
Murat Ozbas, Synaptics, Inc., Rochester, NY USA
37.2: A 10.4-in. On-Cell Touch-Panel LCD with Correlated Noise Subtraction Method
Hiroshi Haga, NLT Technologies, Ltd., Kanagawa, Japan
37.3: A 10-Touch Capacitive-Touch Sensor Circuit with the Time-Domain Input-Node Isolation.
Jae-seung Lee, Pohang University of Science and Technology, Gyeonggi-do, Korea

Session 38: Printed Displays and Electronics II (Printed Displays and Electronics/Flexible Displays)
Wednesday, June 6, 2012 / 3:30 – 4:50 pm / Room 210B
Chair: Jin Jang, Kyung Hee University
Co-Chair: Ruiqing Ma, Universal Display Corp.
38.1: Highly Thermally Stable OFETs Fabricated with Liquid-Crystalline Organic Semiconductors
Hiroaki Ino, Tokyo Institute of Technology, Yokohama, Japan
38.2: Color Filters on a Flexible Glass Substrate Fabricated by Roll-to-Roll Processing
Takayoshi Nirengi, Dai-Nippon Printing Co., Ltd., Chiba, Japan
Session 39: OLED Devices II (OLEDs)
Thursday, June 7, 2012 / 9:00 – 10:20 am / Ballroom East
Chair: Sven Murano, Novaled AG
Co-Chair: Chang Hee Lee, Seoul National University
39.1: Invited Paper: Efficient Color-Tunable Light Sources Using a Combination of Transparent and Non-Transparent OLEDs
Jeong Il Lee, ETRI, Daejeon, Korea
39.2: Full Integration of Transflective Hybrid Device Consisting of PDLC, OLEDs, and OPV
Wei-Fu Chang, Yuan Ze University, New Taipei, Taiwan
39.3: A Mirror Display Based on AMOLEDs and Transflective Mirror Designs
Hsing-Hung Hsieh, AU Optronics Corp., Hsinchu, Taiwan
39.4: Dual Efficiency Enhancement by Delayed Fluorescence and Dipole Orientation in High-Efficiency Fluorescent OLEDs
Jongwook Park, Catholic University of Korea, Gyeonggi-do, Korea

Session 40: Cholesteric LCDs (Liquid-Crystal Technology)
Thursday, June 7, 2012 / 9:00 – 10:20 am / Ballroom West
Chair: Birendra Bahadur, Rockwell Collins
Co-Chair: Xiao-Yang Huang, Ebulent Technologies Corp.
40.1: Invited Paper: Ultrafast High-Optical-Contrast Flexoelectric Displays for Video Frame Rates
Harry Coles, University of Cambridge, Cambridge, UK
40.2: Novel Phototunable Chiral Materials for Single-Layered Color Cholesteric Display
Chih-Lung Chin, ITRI, Hsinchu, Taiwan
40.3: Distinguished Student Paper: Dual-Mode Reflective Cholesteric Display
Rafael Zola, Kent State University, Kent, OH USA
40.4: Generation of Uniform and Multitude Gray Scales on Cholesteric LCD by Using a Fast Low-Voltage Driving Scheme
Qiang Fu, Saarland University, Saarbruecken, Saarland, Germany

Session 41: Solid-State Lighting I (Lighting)
Thursday, June 7, 2012 / 9:00 – 10:20 am / Room 205AB
Chair: Mike Hack, Universal Display Corp.
Co-Chair: Takatoshi Tsujimura, Konica Minolta Technology Center
41.1: Invited Paper: Embracing Variability: Color Consistency of LED-Based Solutions
Benoît Bataillou, Philips, Miribel, France
41.2: Invited Paper: Phosphor Mixtures for White LEDs
Holger Winkler, Merck KGaA, Darmstadt, Germany
41.3: Printed Inorganic LEDs for Solid-State Lighting
William Ray, Nth Degree Technologies, Tempe, AZ USA
41.4: Daylight Matching with Blended-CCT LED Lamp
Michael Miller, Air Force Institute of Technology, Xenia, OH USA

Session 42: Intra-Panel Interface (Display Electronics)
Thursday, June 7, 2012 / 9:00 – 10:20 am / Room 205C
Chair: Taesung Kim, Apple, Inc.
Co-Chair: Ya Hsiang Tai, National Chiao Tung University
42.1: Distinguished Paper: A 1.4-Gbps Intra-Panel Interface for Chip-on-Glass TFT-LCD Applications
Dongmyung Lee, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea
42.2: LCD-TV System with 2.8-Gbps/ lane Intra-Panel Interface for 3D-TV Applications
Ju Ho Kim, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea
42.3: A 720-Channel Source Driver with a 2.5-Gbps Point-to-Point Interface
Hui-Wen Miao, Raydium Semiconductor Corp., Hsinchu, Taiwan
42.4: The Integrated-Stream Protocol (iSP) Interface with Clock-Embedded Scheme for Next-Generation TFT-LCD Applications
Rung-Yuan Chang, AU Optronics Corp., Hsinchu, Taiwan

Session 43: Driving Methods for Low-Power Displays (Green Technology)
Thursday, June 7, 2012 / 9:00 – 10:20 am / Room 210A
Chair: Rashmi Rao, Qualcomm MEMS Technologies
43.1: Low-Power Display System Driven by Utilizing a Technique Using Crystalline IGZO Transistor
Tatsuji Nishijima, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

43.2: Energy and Area-Efficient Driving Scheme in Cholesteric LCD by Embedded Fully Symmetric Self-Biased Switched Capacitor
Ke-Horng Chen, National Chiao Tung University, Hsinchu, Taiwan

43.3: Intensity Modulation of Light Sources for Gray Scales in Projection Displays
T. N. Ruckmangathan, Raman Research Institute, Bangalore, India

Session 44: Display Manufacturing: Flexible Processes (Display Manufacturing / Flexible Displays)
Thursday, June 7, 2012 / 9:00 – 10:20 am / Room 210B
Chair: Elliott Schlam, Elliott Schlam Associates
Co-Chair: David C. Morton, Army Research Laboratory
44.1: Distinguished Paper: High-Transmission Optically Matched Conductive Film with Sub-Wavelength Nano-Structures
Kazuya Hayashibe, Sony Corp., Tokyo, Japan

44.2: WITHDRAWN

44.4: Flexible LCDs Fabricated with a Slit Coater
Munehiro Kimura, Nagaoka University of Technology, Niigata, Japan

44.5: Roll-to-Roll UV Embossing-Process-Based Sub-Wavelength Gratings for Backlights
Chao-Wei Liu, National Tsing Hua University, Hsinchu, Taiwan

Session 45: Solid-State Lighting II (OLED / Lighting)
Thursday, June 7, 2012 / 10:40 – 12:00 pm / Ballroom East
Chair: Cheng Chen, Apple, Inc.
Co-Chair: Lee-Mi Do, ETRI
45.1: Invited Paper: Commercialization of World’s First All-Phosphorescent OLED Product for Lighting Application
Takatoshi Tsuchimura, Konica Minolta Technology Center, Tokyo, Japan

45.2: Invited Paper: Extremely High-Performance White OLEDs for Lighting
Takaya Kamoda, Panasonic Electric Works Co., Ltd., Japan

45.3: Efficient Phosphorescent OLEDs for Warm-White and Cool-White Lighting Applications
Xin Xu, Universal Display Corp., Trenton, NJ USA

Session 46: Novel Non-Emissive Displays (Liquid-Crystal Technology)
Thursday, June 7, 2012 / 10:40 – 2:00 pm / Ballroom West
Chair: Hoi-Sing Kwok, Hong Kong University of Science & Technology
Co-Chair: Cheng Chen, Apple, Inc.
46.1: Invited Paper: Aperture-Variable Pixels for Optical Switches and Displays
Hongwen Ren, University of Central Florida, Orlando, FL USA

46.2: A Novel Color Display Based on Voltage-Stretchable Liquid-Crystal Droplet
Su Xu, University of Central Florida, Orlando, FL USA

46.3: Hysteresis-Free Pixel Switching of Electrowetting Displays
Paul Vermeulen, Samsung LCD Netherlands R&D Center, Eindhoven, The Netherlands

Session 47: 3D and Multiview Projection (3D / Projection)
Thursday, June 7, 2012 / 10:40 – 12:00 pm / Room 205AB
Chair: Frederic J. Kahn, Kahn International
Co-Chair: Matthew S. Brennesholtz, Insight Media
47.1: Invited Paper: 3D Digital Cinema Technologies
Miller Schuck, RealID, Boulder, CO USA

47.2: A Multi-View Display Using a Single Projector and Screen
Senshi Nasu, Sendai National Colleges of Technology, Sendai, Japan

47.3: Color-Separation 3D in a Laser Projection System Using a 2D MEMS Scanner
JungHoon Seo, LG Electronics, Co., Ltd., Seoul, Korea

47.4: Invited Paper: 3D Displays Using Scanning Laser Projection
Brian Schowengerdt, University of Washington, Seattle, WA USA

Session 48: Display Driving Techniques (Display Electronics)
Thursday, June 7, 2012 / 10:40 – 12:00 pm / Room 205C
Chair: Richard McCartney, National Semiconductor
Co-Chair: Seung Woo Lee, Kyung Hee University
Achin Bhovnivik, Intel Corp., Santa Clara, CA USA
A Novel Current-Mode Driving Technique for Real-Time Image Compensation in AMOLED Displays

Jun-Hyeok Yang, KAIST, Daejeon, Korea

WITHDRAWN

Invited Paper: Driving Circuit Integration Using Depletion-Mode Oxide TFTs
KeeChan Park, Konkuk University, Seoul, Korea

Session 49: Low-Power Displays and Materials (Green Technology)
Thursday, June 7, 2012 / 10:40 — 12:00 pm / Room 210A
Chair: Rashmi Rao, Qualcomm MEMS Technologies

Invited Paper: Low-Power High-Color-Gamut PenTile RGBWC Hybrid FSC-LCD
Candice Brown Elliott, Nouvoyance, Sebastopol, CA USA

Invited Paper: Greener Displays through Integrated Optics: Display Backlights Using One Film
John Wheatley, 3M Co., Saint Paul, MN USA

Synthesis of High-Quality CdSe Quantum Dots with Tunable Size
Wang Chun, BOE Technology Co., Ltd, Hefei, China

Session 50: Display Manufacturing: Lamination & Testing (Display Manufacturing)
Thursday, June 7, 2012 / 10:40 — 12:00 pm / Room 210B
Chair: Ion Bita, Qualcomm MEMS Technologies
Co-Chair: Bradley Bowden, Corning Incorporated

Invited Paper: Optical Bonding: Critical Technical Challenges for Performance, Manufacturing, and Supply Chain
Dan Doyle, TOCA Technology, Inc., Mesa, AZ USA

Identify the Failure Criteria of Touch-Panel Glass in Ball-Drop Test
Mao Hsing Lin, Chimei Innolux Corp., Tainan, Taiwan

Finite-Element Analysis of Ball Drop on LCD Panels
K. Hemanth Vepakomma, Corning Incorporated, Corning, NY USA

Analysis of Gravity Mura under Thermal Expansion of LCD Cells
Jen-Chieh Li, National Taiwan University, Taipei, Taiwan

Session 51: Solid-State Lighting III (OLED / Lighting)
Thursday, June 7, 2012 / 1:30 — 2:50 pm / Ballroom East
Chair: Michael Weaver, Universal Display Corp.
Co-Chair: Chishio Hosokawa, Idemitsu Kosan Co., Ltd.

Invited Paper: Optical Design of Enhanced Light-Extraction Efficiency in Multi-Stacked OLEDs Coupled with a High-Refractive-Index Medium and Back-Cavity Structure
Akiyoshi Mikami, Kanazawa Institute of Technology, Ishikawa, Japan

Outcoupling Enhancement Mechanism Investigation on Highly Efficient PIN OLEDs Using Crystallizing-Evaporation-Processed Organic Outcoupling Layers
Sven Murano, Novaled AG, Dresden, Germany

Top-Emitting OLEDs for Solid-State Lighting: High Efficiency by Optical Modelling
Bjorn Lussem, TU Dresden, Dresden, Germany

High-Efficiency White OLEDs with Built-Up Outcoupling Substrate
Kazuyuki Yamae, Panasonic Electric Works Co., Ltd., Osaka, Japan

Session 52: Electrophoretic Displays (Active-Matrix Devices)
Thursday, June 7, 2012 / 1:30 — 2:50 pm / Ballroom West
Chair: Man Wong, Hong Kong University of Science & Technology
Co-Chair: Tohru Nishibe, Japan Display Central Inc.

Transparent AMOLED and Its Integration with an Electrophoretic Display
Hsing-Hung Hsieh, AU Optronics Corp., Hsinchu, Taiwan

A Backplane Fabricated by Evaporation Printing for the Production of a Cost-Competitive Electrophoretic e-Paper Display
Charles Harrigal, Advantech US, Inc, Pittsburgh, PA USA

A Prototype System-on-Glass 4-in. WVGA Electrophoretic Display
P.S. Kuo, AU Optronics Corp., Hsinchu, Taiwan

Ultra-Low-Power Color Reflective Display
Brad Benson, Hewlett-Packard, Corvallis, OR USA

Session 53: Lens Design for 3D Displays (3D / Display Systems)
Thursday, June 7, 2012 / 1:30 — 2:50 pm / Room 205AB
Chair: K. Källantäri, Global Optical Solutions
Session 54: Color (Applied Vision)
Thursday, June 7, 2012 / 1:30 – 2:50 pm / Room 205C
Chair: Louis D. Silverstein, VCD Sciences, Inc.
Co-Chair: Senfar Wen, Yuan Ze University
4.1: Color Prediction in an LCD Using RGB-LED Backlights
Seo Young Choi, Samsung Advanced Institute of Technology, Yongin, Korea
4.2: Investigation of Chromaticity Discrimination Ellipses for Displays
Senfar Wen, Yuan Ze University, Chung-Li, Taiwan
4.3: Novel Real-Time and Bi-Directional Color Simulator for Dichromacy and Trichromacy on Smartphones
Sakauchi Ohzuka, Kagoshima University, Kagoshima, Japan
4.4: Binocular Color-Rivalry Thresholds of Complex Images
Pei-Li Sun, National Taiwan University of Science and Technology, Taipei, Taiwan

Session 55: Green Optics for Display Systems (Display Systems / Green Technology)
Thursday, June 7, 2012 / 1:30 – 2:50 pm / Room 210A
Chair: Masaru Suzuki, SKC Haas Display Films
Co-Chair: Jean-Pierre Guillou, Apple, Inc.
Akihiro Tagaya, Keio University, Kawasaki, Japan
55.2: Shaping Arbitrary Angular Luminance Distribution through Directional LGP and Single Inverted-Concave Lenticular Film for Blue-Phase LCD BLU Hybrid Structure
K Käläntär, Global Optical Solutions, Tokyo, Japan
Chi Wen Chang, National Chiao Tung University, Hsinchu, Taiwan
55.4: Pixelized Backlight with Polarization Recycling for LCDs
Chun-Ruei Yang, National Tsing Hua University, Hsinchu, Taiwan
55.5: Late-News Paper: A Theoretical Consideration of a Flat Panel Display Based on Integrated Optical Devices
Hyungseok Pang, LG Display Co., Ltd., Gyeonggi-do, Korea

Session 56: Display Manufacturing: Oxide TFTs (Display Manufacturing / Active-Matrix Devices)
Thursday, June 7, 2012 / 1:30 – 2:50 pm / Room 210B
Chair: Fan Luo, AU Optronics Corp.
Co-Chair: Roger G. Stewart, Sourland Mountain Associates
56.1: Invited Paper: Manufacturing Issues for Oxide TFT Technologies for Large-Sized AMOLED Displays
Toshiaki Arai, Sony Corp., Kanagawa, Japan
56.2: Deposition of a-InGaZnOx by Rotation Magnet Sputtering
Akihiko Hiroe, Tokyo Electron, Ltd., Nirasaki City, Japan
56.3: Ultra-Flexible a-IGZO TFT
Zungway Pei, National Chung Hsing University, Taichung, Taiwan
56.4: Dual-Gate IGZO TFT for Threshold-Voltage Compensation in AMOLED Pixel Circuits
Lu Sheng Chou, National Chiao Tung University, Hsinchu, Taiwan

Session 57: Solid-State Lighting IV (OLED / Lighting)
Thursday, June 7, 2012 / 3:10 – 4:30 pm / Ballroom East
Chair: Yasunori Kijima, Sony Corp.
Co-Chair: Sven Murano, Novaled AG
57.1: Invited Paper: Flexible OLEDs for Lighting Applications
Ruqing Ma, Universal Display Corp., Ewing, NJ USA
57.2: Invited Paper: White OLEDs for General Lighting
Junji Kido, Yamagata University, Yamagata, Japan
57.3: Invited Paper: Host- and Charge-Transport Materials for High-Efficiency Deep-Blue-Phosphorescent OLEDs
Session 58: High-Resolution TVs (Active-Matrix Devices)
Thursday, June 7, 2012 / 3:10 — 4:30 pm / Ballroom West
Chair: Roger G. Stewart, Sourland Mountain Associates
Co-Chair: Chin Hsin (Fred) Chen, National Chaio Tung University
58.1: Distinguished Paper: Development of Super Hi-Vision 8K x 4K Direct-View LCD for Next-Generation TV
Takeshi Kumakura, Sharp Corp., Nara, Japan
58.2: Distinguished Paper: Implementation of 240-Hz 55-in. Ultra-Definition LCD Driven by Oxide-Semiconductor TFTs with Copper Signal Lines
Namyoung Gong, LG Display Co., Ltd., Gyeonggi-do, Korea
58.3: Pixel Design for Improved 3D TV with One-Dimensional Integral-Imaging Method
Rieko Fukushima, Toshiba Corp., Kawasaki, Japan

Session 59: Volumetric, Lightfield, and Holographic Displays (3D / Display Systems)
Thursday, June 7, 2012 / 3:10 — 4:30 pm / Room 205AB
Chair: Brian T. Schowengerdt, University of Washington
Co-Chair: K. Käläntär, Global Optical Solutions
59.1: A 3D Volumetric Display Using a Rim-Driven Varifocal Beamsplitter and High-Speed DLP Backlit LCD
Lanny Smoot, Disney Research, Glendale, CA USA
59.2: Three-Dimensional Floating Light-Field Display Based on Spliced Multi-LCDs
Haifeng Li, Zhejiang University, Hangzhou, China
59.3: Fast Hologram Pattern Generation by Removing Concentric Redundancy
Seok Lee, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea
59.4: Real-Time Dynamic Holographic Display Based on a Liquid-Crystal Thin Film
Hongyue Gao, Virginia Tech, Blacksburg, VA USA
59.5: Invited Paper: Visual Perception and Holographic Displays
James Barabas, MIT Media Lab, Cambridge, MA USA

Session 60: Image Quality and Viewing Experience (Applied Vision)
Thursday, June 7, 2012 / 3:10 — 4:30 pm / Room 205C
Chair: Tom Kimpe, BARCO Medical Imaging Division
Co-Chair: Sakuichi Ohtsuka, Kagoshima University
60.1: Control of Subjective Depth by Quantified Monocular Depth Cues of Contrast and Spatial Frequencies
Yasuhide Hyodo, Sony Corp., Tokyo, Japan
60.2: Minimizing Veiling-Glare Degradation in the High-Luminance-Range Visualization of Medical Images
Aldo Badano, FDA, Silver Spring, MD USA
60.3: Investigation on Viewing-Angle Requirements and Glare with Respect to Size of Flat-Panel TV Displays
Youichi Igarashi, Panasonic Liquid Crystal Display Co., Ltd., Chiba, Japan

Session 61: Cool Lasers for Projection (Projection)
Thursday, June 7, 2012 / 3:10 — 4:30 pm / Room 210A
Chair: David A. Eccles, Rockwell Collins
Co-Chair: Ming Hsien Wu, Hamamatsu Corp
61.1: Watt-Level Compact Green-Laser Module for a Laser Display
Chang-Qing Xu, McMaster University, Hamilton, Ontario, Canada
61.2: Cooling Design of High-Power-Laser Diode Array Using Duct Flow and Vapor Chamber Method
Kuan-Yu Chen, Chilin Technology Co., Ltd., Tainan, Taiwan
61.3: Simulation and Measurement of Laser Speckle and Speckle Contrast
Wei-Feng Hsu, National Taipei University of Technology, Taipei, Taiwan
61.4: Wavelength Selection for Lasers and LEDs in Projection Systems
Matthew Brennesholtz, Insight Media, Norwalk, CT USA

Session 62: Display Manufacturing: Novel Devices & Green Technology (Display Manufacturing/Green Technology)
Thursday, June 7, 2012 / 3:10 — 4:30 pm / Room 210B
Chair: Toshiaki Arai, Sony Corp.
Co-Chair: Fan Luo, AU Optronics Corp.
(World LCD Industry Cooperation Committee)
Makoto Ohkura, Hitachi Displays, Ltd., Fuchu, Japan

62.2: Pixel-Controlling Substrate Fabricated by Embedding Millions of Silicon IC Chips on
Plastic Substrate and Self-Aligned Metal Interconnection Among Such IC Chips
Kieu Nguyen, Japan Advanced Institute of Science and Technology, Nomi, Japan

62.3: Production Considerations for Bistable D3 Electrowetting Displays
Frank Bartels, Advanced Display Technology, Dortmund, Germany

62.4: The Structure and Manufacturing Process of Large-Area Transparent Electrowetting Display
Yun-Sheng Ku, ITRI, Hsinchu, Taiwan

Session 63: FED and Emissive Devices (Emissive Displays)
Friday, June 8, 2012 / 9:00 – 10:20 am / Ballroom East
Chair: Soichiro Okuda, Okuda Engineering
Co-Chair: Hsing-Yao Chen, Chungwha Picture Tubes, Ltd.

Masayuki Nakamoto, Shizuoka University, Hamamatsu, Japan

63.2: Field-Emission Display with Homogenized Carbon-Nanotube Emitters Grown by
Resist-Assisted Patterning Process
Kyu Chang Park, Kyung Hee University, Seoul, Korea

63.3: Enhanced Cathodoluminescence of a Double Layer of Two Phosphors
Daniel Den Engelsen, Brunel University, Geldrop, The Netherlands

63.4: Extraction of the Location and the Energy Level of the Trap Using Random Telegraph Noise in
Ga-N Based LEDs
Jungjin Park, Seoul National University, Seoul, Korea

Session 64: High-Performance Mobile Displays (Active-Matrix Devices)
Friday, June 8, 2012 / 9:00 – 10:20 am / Ballroom West
Chair: Tohru Nishibe, Japan Display Central Inc.
Co-Chair: James Chang, Apple, Inc.

64.1: Invited Paper: Ultra-High-Resolution Mobile Displays
Tetsuya Kawamura, Toshiba Mobile Display Co. Ltd., Saitama, Japan

64.2: WITHDRAWN

64.3: High-Transmittance Slim-Border 720p a-Si TFT-LCD for Mobile-Display Applications
Wu-Liu Tsai, AU Optronics Corp., Hsinchu, Taiwan

64.4: Submicron Pixel Electrode Structure in IPS Mode
Joon Young Yang, LG Display Co., Ltd., Gyeonggi-do, Korea

Session 65: 3D Comfort (3D / Applied Vision)
Friday, June 8, 2012 / 9:00 – 10:20 am / Room 205AB
Chair: Eli Peli, Schepens Eye Research Institute, Harvard Medical School
Co-Chair: Yi Pat Huang, National Chiao Tung University

65.1: Effective Spatial Resolution of Temporally and Spatially Interlaced Stereo 3D Televisions
Martin Banks, University of California, Berkeley, Berkeley, CA USA

65.2: Effect of Viewing Region Satisfying Super Multi-View Condition in Integral Imaging
Byoungke Lee, Seoul National University, Seoul, Korea

65.3: An Ergonomic Evaluation of Stereoscopic and Deadzone-Free Autostereoscopic 3D Displays
Wei-Cheng Chao, AU Optronics Corp., Hsinchu, Taiwan

65.4: Eye-Fatigue Measurement for 3D Displays
Yueh-Yi Lai, ITRI, Hsinchu, Taiwan

Session 66: Novel Backlights (Display System / Lighting)
Friday, June 8, 2012 / 9:00 – 10:20 / Room 205C
Chair: Wei Chen, Apple, Inc.
Co-Chair: K. Käläntär, Global Optical Solutions

Quantum-Dot Enhancement Film
Jian Chen, Nanosys, Palo Alto, CA USA

66.2: Optimization of LED Arrangement for Extending LED Binning Range in Backlight System
Ping-Yen Chou, National Chiao Tung University, Hsinchu, Taiwan

66.3: Design of Color Backlight for High-Efficiency Display Using Optical Waveguide Gratings
Tong Zhang, Southeast University, Nanjing, China

66.4: High-Contrast Edge-Lit Frontlight Solution for Reflective Displays
Ion Bita, Qualcomm MEMS Technologies, San Jose, CA USA
Session 67: Optical Components for Projection (Projection)
Friday, June 8, 2012 / 9:00 – 10:20 am / Room 210A
Chair: Alan Sobel, Flatscreen Technologies Corp.
Co-Chair: Cheng-Huan Chen, National Tsing-Hua University
67.1: Ultra-Short-Throw Pico-Projector Including Two Plastic Prisms and A Convex Aspheric Mirror
Dong Hi Lee, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea
67.2: Distortion Correction Using a Freeform Lens for Projection onto a Non-Planar Surface
Haifeng Li, Zhejiang University, Hangzhou, China
67.3: LCoS Using a Fringe-Field Color Filter
Yuet-Wing Li, Himax Display, Inc., Tainan, Taiwan
67.4: Submillisecond-Response Blue-Phase Liquid Crystal for Color-Sequential Projection Displays
Shih He, University of Central Florida, Orlando, FL USA

Session 68: Display Manufacturing: Fabrication Processes and Solid-State Lighting (Display Manufacturing / Lighting)
Friday, June 8, 2012 / 9:00 – 10:20 am / Room 210B
Chair: Greg Gibson, FAS Holdings Group
Co-Chair: Tian Xiao, CBRITE, Inc.
68.1: Novel Light-Scattering Glass Substrate for the Enhancement of OLED Lighting Outcoupling Efficiency
Naoya Wada, Asahi Glass Co., Ltd., Yokohama, Japan
68.2: Lowering the Cost for OLED Lighting Manufacturing
Heike Landgraf, Applied Materials, Alzenau, Germany
68.3: Printed Conformal Interconnects to HB-LED Die on Three-Dimensional Surfaces Using Aerosol Jet Technology
Kurt Christenson, Optomec, Saint Paul, MN, USA
68.4L: Late-News Paper: High-Resolution Printing of OLED Displays
Makoto Ando, Sony Corp., Kanagawa, Japan

Session 69: Lighting Devices (Emissive Displays)
Friday, June 8, 2012 / 10:40 am – 12:00 pm / Ballroom East
Chair: Ryuichi Murai, AYC Devices Development Center / Panasonic
Co-Chair: Harm Tolner, Tolner Technology
69.1: Invited Paper: Recent Developments in LED Phosphors for Lighting and Display Applications
Ravi Rao, Specialty Phosphors, Inc., Cupertino, CA USA
69.2: WITHDRAWN
69.3: Invited Paper: Current Issues in Quantum-Dot Phosphors for LEDs
Duk Young Jeon, KAIST, Daejeon, Korea

Session 70: Novel Display Devices (Active-Matrix Devices)
Friday, June 8, 2012 / 10:40 am – 12:00 pm / Ballroom West
Chair: Russel A. Martin, Qualcomm MEMS Technologies
Co-Chair: Hugo L. Steemers, Pixel Qi
70.1: Touch-Interactive High-Power-Efficiency AMOLED Display with Energy Recycling and Self-Calibration Capabilities
Reza Chaji, IGNIS Innovation, Inc., Kitchener, Ontario, Canada
70.2: Impact of Gate Oxide Thickness and Channel Length on Junction-Less Poly-Si TFTs
Hoeng Chih Lin, National Chiao Tung University, Hsinchu, Taiwan
70.3: High-Performance and Low-Temperature Process n-Channel Organic TFT and Its Applications
Shih-Chuan Chiang, Chunghua Picture Tubes, Ltd., Hsinchu, Taiwan
70.4L: Late-News Paper: 0.5-in. XGA Micro-OLED Display on Silicon Backplane with High-Definition Technologies
Yusuke Onoyama, Sony Corp., Kanagawa, Japan

Session 71: 3D Perception (3D / Applied Vision)
Friday, June 8, 2012 / 10:40 am – 12:00 pm / Room 205AB
Chair: Jennifer Gille, Qualcomm MEMS Technologies
Co-Chair: Martin Banks, University of California, Berkeley
71.1: Invited Paper: Front-of-Screen Performance Comparison of Various Multi-View Autostereoscopic 3D Display Technologies
Erno Langendijk, Philips CL-BG TV Innovation Site Eindhoven, Eindhoven, The Netherlands
Session 72: Head-Up and Direct-View Laser Phosphors Displays (Projection / Display Systems)
Friday, June 8, 2012 / 10:40 am – 12:00 pm / Room 210A
Chair: Sergei Yakovenko, LensVector, Inc.
Co-Chair: Fujio Okumura, NEC Corporation
72.1: Compact and High-Efficiency Head-Up Display for Vehicle Application
Wen-Wei Yang, National Tsing Hua University, Hsinchu, Taiwan
72.2: Depth Perception Effects of a Monocular Heads-Up-Display on a Moving Automobile Under Real-Space Condition
Takashi Sasaki, Toshiba Corp., Kawasaki, Japan
72.3: A Rear-Projection-Type Laser Phosphor Display with a High-Reflection Wide-Scan-Angle Scanner
Osamu Ishibashi, NEC Corp., Kanagawa, Japan
72.4L: Late-News Paper: Micro-Mirror System-Level Synchronization Notes
Sharon Hornstein, Maradin Technologies, Ltd., Pardes Hanna, Israel
72.5L: Late-News Paper: Introducing Scalable, Freeform, Immersive, High-Definition Laser Phosphor Displays
Roger Hajjar, Prysm, Inc., San Jose, CA USA

Session 73: Display Manufacturing: Substrates (Display Manufacturing)
Friday, June 8, 2012 / 10:40 am – 12:00 pm / Room 210B
Chair: Bradley Bowden, Corning Incorporated
Co-Chair: Don Carkner, Research in Motion
73.1: Role of Glass in Manufacturing: The Next Generation of Advanced Displays
Peter Bocko, Corning Incorporated, Corning, NY USA
73.2: A 3D Cover Glass for Mobile Devices
Prakash Panda, Corning Incorporated, Corning, NY USA
73.3: Invited Paper: Four-Point Bending of AMLCD Panel
Jamie Westbrook, Corning Incorporated, Corning, NY USA

Session 74: Late-News Session: Flexible Displays (Flexible)
Thursday, June 7, 2012 / 10:40 am – 12:00 pm / Room 210C
Chair: Deng-Ke Yang, Kent State University.
Co-Chair: Robert Zehner, Lab126
74.1L: Late-News Paper: Oxide TFTs and Color-Filter-Array Technology for Flexible Top-Emission White OLED Display
Makoto Noda, Sony Corp., Kanagawa, Japan
74.2L: Late-News Paper: 11.7-in. Flexible AMOLED Display Driven by a-IGZO TFTs on Plastic Substrate
Hajime Yamaguchi, Toshiba Corp., Kanagawa, Japan
74.3L: Late-News Paper: Flexible Color Active-Matrix EP Display Using Low Distortion OTFT Backplanes
Paul Cain, Plastic Logic, Ltd., Cambridge, UK

Session 75: Late-News Session: Projection Displays (Projection)
Thursday, June 7, 2012 / 1:30 – 2:50 PM / Room 210C
Chair: Ming Hsien Wu, Hamamatsu Corp
Co-Chair: Matthew S. Brennesholtz, Insight Media
75.1L: Late-News Paper: Human Representation System: A Multi-View Display Using a QDA Screen with Multiple Cameras
Shiro Ozawa, NTT Corp., Kanagawa, Japan
75.2L: Late-News Paper: A Passive-Matrix Inorganic LED Array as a Projection Source
Vincent Lee, Columbia University, New York, NY USA
75.3L: Late-News Paper: Ultra-Compact Laser-Based Pico-Projector Architectures
Navef Abaageel, Luxini, Inc., Westborough, MA USA
75.4L: Late-News Paper: The Path to 100 lm/W in Embedded Projection: A New DLP-Based Imaging Architecture Using MEMS Spatial-Light-Modulator-Based Diffractive Illumination and UV Laser-Pumped Phosphor or Quantum-Dot Down-conversion
Adrian Cable, Light Blue Optics, San Jose, CA USA

Poster Session
Thursday, June 7, 2012 / 5:00 – 8:00 pm / Exhibit Hall B1
3D
P.1: Integral Imaging Using Fly's Eye Lens Made with 3D Printer
Kazuhisa Yanaka, Kanagawa Institute of Technology, Kanagawa, Japan

P.2: Turn-Type Full-Color 3D Display System Using Arrays of LEDs
Kazuo Miyakoshi, Kanazawa Institute of Technology, Nonoichi, Japan

P.3: A Simple Measure to Reduce Optical Crosstalk in an Autostereoscopic Display with Field-Sequential Method and Directional Backlight System
Akinori Hayashi, Eizo Nanao Corp., Ishikawa, Japan

P.4: Analysis of Directional Backlight Autostereoscopic Display Timing Crosstalk
Yung-Yu Hsieh, Chunghwa Picture Tubes, Ltd., Taoyuan, Taiwan

P.158 LC Barrier with a Shifted ITO Electrode Structure for Additional Sweet Spots
Kihyung Kang, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea

Active-Matrix Devices
P.5: A Current Feedback AMOLED Display Based on Top-Gate a-Si TFTs
Patrick Schalberger, University of Stuttgart, Stuttgart, Germany

P.6: A New Integrated Scan Driver Using Oxide TFTs with Negative Threshold Voltage
Jin Huh, KAIST, Daejeon, Korea

P.7: A New 3-TFT Current-Scaling Pixel Circuit for AMOLED Displays
Chih Lung Lin, National Cheng Kung University, Taiwan

P.8: Low-Power Gate Driver Circuits for Narrow-Bezel Panel Application
Po Tsun Liu, National Chiao Tung University, Hsinchu, Taiwan

P.9: Bridged Grain MIC Poly-Si TFTs with Sputtered AIOx as Gate Dielectrics
Wei Zhou, Hong Kong University of Science and Technology, Kowloon, Hong Kong

P.10: The Reliability Improvement of High-Temperature SOR Driving with Advanced Dual-Gate TFT Application
Kwang Jo Hwang, LG Display Co., Ltd., Gyeonggi-do, Korea

P.11: A New Five-Mask-Count Process for Fabrication of Poly-Si Nanowire-Channel CMOS Inverters
Horng Chih Lin, National Chiao Tung University, Hsinchu, Taiwan

P.12: A Self-Aligned Bottom-Gate LTPS Backplanes without Ion-Implantation Process
Arihnu Kanegae, Panasonic Image Devices Development Center, Kyoto, Japan

P.13: High-Performance Ink-Jet-Printed TFTs on Solution-Wetting Polymer-Gate Dielectric Layer
Woong Kang, University of Tokyo, Tokyo, Japan

P.14: a-IGZO TFT-Based Pixel Circuits for AMOLED Displays
Hojin Lee, Soongsil University, Seoul, Korea

P.15: WITHDRAWN

P.16: A 3-TFT OLED Pixel Circuit for High Stability with In-Pixel Current Source
Ting Liu, Princeton University, Princeton, NJ

P.17: Performance Enhancement of Solution-Processed Zn-Sn-O TFTs Using High-Pressure Annealing
Hyeon Jae Kim, Yonsei University, Seoul, Korea

P.18: Low-Power and Small-Sized Scan Driver Using Amorphous-Oxide TFTs
Chung-Pyung Yoon, Hanyang University, Seoul, Korea

P.19: A New Small-Sized Integrated Scan and Emission Driver for Compact AMOLED Displays
Jin Huh, KAIST, Daejeon, Korea

P.20: A Universal Circuit Model for Optical Response Simulation of AMLCDs
Seung Woo Lee, Kyung Hee University, Seoul, Korea

P.21: High-Performance Solution-Processed IZTO TFT at a Maximum Process Temperature of $230^\circ C$
Jin Jang, Kyung Hee University, Seoul, Korea

P.22: Metal-Oxide TFT with Mobility and Stability Competitive with LTPS-TFT
Gang Yu, CBRITE, Inc., Goleta, CA USA

P.139L: Late-News Poster: AC Gate-Drain-Bias Stress Study of Amorphous Indium Gallium Zinc Oxide TFTs for GOA Applications
Shih-Chie Huang, AU Optronics Corp., Hsinchu, Taiwan

P.140L: Late-News Poster: Crystallization of Amorphous-Silicon Films on Flexible Glass by Blue-Multi-Diode Laser Annealing as a New LTPS
Takashi Noguchi, University of the Ryukyus, Okinawa, Japan

P.141L: Late-News Poster: Characterization of Physical Parameter-Based Reliability on the Negative-Bias Illumination Stress with Wavelength-Dependence in Amorphous-Silicon TFTs
Hyun Kwang Jeong, Kookmin University, Seoul, Korea

Applications
P.23: Application of Digital Micro-Hinge Display Technology in Biosensing
Wallen Mphepo, Beijing University, Beijing, China

P.24: Generation of 3D image on Optically Rewritable LCD
Lu Wang, Hong Kong University of Science and Technology, Kowloon, Hong Kong

P.25: 3D Surface Profilometry for Accurate Extraction of Depth Profile with LC Phase Modulator
Hak Rin Kim, Kyungpook National University, Daegu, Korea

Richard Flasck, RAF Electronics Corp., San Ramon, CA USA
P.27: An Unplugged Electronic Display
Chu-Hao Tu, AU Optronics Corp., Hsinchu, Taiwan

P.142L: Late-News Poster: Time-of-Flight-Based 3D Image Sensing Using Holographically Projected Structured Illumination
Krzysztof Nguyen, University of Edinburgh, Edinburgh, UK

P.143L: Late-News Poster: A New Characterization of 3D Performance for Multi-View Autostereoscopic Displays
Sung-Min Jung, LG Display Co., Ltd, Gyeonggi-do, Korea

P.144L: Late-News Poster: Novel Transparent LCD with Tunable Transparency
Ching-Huan Lin, AU Optronics Corp., Hsinchu, Taiwan

Applied Vision

P.28: The Major Factors of Viewing Comfort on Autostereoscopic Displays by Taguchi Experiment Design
Pei-Chia Wang, National Tsing-Hua University, Hsinchu, Taiwan

P.29: Critical Level of Crosstalk for Visual Perception of 3D and Viewing-Space Mapping
Kenji Nakao, Toshiba Mobile Display Co., Ltd., Ishikawa, Japan

P.30: Study on Improvement of Visual Abilities by Watching Stereoscopic Image
Yuki Fukai, Toyo University, Saitama, Japan

P.31: Theory and Application of Paired Comparison Methods in Display and Lighting Preference Study
Yuning Zhang, Southeast University, Nanjing, China

P.32: Distinguished Student Poster Paper: Comparison of Simultaneous Measurement of Lens Accommodation and Convergence in Natural Vision and 3D Vision
Tomoki Shiomi, Nagoya University, Nagoya, Japan

P.33: Measurements of a Prototype See-Through Near-to-Eye Display with Diffractive Light Guides
Toni Jarvenpaa, Nokia Research Center, Tampere, Finland

P.34: The Effects of Illuminance on Visibility of Reading Tablet Devices and e-Paper
Shunta Sano, Nagoya University, Nagoya, Japan

Display Electronics

P.36: An Automatic Channel-Selectable Smart LED-Backlight Driver IC for Various Scaled-Sized LCDs
Younwoong Chung, Fairchild Semiconductor, Bucheon-si, Korea

P.37: Single-Inductor Dual-Output Digital Controller for TFT-LCD Driver
Wen-kuen Liu, ILI Technology Corp., Jhubei City, Taiwan

P.38: WITHDRAWN

P.39: DC-DC Converters with Controllable Latch-Up Protection Technique for LCD Mobile-Display Panels
Seung-Jung Lee, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea

P.40: Scalable Intra-Panel Interface (SIPI): A Point-to-Point Interface for LCDs
Kevin Yuan, Parade Technologies, San Jose, CA

P.41: A New Column-Driver IC Employing a Quaternary Digital-to-Analog Convension Method for Active-Matrix Displays
Woo-nyoung Lee, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea

P.42: A Skew-Less Point-to-Point Mini-LVDS (SPPmL) Interface for TFT-LCD Applications
Wen Huang, AU Optronics Corp., Hsinchu, Taiwan

Display Manufacturing

P.49: Analysis of Light Leakage Caused by Photo-Spacer for Fringe-Field-Switching LCD
Wei Zhang, Beijing Optoelectronics Technology Co., Ltd., Beijing, China
Low-k Acryl Resin as Planarization Layer on TFT-LCD
Qiyu Shen, Beijing Optoelectronics Technology Co., Ltd., Beijing, China

Low-Temperature Crystallization of a-InGaZnO Films
Akiko Hiroe, Tokyo Electron. Ltd., Nirasaki, Japan

A Simulation Assisted Neural-Networks Forecasting System for TFT-LCD Color-Filter Fabs
PoTsang Huang, Beijing Optoelectronic Technology Co., Ltd., Beijing, China

Pressure-Sensitive Adhesives to Reduce the Light Leakage of LCDs
Satoshi Yanai, Keio University, Kanagawa, Japan

Contact-Printing Technologies for Encapsulation of Flexible OLEDs
Ryoseong Kwon Ju, Korea University, Seoul, Korea

High-Performance Sealant in One-Drop Filling Process of Mobile TFT-LCD Products
Ang Xiao, Beijing Optoelectronics Technology Co., Ltd., Beijing, China

Simulation-Based Look-Ahead Release Planning for Color-Filter Fabs
James Chen, National Taiwan University of Science and Technology, Taipei, Taiwan

Development of a Photochromic Circular Polarizer for OLEDs
Norio Koma, Sanyo Epson Imaging Devices Corp., Gifu, Japan

Electrical Properties of Oxide TFT with an IGZO/AlOx Stack Grown by Solution-Based Non-Vacuum Mist Chemical Vapor Deposition
Toshiyuki Kawaharamura, Kochi University of Technology, Kami, Japan

A Method for Quantifying Hot-Spot Mura in Edge-Type BLUs
Che Chang Hu, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

A Novel Evaluation Method for 3D Display Viewing Zone
Wen Hui Chang, National Taiwan University, Taipei, Taiwan

Accelerating Phase-Shifting Technique in Quantitative Differential Interference Contrast System for Critical Dimension Measurement of TFT Substrate
Wen-Chiauan Lin, National Tsing Hua University, Hsinchu, Taiwan

Starfield Contrast: A Quantitative Method to Determine the Contrast of Displays with Dynamic Backlights
Joe Miseli, Oracle, Redwood City, CA USA

Comparison of Temporal Properties of Various Glass-Type 3D Displays
Shau-Wei Hsu, ITRI, Hsinchu, Taiwan

The Measurement of the Properties of the Liquid Crystals in a Multi-Domain VA Panel
Nakho Choi, Samsung Electronics Co., Ltd., Gyeonggi-do, Korea

The Evaluation of Gray-to-Gray Crosstalk for Time-Sequential Stereoscopic Display
Fu-Hao Chen, ITRI, Hsinchu, Taiwan

Optimization Design of Irradiance Array for the Direct-Lit LED Backlight
Zhenrong Zheng, Zhejiang University, Hangzhou, China

Fabrication Method of Fresnel Lens Based on Electrohydrodynamic Instability
Chang Jae Yu, Hanyang University, Seoul, Korea

A Novel Highly Collimating Backlight Module Using a Double Wedge-Shaped Lightguide Plate
Wang Jun, Shanghai Jiang Tong University, Shanghai, China

Accelerated-Life-Test (ALT) Evaluation Method for Backlight LEDs
I-Hsun Hsieh, AU Optronics Corp., Hsinchu, Taiwan

Enhanced Photoluminescence Property of Single-Molecular Precursor CdSe/ZnS Quantum Rod
Wei Lei, Southeast University, Nanjing, Jiangsu, China

Distinguished Student Poster Paper: Dye-Bridged Hybrid Materials for Robust and High-Performance Wavelength Converter of White LEDs
Byeong-Soo Bae, KAIST, Daejeon, Korea

Study on Improvement of Luminous Efficacy in Pulse-Driven LEDs
Takahiro Ari, Toyo University, Kagawa, Japan

The Effects of Orthogonal Solvent of Colloidal Quantum Dots on QD-LED Device
Yohan Kim, Dankook University, Gyeonggi-do, Korea

Synthesis and Photoluminescence Properties of Vertically Well-Aligned ZnO Nanostructures
Chaoyang Li, Kochi University of Technology, Kami, Japan

Efficient Red, Green, and Blue QD-LEDs Fabricated with the QD Transplanting Process on a Common Hole-Transport Layer
Chang Hee Lee, Seoul National University, Seoul, Korea

Properties of Different Cold Cathodes on the Efficiency in FEDs
Alireza Khorami, IRIB University, Tehran, Iran

Characteristics of Two-Level Sustain Waveform in ACPDPs
Jungwon Kang, Dankook University, Gyeonggi-do, Korea

WITHDRAWN

WITHDRAWN
Flexible Displays

P.76: Resistive Switching Memory Device Based on a-AZTO Film for Flexible Electronics Applications
Po Tsun Liu, National Chiao Tung University, Hsinchu, Taiwan

P.77: Image Sticking in a Flexible LCD Stabilized with Polymers: Surface Gliding Effect
Ji-Hoon Lee, Pusan National University, Pusan, Korea

P.78: Electrophotogetic Hybrid Particles Synthesis by Dispersion Polymerization in Organic Media: Towards Electrophotogetic Display Applications
Antoine Charbonnier, LCPO/Université Bordeaux, Talence, France

P.79: Principal Component Analysis on Characterizing Full-Color Electrophotogetic Display
Yen Hung Lu, National Chiao Tung University, Hsinchu, Taiwan

P.80: Glass Cloth-Reinforced Transparent Film for Plastic Displays
Hirotsugu Kishimoto, Panasonic Electric Works, Co., Ltd, Osaka, Japan

P.81: Lateral Driving Phenomena in Electrophotogetic Displays
Po-Chun Hsu, National Chiao Tung University, Hsinchu, Taiwan

Yen-Huei Lai, AU Optronics Corp., Hsinchu, Taiwan

P.149L: Late-News Poster: Uniaxially Cracked ITO on PET Substrate and Its Application in Flexible Displays
John West, Kent State University, Kent, OH USA

P.150L: Late-News Poster: A Novel Handling Method of Ultra-Thin Glass for Thin and Flexible Displays
Kenichi Ebata, Asahi Glass Co., Ltd, Yokohama, Japan

P.159L: Late-News Poster: A Liquid Crystal Based Contact Lens Display Using PEDOT:PSS and Obliquely Evaporated SiO₂
Jelle De Smet, CMST-imec, Zwijnaarde, Belgium

Liquid-Crystal Technology

Blue Phase

P.84: Thermal Switchable Bistable Cholesteric Blue-Phase LCD
Tsung Hsien Lin, National Sun Yat Sen University, Kaohsiung, Taiwan

P.85: A Novel Transflective Display Using Blue-Phase Liquid Crystal
Jian Gang Lu, Shanghai Jiao Tong University, Shanghai, China

P.86: A Viewing-Angle-Controllable Blue-Phase LCD
Qiong Hua Wang, Sichuan University, Chengdu, China

P.87: Ultra-High-Transmittance Blue-Phase LCD with Double In-Plane-Switching Electrodes
Chao PIng Chen, Infovision Optoelectronics Co., Ltd., Jiangyu, China

P.88: High-Transmittance Polymer-Stabilized Blue-Phase LCD with Fringe-Field-Switching Electrodes
Jae Hoon Kim, Hanyang University, Seoul, Korea

P.90: Surface Pinning Effect on Blue-Phase Liquid Crystal
Seung Hee Lee, Chonbuk National University, Jeonbuk-do, Korea

Liquid-Crystal Alignment

P.91: Hysteresis Reduction in EO Characteristics of Photoaligned IPS-LCDs Using Polymer-Surface-Stabilized Method
Yasufumi Iimura, Tokyo University of Agriculture & Technology, Tokyo, Japan

P.92: Distinguished Student Poster Paper: A 2-msec Nematic Liquid-Crystal Mode without Alignment Layers
Tae Hoon Yoon, Pusan National University, Busan, Korea

P.93: Structure and Properties of Azo Dye Films for Photoalignment and Photochromic Applications
Victor Belyaev, Moscow Region State University, Moscow, Russia

P.94: Nano-Particle-Induced VA-LCD
Seung Hee Lee, Chonbuk National University, Jeonbuk-do, Korea

P.95: Novel Rubbing Cloth Providing an Alignment Layer with Low Pretilt Angle and Large Azimuthal Anchoring Energy
Shoichi Ishihara, Osaka Institute of Technology, Osaka, Japan

P.137: Measurement of the LC Pretilt Angle and Polar Anchoring in Cells with Homogeneous and Inhomogeneous LC Director Configuration and Weak Anchoring on Organosilicon Aligning Films
Victor Belyaev, Moscow Region State University, Moscow, Russia

Liquid-Crystal Modes

P.96: Stable Chiral Hybrid In-Plane-Switching Mode for Transparent Display
Chang Jae Yu, Hanyang University, Seoul, Korea

P.97: Electrode Structure for High-Transmittance IPS Mode
Tae Hoon Yoon, Pusan National University, Busan, Korea

P.98: UV Aligned IPS-LCD for High-Resolution Smart Displays
Han Jin Ahn, LG Display Co., Ltd., Gyeonggi-do, Korea  
P.99: Fast Nematic Liquid-Crystal Device Using Hybrid Driving Scheme
Pan Fan, Hong Kong University of Science and Technology, Kowloon, Hong Kong

Jae Hoon Kim, Hanyang University, Seoul, Korea  
P.101: The Reduction of Temperature Effect on Cholesteric LCDs
Jin Seong Giwaeg, Yeungnam University, Gyeongsan, Korea

Ritsu Kamoto, Micro Analysis Lab., Inc., Shiga, Japan  
P.104: Refractive-Index Distribution Analysis of Liquid-Crystal Graded-Index (GRIN) Lens for Autostereoscopic 2D/3D Switchable Displays

Optical Elements
P.105: Fast Switchable Grating Based on Ferroelectric Liquid Crystal
Ying Ma, Hong Kong University of Science and Technology, Kowloon, Hong Kong

Lachezar Komitov, Göteborg University, Gothenburg, Sweden  
P.107: Characterization and Development of Phase-Modulated Liquid-Crystal Devices Using ZnO Nanowire Array Electrodes
Qing Li, Southeast University, Jiangsu, China  
P.110: Light Extraction of OLEDs by Defective Hexagonal-Close-Packed Array
Franky So, University of Florida, Gainesville, FL USA

OLEDs
P.108: Improved Performances in Phosphorescent OLEDs Using Solution-Processed Vanadium Pentoxide as a Hole-Injection Layer
Chang Hee Lee, Seoul National University, Seoul, Korea

Chung-Chih Wu, National Taiwan University, Taipei, Taiwan

Young Hoon Son, Kyung Hee University, Seoul, Korea

Chung Hee Lee, Seoul National University, Seoul, Korea

Pei-Kuen Wei, Academia Sinica, Taipei, Taiwan

Chang Hee Lee, National Taiwan University, Taipei, Taiwan

Hiroyasu Inoue, Zeon Corp., Kanagawa, Japan

Jeng-Ren Jiang, National Taiwan University, Taipei, Taiwan

Pei-Kuen Wei, Academia Sinica, Taipei, Taiwan

Hai-Ching Su, National Taiwan University, Tainan, Taiwan

Pei-Kuen Wei, Academia Sinica, Taipei, Taiwan

Byung Doo Chin, Dankook University, Yongin, Korea

Chuan-Yun Chen, Yuan Ze University, Tainan, Taiwan

Tien-Lung Chiu, Yuan Ze University, Tainan, Taiwan

Ink-Jet-Printable Composite Electrode and Device Architectures for Inverted Phosphorescent OLEDs
Byung Doo Chin, Dankook University, Yongin, Korea

Colorful Reflective OLED without Bias
Hai-Ching Su, National Taiwan University, Tainan, Taiwan

Luminous and Conversion-Efficiency Improvement in OLED/OPV Tandem Device with Omnidirectional Antireflection Nanopillars
Pei-Kuen Wei, Academia Sinica, Taipei, Taiwan

Lifetime Measurement and Reliability on the Storage of Thin-Film Encapsulated PIN OLEDs
Tony Maindron, CEA/LETI, Grenoble, France

Effect of Electrical Aging on Reliability of Solution in OLEDs
Hyon-Ae Park, SungKyunkwan University, Gyeonggi-do, Korea

Improvement of Coupling Efficiency of OLEDs by Using Centered-Hollow Micro-Lens-Array Film Together with Triangular Grooves
Jong-Ren Jiang, National Taiwan University, Taipei, Taiwan

Outcoupling of Waveguide Modes and Surface Plasmon Polaritons in OLEDs
Kyung Cheol Choi, KAIST, Daejeon, Korea

Transient Electroluminescence of Phosphorescent OLEDs with Mixed-Host System
Heekyung Kim, Samsung Advanced Institute of Technology, Gyeonggi-do, Korea
P.128: Solution-Processable Polymer OLED Lighting Panels with 25-lm/W Efficiency
Richard Wilson, CDT, Ltd., Cambridge, UK
P.151L: Late-News Poster: Transmissive Low Outgassing Organic Insulator Suitable for Various OLED Displays
Hiroaki Shindou, ZEON Corp., Kanagawa, Japan
P.152L: Late-News Poster: Self-Refreshable Lighting Device Using Liquid OLED Material
Chang Hoon Shin, Kyushu University, Fukuoka, Japan
P.153L: Late-News Poster: Vacuum Deposition of OLEDs with Feature Sizes of 20 µm Using a Contact Shadow Mask Patterned In-Situ by Laser Ablation
Yoshitaka Kaiyama, University of Waterloo, Waterloo, Ontario, Canada
P.154L: Late-News Poster: High-Efficacy OLED Panel with High-Mobility Electron-Transport Layers for New Lighting Applications
Keiji Sugi, Toshiba Corp., Kawasaki, Japan
P.155L: Late-News Poster: Low-Voltage High-Efficiency White Phosphorescent Organic Light-Emitting Devices
Jin-Sheng Lin, ITRI, Hsinchu, Taiwan

Projection
P.129: Speckle Contrast Analysis at Different Locations in the Image Produced by a Laser Projection System
Yan-Shuo Chang, National Taiwan University, Taipei, Taiwan
P.130: Digital Micro-Hinge Button Projection Display Device
Wallen Mphepo, Beijing University, Beijing, China
P.131: Imagery Beyond the Screen Edge
Daniel Novy, MIT Media Lab, Cambridge, MA USA

Touch and Interactive Displays
P.132: Adding Proximity Detection to a Standard Analog-Resistive Touch Screen
Chauuki Rouaissia, Semtech Neuchatel Sarl, Neuchatel, Switzerland
P.133: On-Cell Projected-Capacitive Touch Sensor Embedded in IPS-LCD
Chun Wei Wu, BOE Technology Group Co., Ltd., Beijing, China
P.134: A High-SNR Area-Efficient Readout Circuit Using a Delta-Integration Method for Capacitive Touch-Screen Panels
Jun-Hyeok Yang, KAIST, Daejeon, Korea
P.135: An LCD System with Depth-Sensing Capability Based on Coded Aperture Imaging
Sungjo Suh, Samsung Advanced Institute of Technology, Gyeonggi-do, Korea
P.136: Autostereoscopic Display Based on an In-Cell Touch Sensor Integrated with a Switchable Liquid-Crystal Lens
Zhangben Wu, Tianma, Shanghai, China
P.156L: Late-News Poster: Get In Contact: Interaction with Smart TVs from Anywhere in the Living Room
Robert Koepp, IsiQiri Interface Technologies GmbH, Hagenberg, Austria
P.157L: Late-News Poster: Cover Glass for Mobile Devices
Kazutaka Hayashi, Asahi Glass Co. Ltd., Tokyo, Japan