Session 1: Annual SID Business Meeting  
Tuesday, June 2 / 8:00 – 8:20 am / Ballroom 220A

Session 2: Opening Remarks / Keynote Addresses  
Tuesday, June 2 / 8:20 – 10:20 am / Ballroom 220A  
Chair: Shin-Tson Wu, University of Central Florida  
2.1: Keynote Address: The Booming Display Industry in China  
Mr. Dongsheng Li, Chairman and CEO of TCL Corporation, Shenzhen, China  
2.2: Keynote 2: TBA  
2.3: Keynote 3: TBA

Session 3: Wearable Display Systems (Wearable Displays / Display Systems / Projection)  
Tuesday, June 2 / 10:50 am – 12:10 pm / Ballroom 220B  
Chair: Brian Schowengerdt, University of Washington  
Co-Chair: Matthew Brennesholtz, Display Central  
3.1: Achieving Inconspicuous Head-Mounted-Display Optics  
Timothy Wong, 3M Co., St. Paul, MN, USA  
3.2: High-Image-Quality Wearable Displays with Fast-Response Liquid Crystal  
Zhenyue Luo, University of Central Florida, Orlando, FL, USA  
3.3: Single-Mirror IMOD Display for Practical Wearable Devices  
Tallis Chang, Qualcomm MEMS Technologies, Inc., San Jose, CA, USA

Session 4: Flexible Display Manufacturing (Display Manufacturing)  
Tuesday, June 2 / 10:50 am – 12:10 pm / Ballroom 220C  
Chair: Bradley Bowden, Corning Incorporated  
Co-Chair: Chiwoo Kim, Samsung Display  
4.1: Apparatus for Manufacturing Flexible OLED Displays: Adoption of Transfer Technology  
Satoru Idojiri, Advanced Film Device, Inc., Tochigi, Japan  
4.2: Study of ACF Bonding Technology in Flexible Display Module Packages  
Yen Lai, AU Optronics Corp., Hsinchu, Taiwan, ROC  
4.3: Ultra-Thin LTPS TFT-LCD by Using Glass-on-Carrier Technology  
Shun-Ping Chiao, AU Optronics Corp., Hsinchu, Taiwan, ROC  
4.4: Dimension Control of a Color Filter Fabricated by Using a Transfer Method  
Tadahiro Fursukawa, Yamagata University, Yamagata, Japan

Session 5: Image Quality of Displays (Applied Vision/Human Factors)  
Tuesday, June 2 / 10:50 am – 12:10 pm / Room LL20A  
Chair: Sakuichi Ohtsuka, Kagoshima University  
Co-Chair: David Hoffman, Samsung Semiconductor  
5.1: Influence of Pixel Density on Image Quality of Smartphone Displays  
Yuzo Hisatake, Japan Display, Inc., Tokyo, Japan  
5.2: Simulation of Color-Breakup Perception Using Eye-Tracking Data  
Keita Hirai, Chiba University, Chiba, Japan  
5.3: Extending the Flicker Visibility Metric to a Range of Mean Luminance  
Andrew Watson, NASA Ames Research Center, Moffett Field, CA, USA  
5.4: Subpixel Rendering for a High-Resolution OLED Display with Low-Resolution Photomasks  
Hui-Chun Lin, National Taiwan University of Science and Technology, Taipei, Taiwan, ROC

Session 6: Novel Display Applications I (Applications)  
Tuesday, June 2 / 10:50 am – 12:10 pm / Room LL20BC  
Chair: Ian Underwood, University of Edinburgh  
Co-Chair: Jean-Noel Perbet, THALES Avionics  
6.1: A New Application of a Touch-Screen Display for Data Transfer  
Philippe Cont, THALES Avionics SAS, Le Haillan, France  
6.2: Hybrid-Type Temperature Sensors Using TFTs  
Mutsu Kimura, Ryukoku University, Otsu, Japan  
6.3: Adaptable Light Beaming and Shaping Using an LED Matrix and Fresnel Lens Array  
Feixia Wang, Southeast University, Nanjing, China
6.4: Local Tone-Mapping-Based Dynamic Backlight Control Algorithm  
Viacheslav Chesnokov, Apical Ltd., London, UK

Session 7: OLED Driving Techniques (Display Electronics)  
Tuesday, June 2 / 10:50 am – 12:10 pm / Room LL20D  
Chair: Wei Yao, Apple, Inc.  
Co-Chair: Dick McCartney, Consultant

7.1: Invited Paper: Novel OLED Display Technology for Large-Sized UHD OLED TVs  
Hong-Jae Shin, LG Display Co., Ltd., Gyeonggi-do, South Korea

7.2: A Pixel Structure Using a Switching Error-Reduction Method for High-Image-Quality AMOLED Displays  
Oh-Kyong Kwon, LG Display Co., Ltd., Seoul, South Korea

7.3: Depletion-Mode Oxide-TFT Shift Register with Wide Operating Frequency Range for AMOLED Displays  
Inhyo Han, LG Display Co., Ltd., Gyeonggi-do, South Korea

7.4: A Slim Border Design for Wearable Displays: Using a Novel P-Type Shift Register and an Optimal Layout Arrangement  
Yung-Sheng Tsai, AU Optronics Corp., Taiwan, ROC

Session 8: Quantum-Dot Materials (Emissive Displays / Disruptive Materials)  
Tuesday, June 2 / 10:50 am – 12:10 pm / Room LL20EF  
Chair: Seth Coe-Sullivan, QD Vision, Inc.  
Co-Chair: Tomokazu Shiga, The University of Electro-Communications

8.1: Invited Paper: Alignment of Quantum Rods  
Masaki Hasegawa, Merck, Ltd., Japan, Kanagawa, Japan

8.2: Semiconductor Quantum Rods for Display Applications  
Ehud Shavit, Qlight Nanotech, Ltd., Jerusalem, Israel

8.3: Next-Generation Display Technology: Quantum-Dot LEDs  
Jesse Manders, NanoPhotonic, Gainesville, FL, USA

Session 9: Wearable Displays: Direct View (Wearable Displays / e-Paper and Flexible Displays)  
Tuesday, June 2 / 2:00 – 3:20 pm / Ballroom 220B  
Chair: Ruiqing (Ray) Ma, Universal Display Corp.  
Co-Chair: Yongtaek Hong, Seoul National University

Zhenan Bao, Stanford University, Stanford, CA, USA

9.2: A Novel Lamination Process for Flexible AMOLED Encapsulation  
Wang Tao, BOE Technology Group Co., Ltd., Beijing, China

9.3: The First Flexible LCD Applied to a Wearable Smart Device  
Wen-Yuan Li, AU Optronics Corp., Hsinchu, Taiwan, ROC

9.4: Stretchable 45 x 80 RGB-LED Display Using Meander Wiring Technology  
Hideki Ohmae, Panasonic Corp., Moriguchi, Japan

Session 10: OLED Encapsulation and Reliability (Display Manufacturing)  
Tuesday, June 2 / 2:00 – 3:20 pm / Ballroom 220C  
Chair: Ion Bita, Apple, Inc.  
Co-Chair: Dawei Wang, BOE Technology Group Co., Ltd.

John Fahlteich, Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP, Dresden, Germany

10.2: High-Performance Barrier Films for Flexible Organic Display and Lighting Applications  
Jyrki Kimmel, Nokia Technologies, Tampere, Finland

10.3: An Empirical Analysis of the Factors Effecting the Reliability of AMOLED Displays  
Jang-Yeon Kwon, Yonsei University, Incheon, South Korea

10.4: Non-Contact Current Measurements for AMOLED Backplanes Using Electron-Beam-Induced Plasma Probes  
Daniel Toet, Photon Dynamics, an Orbotech Company, San Jose, CA, USA

Session 11: Human Factors and Applications (Applied Vision/Human Factors)  
Tuesday, June 2 / 2:00 – 3:20 pm / Room LL20A  
Chair: Yi-Pai Huang, National Chiao Tung University  
Co-Chair: Takashi Shibata, Tokyo University of Social Welfare

Fang-Cheng Lin, Display Institute, National Chiao Tung University, Hsinchu, Taiwan, ROC

11.2: Usefulness of Stereoscopic 3D Images in Elementary-School Classes  
Takashi Shibata, Tokyo University of Social Welfare, Gunma, Japan

11.3: Readability Performance and Subjective Appraisal of Curved Monitors  
Hyeon-Jeong Suk, KAIST, Daejeon, South Korea

11.4: Study on the Saccadic-Eye-Movement Metric of Visual Fatigue Induced by 3D Displays  
Yue Liu, Beijing Institute of Technology, Beijing, China
Session 12: Novel Display Applications II (Applications)  
Tuesday, June 2 / 2:00 – 3:20 pm / Room LL20BC  
Chair: Gary Jones, Nanoquantum Corp.  
Co-Chair: Bao-Jen Pong, ITRI

12.1: **Invited Paper**: Simulating Human Vision and Vision-Correcting Displays  
Fu-Chung Huang, University of California at Berkeley, Berkeley, CA, USA

12.2: Flame-Resistant and Heat-Resistant Lithium-Ion Battery Used to Operate Heat-Resistant OLEDs  
Teppei Oguni, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

12.3: Creation of a Wavy Ag Nanowire Network and Its Implication for Transparent Electrodes with Robust Stretchability  
Jun Beom Pyo, KIST, Seoul, South Korea

12.4: A Liquid-Crystal Biosensor for Liver Diseases  
Sihui He, University of Central Florida, Orlando, FL, USA

Session 13: Advanced Displays and Imaging (Display Electronics)  
Tuesday, June 2 / 2:00 – 3:30 pm / Room LL20D  
Chair: Haruhiko Okumura, Toshiba Corp.  
Co-Chair: Achin Bhowmik, Intel Corp.

13.1: **Invited Paper**: Head-Up Displays with MEMS Laser Microprojection Technology  
Nicolas Abelé, Lemoptix SA, Lausanne, Switzerland

13.2: 360º Multi-Faced Tracking and Interaction Using a Panoramic Camera  
Li Feng, Zhejiang University, Hangzhou, China

13.3: Efficient Direct Light-Field Rendering for Autostereoscopic 3D Displays  
Young Ju Jeong, Samsung Advanced Institute of Technology, Suwon, South Korea

13.4: An Electro-Optical Transfer Function with Improved Uniformity of Palette-Color Distribution in Absolute Color Space  
Senfar Wen, Yuan Ze University, Chung-Li, Taiwan, ROC

13.5L: **Late-News Paper**: A Simple Pixel Circuit for Ultra-High-Resolution AMOLED-on-Silicon (OLEDoS) Microdisplays with Highly Uniform Luminance  
Oh-Kyong Kwon, Hanyang University, Seoul, South Korea

Session 14: Photoluminescent Quantum Dots (Emissive Displays)  
Tuesday, June 2 / 2:00 – 3:20 pm / Room LL20EF  
Chair: John Van Derlofske, 3M Co.  
Co-Chair: Larry Weber, PLEXIE

14.1: **Invited Paper**: Heavy-Metal-Free Quantum Dots for Display Applications  
Nigel Pickett, Nanoco Technologies, Ltd., Manchester, UK

14.2: **Invited Paper**: Cadmium- and Indium-Based Quantum-Dot Materials  
Seth Coe-Sullivan, QD Vision, Lexington, MA, USA

14.3: Optimizing Quantum-Dot LCD Systems to Achieve Rec. 2020 Color Performance  
James Thielen, 3M Co., Maplewood, MN, USA

Session 15: Applied Vision and Applications of Wearable Displays (Wearable Displays / Applications)  
Tuesday, June 2 / 3:40 – 5:10 pm / Ballroom 220B  
Chair: Jyrki Kimmel, Nokia Technologies  
Co-Chair: Jeffrey Mulligan, NASA Ames Research Center

15.1: Data Glasses for Improved User Interaction in 3D  
Rigo Herold, Westsächsische Hochschule Zwickau, Zwickau, Germany

15.2: High-Luminance Monochromatic See-Through Eyewear Display with Volume Hologram  
Takashi Oka, Sony Corp., Kanagawa, Japan

15.3: Optimal Monitor Gamma for Transparent Displays  
Youngshin Kwak, Ulsan National Institute of Science and Technology, Ulsan, South Korea

15.4: Weight Optimization of Near-to-Eye Light-Field Displays Based on the Human Visual System  
Li Feng, Zhejiang University, Hangzhou, China

15.5L: **Late-News Paper**: An SVGA Full-Color Bidirectional OLED Microdisplay  
Philipp Wartenberg, Fraunhofer Institute for Organic Electronics, Dresden, Germany

Session 16: OLED Deposition and Patterning (Display Manufacturing)  
Tuesday, June 2 / 3:40 – 5:00 pm / Ballroom 220C  
Chair: Greg Gibson, FAS Holdings Group  
Co-Chair: Ake Hornell, EuroLCDs SIA

16.1: **Invited Paper**: Measurement Methods for Quality Control of Coating Uniformity in Solution-Processed OLED Displays  
Ian Parker, DuPont Displays, Santa Barbara, CA, USA

16.2: **Invited Paper**: Electroforming Technology for Manufacturing Thin Metal Masks with Very Small Apertures for OLED Display Manufacturing  
Sandaram Kumar, Advantech US, Inc., Pittsburgh, PA USA

16.3: True-Color 640-ppi OLED Arrays Patterned by CA In-Line Photolithography  
Pawel Malinowski, imec, Leuven, Belgium

16.4: Fully R2R-Processed Flexible OLEDs for Lighting  
Takashi Minakata, Chemical Materials Evaluation and Research Base (CEREBA), Ibaraki, Japan
Session 17: Color Appearance of Displays (Applied Vision/Human Factors)
Tuesday, June 2 / 3:40 – 5:00 pm / Room LL20A
Chair: Miyoshi Ayama, Utsunomiya University
Co-Chair: Jennifer Gille, Qualcomm Technologies
    James Hillis, 3M Co., Maplewood, MN, USA
17.2: Kansei Evaluation of Color Images Presented in Color Gamuts of Different Blue Primaries
    Miyoshi Ayama, Utsunomiya University, Utsunomiya, Japan
17.3: D-CIELab: A Color Metric for Dichromatic Observers
    Haomiao Jiang, Stanford University, Stanford, CA, USA
17.4: Image-Quality Assessment of Large UHD LCDs Using Quantum-Dot and RGBW Technologies
    Ji-Yuan Huang, National Taiwan University, Taipei, Taiwan, ROC

Session 18: Applications of Flexible Display Technology (Applications / e-Paper and Flexible Displays)
Tuesday, June 2 / 3:40 – 5:00 pm / Room LL20BC
Chair: Jin Jang, Kyung Hee University
Co-Chair: Lauren Palmateer, Rovi Corp.
18.1: Invited Paper: Foldable AMOLED Displays with a Touch Panel
    Jia-Chong Ho, ITRI, Hsinchu, Taiwan, ROC
18.2: Invited Paper: Flexible eWriter Technology and Applications
    Asad Khan, Kent Displays, Inc., Kent, OH, USA
18.3: A 8.67-in. Foldable OLED Display with an In-Cell Touch Sensor
    Kazunori Watanabe, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
18.4: A 13.3-in. 664-ppi Foldable AMOLED Display with Crystalline Oxide-Semiconductor FETs
    Kei Takahashi, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

Session 19: Image Processing for Display Enhancement (Display Electronics)
Tuesday, June 2 / 3:40 – 5:00 pm / Room LL20D
Chair: Seung Woo Lee, Kyung Hee University
Co-Chair: Ya Hsiang Tai, National Chiao Tung University
    Yong-Duck Ahn, Dong-A University, Busan, South Korea
19.2: Compensation of OLED I-V Drift for Suppressing Image Sticking in a Digital AMOLED Display Module
    Pascal Volkert, Saarland University, Saarbruecken, Germany
19.3: A Novel Rendering Algorithm with Adaptive Weighting Factors
    Shing-Yu Su, AU Optronics Corp., Hsinchu, Taiwan, ROC
19.4: Denoising for Polarizer-Free Imaging of a Liquid-Crystal Lens
    Mao Ye, SuperD Co., Ltd., Quanzhou, China

Session 20: Electroluminescent Quantum Dots (Emissive Displays / Disruptive Materials)
Tuesday, June 2 / 3:40 – 5:00 pm / Room LL20EF
Chair: Masayuki Nakamoto, Shizuoka University
Co-Chair: Yong-Seog Kim, Hongik University
20.1: Invited Paper: Red and Green Quantum-Dot-Based LEDs Demonstrating Excellent Color Coordinates
    Poopathy Kathirgamanathan, Brunel University London, Uxbridge, UK
20.2: Ultra-Bright Highly Efficient Low-Roll-Off Inverted Quantum-Dot LED Devices (QLEDs)
    Yajie Dong, University of Central Florida, Orlando, FL, USA
20.3: Optimizing the Balance of Holes and Electrons in Inverted Quantum-Dot LEDs by Inserting an Electron-Transport Barrier Layer
    Yibin Jiang, Hong Kong University of Science & Technology, Kowloon, Hong Kong
20.4: Quantum-Dot LEDs with Charge-Generation Layers
    Jin Jang, Kyung Hee University, Seoul, South Korea

Session 21: Oxide-TFT Manufacturing (Display Manufacturing)
Wednesday, June 3 / 9:00 – 10:20 am / Ballroom 220B
Chair: Toshiaki Arai, JOLED, Inc.
Co-Chair: Tian Xiao, CBRITE, Inc.
21.1: Invited Papers: High-Throughput Metal-Oxide TFT with Organic Etch Stopper and SiN, Gate Insulator
    Gang Yu, CBRITE, Inc., Goleta, CA, USA
21.2: Highly Reliable Oxide TFT with Novel Oxide Passivation Layers by All-Printing Processes
    Shinji Matsumoto, Ricoh Co., Ltd., Yokohama, Japan
21.3: A Novel 5-Mask Etch-Stopper Pixel Structure with a Short-Channel Oxide-Semiconductor TFT
    Joon-Young Yang, LG Display Co., Ltd., Gyeonggi-do, South Korea
21.4: Deposition Conditions and High-Resolution TEM Characterization of CAAC IGZO
    David Lynch, Cornell University, Ithaca, NY, USA

Session 22: OLED Materials I (OLEDs)
Wednesday, June 3 / 9:00 – 10:20 am / Ballroom 220C
Chair: Denis Kondakov, DuPont Displays
Co-Chair: C. C. Lee, BOE Technology Group Co., Ltd., Beijing, China
22.1: **Invited Paper:** New Fluorescent Blue Host Materials for Achieving Low Voltage in OLEDs  
Hitoshi Kuma, Idemitsu Kosan Co., Ltd., Chiba, Japan

22.2: **Invited Paper:** Development of Electron-Transport Material to Improve the Efficiency and Lifetime of Blue-Emitting Devices in OLEDs  
Tae-Hyung Kim, Doosan Corp., Gyeonggi-do, South Korea

22.3: CbzTAZ Hosts in Blue OLED Device Demonstrates an High Current Efficiency of Over 52 cd/A  
Tien-Lung Chiu, Yuan Ze University, Chung-Li, Taiwan, ROC

22.4: Synthesis of Host Materials for Blue Phosphorescent OLEDs with High Efficiency and Low Driving Voltage  
Jun Yeob Lee, Dankook University, Yongin, South Korea

**Session 23: e-Paper (e-Paper and Flexible Displays)**  
Wednesday, June 3 / 9:00 – 10:20 am / Room LL20A

Chair: Chao-Yuan Chen, Jiangsu Hecheng Display Technology  
Co-Chair: Makoto Omodani, Tokai University

23.1: **Invited Paper:** Colloidal Dispersion Materials for Electrophoretic Displays and Beyond  
Mark Goulding, Merck Chemicals, Ltd., Southampton, UK

23.2: Predicting the Viewing-Direction Performance of e-Paper Displays with a Front Light under Ambient Lighting Conditions  
Dirk Hertel, E Ink Corp., Billerica, MA, USA

23.3: **Flexible Semitransparent eWriter Displays**  
Clinton Braganza, Kent Displays, Inc., Kent, OH, USA

23.4: **Late-News Paper:** Stretchable and Flexible Electrophoretic Image Display  
Tomoaki Sawada, Panasonic Automotive & Industrial System Co., Osaka, Japan

**Session 24: 3D Light-Field Displays and Imaging (Display Systems)**  
Wednesday, June 3 / 9:00 – 10:20 am / Room LL20BC

Chair: Nikhil Balram, Ricoh Innovations Corp.  
Co-Chair: K. Käläntär, Global Optical Solutions

24.1: **Invited Paper:** Design Principles for Light-Field Image Capture and Display  
Kathrin Berkner, Ricoh Innovations Corp., Menlo Park, CA, USA

24.2: Real-Time Rendering 360° Floating Light-Field 3D Display  
Li Feng, Zhejiang University, Hangzhou, China

24.3: Adaptive Optimization of Rendering for Multi-Projector-Type Light-Field Display  
Li Feng, Zhejiang University, Hangzhou, China

24.4: Floating 3D Image for High-Resolution Portable Device Using Integral Photography Theory  
Chih-Wei Shih, National Chiao Tung University, Hsinchu, Taiwan, ROC

**Session 25: Laser Phosphor Light Sources for Projectors (Projection)**  
Wednesday, June 3 / 9:00 – 10:20 am / Room LL20D

Chair: David Eccles, Rockwell Collins  
Co-Chair: Frederic Kahn, Kahn International, Inc.

25.1: The Progress in International Safety Standards for Laser-Illuminated Projection Systems  
Heidi Hoffman, LIPA, San Jose, CA, USA

25.2: High-Brightness Solid-State Light Source for 4K Ultra-Short-Throw Projector  
Yuki Maeda, Sony Corp., Kanagawa, Japan

25.3: A Miniature Laser-Driven Visible-Light Source  
Nayef Abu-Ageel, Michigan State University, East Lansing, MI, USA

25.4: Laser-Excited Phosphor/Dye in Liquid for High-Power Digital Projectors  
Kenneth Li, Wavien, Inc., Valencia, CA, USA

**Session 26: Micro LED Displays and Electroluminescence (Emissive Displays)**  
Wednesday, June 3 / 9:00 – 10:20 am / Room LL20EF

Chair: Poopathy Kathirgamanathan, Brunel University London  
Co-Chair: Qun Yan, Sichuan COC Display Devices Co., Ltd.

26.1: **Invited Paper:** Quantum Photonic Imager (QPI): A Novel Display Technology that Enables More Than 3D Applications  
Chih-Li Chuang, Ostendo Technologies, Inc., Carlsbad, CA, USA

26.2: **Invited Paper:** High-Brightness Emissive Microdisplay Developed by Integration of III-V LEDs with Thin-Film Silicon Transistors  
Vincent Lee, Lumidex, Inc., New York, NY, USA

26.3: High-Resolution Laser-Etched Circuitry for ACEL Lamps  
Jack Silver, Wolfson Centre, Brunel University, Uxbridge, UK

**Session 27: Advanced Manufacturing Technologies (Display Manufacturing)**  
Wednesday, June 3 / 10:40 am – 12:10 pm / Ballroom 220B

Chair: Joerg Winkler, PLANSEE SE  
Co-Chair: Wei Lung Liau, AU Optronics Corp.

27.1: **Invited Paper:** Liquid-Crystal Mixtures for Creating Polymer Walls in LCDs  
Nils Greinert, Merck KGaA, Darmstadt, Germany

27.2: The Fabrication of a New PSVA Pixel Structure by Using Gray-Tone Mask Technology  
Zhuming Deng, Zhejiang China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

27.3: Development of Highly Durable Achromatic Polarizer with High Heat and Moisture Resistance  
Noriaki Mochizuki, Nippon Kayaku Co., Ltd., Tokyo, Japan
Session 28: OLED Materials II (OLEDs)
Wednesday, June 3 / 10:40 am – 12:00 pm / Ballroom 220C
Chair: Yasunori Kijima, JOLED, Inc.
Co-Chair: Chin Hsin (Fred) Chen, Guangdong Aglaia Optoelectronics Materials Co., Ltd.
28.1: *Invited Paper:* Triplet-Energy Control of PAHs by Heteroatom Incorporation for Development of Efficient Materials for PHOLEDs
Takaji Hatakeyama, Kwansei Gakuin University, Hyogo, Japan
28.2: *Invited Paper:* Reverse Intersystem Crossing from High-Lying Triplet Energy Levels to an Excited Singlet: A “Hot Excitation” Path for OLEDs
Yuguang Ma, South China University of Technology, Guangzhou, China
Banumathy Balaganesan, e-Ray Optoelectronics Technology Co., Ltd., Taoyuan, Taiwan, ROC
28.4: *Invited Paper:* Development of Tetradentate Pt Complexes for Efficient Stable and High Color Purity Blue OLEDs
Jian Li, Arizona State University, Tempe, AZ USA

Session 29: TFTs and Circuits for Flexible Devices (Oxide and LTPS TFTs / e-Paper and Flexible Displays)
Wednesday, June 3 / 10:40 am – 12:00 pm / Room LL20A
Chair: Ryoichi Ishihara, Delft University of Technology
Co-Chair: Sang-Hee Park, KAIST
29.1: Solution-Processed Poly-Si TFTs at Paper-Compatible Temperatures
Miki Trifunovic, Delft University of Technology, Delft, The Netherlands
29.2: Silicon Ink-Based Poly-Si CMOS TFT Fabricated on 300-mm Stainless-Steel-Foil Substrates
Maz Takashima, Thin Film Electronics, Inc., San Jose, CA, USA
29.3: High-Resolution Flexible AMOLED Display with Integrated Gate Driver Using Bulk-Accumulation a-IGZO TFTs
Jin Jang, Kyung Hee University, Seou, South Korea
29.4: Flexible AMOLED Display with Integrated Gate Driver Operating at an Operation Speed Compatible with a 4k x 2k Display
Soeren Steudel, imec, Leuven, Belgium

Session 30: 3D Applications (Applications)
Wednesday, June 3 / 10:40 am - 12:00 pm / Room LL20BC
Chair: Susan Jones, Nuluminia Corp.
Co-Chair: Adi Abileah, Adi-Display Consulting, LLC
30.1: Review of Dynamic Holography in Materials for Large-Sized Holographic 3D Video Displays
Jicheng Liu, Shanghai University, Shanghai, China
30.2: Color Holographic Projection Based on Liquid Lens
Qiong-Hua Wang, Sichuan University, Chengdu, China
30.3: Design Parameters for a Curved Barrier-Type Autostereoscopic Display
Wei-Chieh Lin, National Taiwan University, Taipei, Taiwan, ROC
30.4: Multi-Plane Holographic Display with a Uniform 3D Gerchberg-Saxton Algorithm
Yikai Su, Shanghai Jiao Tong University, Shanghai, China

Session 31: Disruptive LCD Materials (Liquid-Crystal Technology / Disruptive Materials)
Wednesday, June 3 / 10:40 am – 12:00 pm / Room LL20D
Chair: Shui-Chih Lien, TCL Group
Co-Chair: Yukito Saito, FUJIFILM Corp.
31.1: Evolution of Cellulose Tricetate (TAC) Films for LCDs: Novel Technologies for High Hardness, Durability, and Dimensional Stability
Ryo Suzuki, FUJIFILM Corp., Kanagawa, Japan
31.2: Low-Dielectric-Constant Materials for High-Performance LCDs
Haiwei Chen, University of Central Florida, Orlando, FL, USA
31.3: New Approach to Developing Liquid-Crystal Materials for Idling Stop Driving on Reflective Displays
Yasuhiro Niiura, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
31.4: Nano-Phase-Separated Liquid Crystals (NPS LCs) with Fast Response Time
Toru Fujisawa, DIC Corp., Iwakuni, Japan

Session 32: Front Lighting and Reflective Displays (Display Systems / e-Paper and Flexible Displays / Lighting)
Wednesday, June 3 / 10:40 am – 12:00 pm / Room LL20EF
Chair: K. Käläntär, Global Optical Solutions
Co-Chair: Kevin Gahagan, Corning Incorporated
32.1: Front Light for Color Electrophoretic Display Applications
Hsin-Tao Huang, E Ink Holding, Inc., Hsinchu, Taiwan, ROC
32.2: A Study on the Front Light Guide Used in Color Reflective LCDs
Xinxing Wang, BOE Technology Group Co., Ltd., Beijing, China
Session 33: Novel Devices (Active-Matrix Devices)
Wednesday, June 3 / 3:30 – 5:10 pm / Ballroom 220B
Chair: Kazuyoshi Omata, Konica Minolta
Co-Chair: Mike Hack, Universal Display Corp.
33.1: Invited Paper: A Novel Vertical-Type Light-Emitting Transistor
Tadahiko Hirai, CSIRO, Clayton, Australia
33.2: Neuron MOS Devices Using TFTs
Mutsumi Kimura, Ritsukoku University, Otsu, Japan
33.3: Invited Paper: High Mobility Field Effect Transistors Fabricated from Semiconducting Polymers
Alan Heeger, University of California, Santa Barbara, Santa Barbara, CA USA
33.4: Flexible IGZO TFTs with a Disruptive Photo-Patternable and Thermally Stable Organic Gate Insulator
Hsing-Hung Hsieh, Polysia Taiwan Corp., Hsinchu, Taiwan, ROC
33.5: Fabrication of an All-Screen-Printed Oxide-Semiconductor-TFT Active-Matrix Backplane
Kazuhiko Fukuda, Japan Advanced Institute of Science and Technology, Ishikawa, Japan

Session 34: Disruptive OLED Materials (OLEDs / Disruptive Materials)
Wednesday, June 3 / 3:30 – 4:50 pm / Ballroom 220C
Chair: Seth Coe-Sullivan, QD Vision, Inc.
Co-Chair: Sven Zimmermann, Novaled AG
34.1: Invited Paper: Effect of Singlet Triplet Recycling in the Charge-Transfer-State Manifold and Molecular Geometry on Thermally Activated Delayed Fluorescence.
Andrew Monkman, Durham University, Durham, UK
34.2: Invited Paper: Highly Efficient and Stable OLEDs Using Hosts with Thermally Activated Delayed Fluorescence
Lian Duan, Tsinghua University, Beijing, China
34.3: Emitting Materials for Thermally Activated Delayed Fluorescent OLEDs Using Benzofurocarbazole and Benzothienocarbazole as Donor Moieties
Dong Ryun Lee, Dankook University, Yongin, South Korea
34.4: Invited Paper: Combinatorial Design of OLED-Emitting Materials
Alán Aspuru-Guzik, Harvard University, Cambridge, MA, USA

Session 35: Projection Optics (Projection)
Wednesday, June 3 / 3:30 – 4:50 pm / Room LL20A
Chair: John Vieth, Christie Digital Systems
Co-Chair: Ming Hsien Wu, Hamamatsu Corp
35.1: Auto-Calibration for Screen Correction and Point Cloud Generation
Jason DeGlint, University of Waterloo, Waterloo, Ontario, Canada
35.2: Design of Hybrid Refractive-Reflective Projection Optics for Family Theatres
Xiao Wei Sun, Nanyang Technological University, Singapore
35.3: Resolution Enhancement Based on Shifted Superposition
Eliz Barsham, University of Waterloo, Waterloo, Ontario, Canada
35.4: A High Contrast Ratio and Compact-Sized Prism for DLP Projection System
Jui-Wen Pan, National Chiao Tung University, Tainan, Taiwan, ROC

Session 36: Holographic 3D Displays (Display Systems)
Wednesday, June 3 / 3:30 - 5:00 pm / Room LL20BC
Chair: W. Hendrick, Rockwell Collins Optronics
Co-Chair: K. Källäntäär, Global Optical Solutions
36.1: Binocular Holographic Display Using the Pupil Space Division Method
Jungkwuen An, SAIT, Samsung Electronics Co., Sowon, South Korea
36.2: Speckle Suppression in a Scaled Holographic Display from Single-Phase-Only Computer-Generated Hologram
Jun Xia, Southeast University, Nanjing, China
36.3: Flat-Panel Coherent Backlight for Holographic Displays with Improved Diffraction Efficiency
Yikai Su, Shanghai Jiao Tong University, Shanghai, China
36.4: Invited Paper: Real-Time Light Amplification by Using Photorefractive Ferroelectric Liquid-Crystal Mixtures
Takao Sasaki, Tokyo University of Science, Tokyo, Japan
36.5L: Late-News Paper: Multi-Projection 3D Display with Dual-Projection System Using Uniaxial Crystal
Byoungho Lee, Seoul National University, Seoul, South Korea

Session 37: Blue-Phase LCDs (Liquid-Crystal Technology)
Wednesday, June 3 / 3:30 – 4:50 pm / Room LL20D
Chair: Michael Wittek, Merck KGaA
Co-Chair: Shin-Tson Wu, University of Central Florida
37.1: A Blue-Phase LCD with Wall Electrode and High-Driving-Voltage Circuit
Cheng-Yeh Tsai, AU Optronics Corp., Hsinchu, Taiwan, ROC
37.2: High-Performance Blue-Phase LCDs Stabilized by Linear Photopolymers
Daming Xu, University of Central Florida, Orlando, FL, USA
Session 38: OLED Lighting (OLEDs / Lighting)
Wednesday, June 3 / 3:30 – 4:30 pm / Room LL20EF
Chair: Jang Hyuk Kwon, Kyung Hee University
Co-Chair: Franky So, University of Florida

38.1: Late-News Paper: Efficiency Enhancement of OLEDs on Flexible Substrates with Patterned Inverted Cone Structure
Yi-Jun Wang, Shanghai Jiao Tong University, Shanghai, China

38.2: High-Efficiency Three-Stack Tandem White OLEDs
Jang Hyuk Kwon, Kyung Hee University, Seoul, South Korea

38.3: Simulations, Measurements, and Optimization of OLEDs with a Scattering Layer
Stéphane Altazin, Fluxim AG, Winterthur, Switzerland

Session 39: Advanced TFTs (Active-Matrix Devices)
Thursday, June 4 / 9:00 – 10:20 am / Ballroom 220B
Chair: Hyun Jae Kim, Yonsei University
Co-Chair: Junho Song, Samsung Display Co., Ltd.

39.1: Invited Paper: Printed Inorganic Transistors Based on Transparent Oxides
Vivek Subramanian, University of California at Berkeley, Berkeley, CA, USA

39.2: Invited Paper: Recent Progress of Oxide-Semiconductor-Based p-Channel TFTs
Kenji Nomura, Qualcomm Technologies, Inc., San Jose, CA, USA

Yongbin Jeong, LG Display Co., Ltd., Gyeonggi-do, South Korea

39.4: Late-News Paper: Vertical Organic Transistors (V-OFETs) for Truly Flexible AMOLED Displays
Mauro Furno, Novaled GmbH, Dresden, Germany

Session 40: OLED Devices I (OLEDs)
Thursday, June 4 / 9:00 – 10:20 am / Ballroom 220C
Chair: Michael Weaver, Universal Display Corp.
Co-Chair: Denis Kondakov, DuPont Displays

40.1: Late-News Paper: A Novel RGB Color-Patterning Method for OLEDs: Joule-Heating-Induced Color Patterning (JICP)
Jae-Sang Ro, Hongik University, Seoul, South Korea

40.2: Efficiency Enhancement in Phosphorescent and Fluorescent OLEDs Utilizing Energy Transfer from Exciplex to Emitter
Tsuyoshi Takahashi, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

40.3: Optimization of Host-Dopant System for Realizing Efficient Thermally Activated Delayed Fluorescence OLEDs
Min Chul Suh, Kyung Hee University, Seoul, South Korea

40.4: High-Efficiency Blue Phosphorescent OLEDs with >57 cd/A, >50 lm/W, and >25% External Quantum Efficiency
Jiun-Haw Lee, National Taiwan University, Taipei, Taiwan, ROC

Session 41: Automotive Display Applications and Systems (Vehicular)
Thursday, June 4 / 9:00 – 10:00 am / Room LL20A
Chair: Jerzy Kanicki, University of Michigan
Co-Chair:

41.1: Development of RGBW LCD with Edge-Lit 2D Local-Dimming System for Automotive Applications
Naoyuki Takasaki, Japan Display, Inc., Kanagawa, Japan

41.2: High-Reliability Integrated Gate Driver Circuit in a Panel for Automotive Displays
Dahye Sim, LG Display Co., Ltd., Gyeonggi-do, South Korea

41.3: Invited Paper: Megatrends Driving Automotive Displays and Associated Mega Issues
Paul M. Russo, GEO Semiconductor, Inc., San Jose, CA, USA

Session 42: Curved and High-Resolution Display Metrology (Display Measurement)
Thursday, June 4 / 9:00 – 10:20 am / Room LL20BC
Chair: Stephen Atwood, Azonix Corp.
Co-Chair: Frank Rochow, Adviser

42.1: Comparison of Key Optical Measurements of Curved to Flat LCD TVs and Their Impact on Image Quality
Karheinz Blankenbach, Pforzheim University, Pforzheim, Germany

42.2: Stress-Induced Substrate Mura in Curved LCDs
K. Hemanth Vepakomma, Corning Incorporated, Corning, NY, USA

42.3: Light-Leakage Study on Curved ADS-Mode LCDs
Jaegon You, BOE Technology Group Co., Ltd., Beijing, China

42.4: How to Perform Viewing-Angle Measurements on Curved Displays
Pierre Boher, ELDIM, Herouville, France

Session 43: FFS/IPS I (Liquid-Crystal Technology)
Thursday, June 4 / 9:00 – 10:20 am / Room LL20D
Chair: Hyun Chul Choi, LG Display Co., Ltd.
Co-Chair: Ki Chul Shin, Samsung Display Co., Ltd.
Session 44: Advanced Light Sources, Components, and Systems I (IES Lighting Track)
Thursday, June 4 / 9:00 – 10:20 am / Room LL20EF
Chair: Mike Lu, Acuity Brands Lighting
Co-Chair: David Aurelien, Soraa, Inc.
44.1: Invited Paper: OLED Lighting for General Lighting Applications
Seongsoo Jang, LG Chem, Ltd., Cheong, South Korea
44.2: Invited Paper: Current and Future Projection of Edge-Lit LED Panel Adoption in Lighting
Brett Shriver, Global Lighting Technology, Brecksville, OH, USA
44.3: Display Technologies for LED Lighting. Part I: Optical Components
William Edmonds, 3M Co., St. Paul, MN, USA
44.4: Display Technologies for LED Lighting. Part II: Scalable Optical Architectures Enabled by Modular Film-Based Components
William Edmonds, 3M Co., St. Paul, MN USA

Session 45: High-Performance Oxide TFTs I (Oxide and LTPS TFTs)
Thursday, June 4 / 10:40 am – 12:00 pm / Ballroom 220B
Chair: Hsing-Hung Hsieh, Polyera Taiwan Corp.
Co-Chair: Roger Stewart, Sourland Mountain Associates
45.1: Invited Paper: Future Possibilities of Crystalline Oxide Semiconductors, Especially C-Axis-Aligned Crystalline IGZO
Shunpei Yamazaki, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
45.2: Sputtering C-Axis-Aligned Crystalline (CAAC) IGZO Films: A Design of Experiment (DOE) Study
Michael Thompson, Ithaca, NY, USA
45.3: Invited Paper: High-Performance Nanocrystalline ZnOxNy for Imaging and Display Applications
Eunha Lee, SAIT, Samsung Electronics Co., Suwon, South Korea
45.4: Invited Paper: Amorphous-Metal-Oxide/1D Nanomaterial Hybrid TFTs: A New Avenue to High-Speed Macroelectronics
Lei Liao, Wuhan University, Wuhan, China

Session 46: OLED Devices II (OLEDs)
Thursday, June 4 / 10:40 am – 12:00 pm / Ballroom 220C
Chair: Eric Forsythe, Army Research Laboratory
Co-Chair: Denis Kondakov, DuPont Displays
46.1: Invited Paper: Recent Progress of LEDs Based on Colloidal Quantum Dots
Changhee Lee, Seoul National University, Seoul, South Korea
46.2: Transparent Inverted OLEDs with a Multilayered Graphene Top Anode Using a Novel Lamination Technique
Jeong-Ik Lee, ETRI, Daejeon, South Korea
46.3: Anchoring Energy of PEDOT:PSS Alignment Layer for High-Order Parameter and Polarized Luminescence of Organic Dyes
Andrew Stankevich, Institute of Chemistry of New Materials, National Academy of Sciences Belarus, Minsk, Belarus
46.4: Effects of Electron-Injection Layer on Storage and Operational Stability of Air-Stable OLEDs
Hirohiko Fukagawa, NHK Science & Technology Research Laboratories, Tokyo, Japan

Session 47: Next-Generation Automotive Display Technologies I: HUDs (Display Systems / Vehicular)
Thursday, June 4 / 10:40 - 11:40 am / Room LL20A
Chair: Rashmi Rao, Harman International
Co-Chair: Masaru Suzuki, SKC Haas Display Films
47.1: Invited Paper: Practical Application of TI DLP® Technology in the Next-Generation Head-Up Display System
Jason Thompson, Texas Instruments, Plano, TX, USA
47.2: Invited Paper: Laser-Scanning Head-Up Display for Better Driving Assistance
Koichiro Nakamaura, Ricoh Co., Ltd., Yokohama, Japan
47.3: Invited Paper: Smart-Headlamps Augmented-Reality HUD for Smart Notifications
Mainak Biswas, Qualcomm, Santa Clara, CA, USA

Session 48: Display Standards and Their Application to Transparent Displays (Display Measurement)
Thursday, June 4 / 10:40 am – 12:20 pm / Room LL20BC
Chair: Thomas Fiske, Consultant
Co-Chair: Marja Salmimaa, Nokia Research Center
48.1: Invited Paper: Recent Advances in the Standardization of Display Metrology and Light Measurement
Michael Becker, Instrument Systems GmbH, Munich, Germany
48.2: Invited Paper: Recent Developments in Standardization in IEC TC 110, Electronic Display Devices: Reflecting Market Interests
Kei Hyodo, Konica Minolta, Inc., Hachioji, Japan
48.3: Optical Measurement Method for Transparent LCDs
Xinli Ma, BOE Technology Group Co., Ltd., Beijing, China
48.4: General Metrology Framework for Determining the Ambient Optical Performance of Flat-Panel Displays
John Penczek, University of Colorado, Boulder, CO, USA, and National Institute of Standards and Technology, Boulder, CO, USA
Session 49: FFS/IPS II (Liquid-Crystal Technology)
Thursday, June 4 / 10:40 am – 12:00 pm / Room LL20D
Chair: Takahiro Ishinabe, Tohoku University
Co-Chair: Jae Hoon Kim, Hanyang University

49.1: Invited Paper: n-FFS vs. p-FFS: Who Wins?
Shin-Tson Wu, University of Central Florida, Orlando, FL, USA

49.2: Image-Sticking Reduction of FFS-LCDs
Daming Xu, University of Central Florida, Orlando, FL, USA

49.3: Analysis of Press Mura in FFS-LCDs
Yu-Ling Yeh, AU Optronics Corp., Hsinchu, Taiwan, ROC

49.4: A High-Transmittance IPS LC Mode Using a New Self-Aligned Structure
Sun-Hwa Lee, LG Display Co., Ltd., Gyeonggi-do, South Korea

Session 50: Effect of Lighting on Health and Perception (IES Lighting Track)
Thursday, June 4 / 10:40 am – 12:20 pm / Room LL20EF
Chair: James Larimer, ImageMetrics LLC
Co-Chair: Ingrid Heynderickx, Eindhoven University of Technology

50.1: Invited Paper: The Importance of Melanopsin Activation in Perception, Health, and Lighting Design
Dingcai Cao, University of Illinois at Chicago, Chicago, IL, USA

50.2: Invited Paper: Stroboscopic Effect of LED Lighting
Lili Wang, Southeast University, Nanjing, China

50.3: Invited Paper: Perceptual Accuracy in the Visualization of Lighting Scenes
Michael Murdoch, Philips Research, Eindhoven, The Netherlands

50.4: Relationship between Short-Term and Long-Term Assessment of glare
Yan Tu, Southeast University, Nanjing, China

Session 51: High-Performance Oxide TFTs II (Oxide and LTPS TFTs)
Thursday, June 4 / 1:30 – 2:50 pm / Ballroom 220B
Chair: Kalluri Sarma, Honeywell, Inc.
Co-Chair: Tohru Nishibe, Japan Display, Inc.

51.1: a-IGZTO TFTs with High Mobility and Reliability
Chih-Yu Su, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

51.2: Development of a High-Mobility Zinc-Oxynitride TFT for AMOLED Displays
Liangchen Yan, BOE Technology Group Co., Ltd., Beijing, China

51.3: A Mobility-Enhancing Method Adopting a Multi-Active-Layer Structure in TFTs
Ming-Yen Tsai, National Sun Yat-Sen University, Kaohsiung, Taiwan, ROC

51.4: Invited Paper: High-Performance Flexible TFTs from Oxide/Carbon Heterostructures
Xiangfeng Duan, University of California at Los Angeles, Los Angeles, CA, USA

Session 52: OLED Devices III (OLEDs)
Thursday, June 4 / 1:30 – 2:50 pm / Ballroom 220C
Chair: Denis Kondakov, DuPont Displays
Co-Chair: C. C. Lee, BOE Technology Group Co., Ltd., Beijing, China

52.1: Analysis of Self-Heating and Negative Capacitance in Organic Semiconductor Devices
Evelyne Knapp, Zurich University of Applied Sciences, Winterthur, Switzerland

52.2: Non-Destructive Analyses of Operational Degradation of OLED Devices
Toshibhiro Yoshikawa, Chemical Materials Evaluation Research Base (CERBA), Tsukuba, Japan

52.3: Exciton Management in Non-Doped Ultra-Thin Emissive-Layer-Based OLED Displays
Te Tan, Shanghai Jiao Tong University, Shanghai, China

52.4: Late-News Paper: Transmissive One-Sided-Emission OLED Panel Using Alignment-Free Cathode Patterning
Daimotsu Kato, Toshiba Corp., Kanagawa, Japan

Afternoon Plenary Talk: Vehicular Displays and Trends
Thursday, June 4 / 1:00 – 1:30 pm / Room LL20A
* : Vehicular Displays and HMI: Past, Present, and Future
Peter Knoll, Bosch, Gerlingen, Germany

Session 53: Touch, Interactivity, and Human-Machine Interface (Vehicular / Touch and Interactivity)
Thursday, June 4 / 1:30 – 2:50 pm / Room LL20A
Chair: Silviu Pala, Denso International America
Co-Chair:

Beomshik Kim, Samsung Display Co., Ltd., Yongin, South Korea

53.2: Visual Search and Attention: What Eye-Tracking Reveals about Visual Performance in the Curved Display
Hyeon-Jeong Suk, KAIST, Daejeon, South Korea

53.3: Invited Paper: Creating a Compelling Touch Experience
Neil Olien, Immersion Corp., Montreal, Quebec, Canada
53.4: Metal-Mesh Design for High-ppi LCD Application  
Chun Chen, General Interface Solution, Ltd., Miaoli, Taiwan, ROC

**Session 54: Transparent Display Systems (Display Systems)**  
Thursday, June 4 / 1:30 – 2:50 pm / Room LL20BC  
Chair: Bill Cummings, BYDU Technology Services  
Co-Chair: Jean-Pierre Guillou, Apple, Inc.

54.1: A Switched Emissive Transparent Display with Controllable Per-Pixel Opacity  
Quinn Smithwick, Disney Research, Glendale, CA, USA

54.2: A Novel Flat-Type Transparent LCD  
Chia-Wei Kuo, AU Optronics Corp., Hsinchu, Taiwan, ROC

54.3: A Polymer-Stabilized Cholesteric Texture (PCST) for Switchable Transparent LCDs  
Alireza Moheghi, Liquid Crystal Institute, Kent State University, Kent, OH, USA

54.4: High-Contrast Smart-Window OLED Device with New Black-Screen Technique  
Jang Hyuk Kwon, Kyung Hee University, Seoul, South Korea

**Session 55: LC Beyond Displays (Liquid-Crystal Technology)**  
Thursday, June 4 / 1:30 – 2:50 pm / Room LL20D  
Chair: Philip Chen, National Chiao Tung University  
Co-Chair: Xiaoyang Sun, Chinese Academy of Sciences

55.1: **Invited Paper:** Liquid Crystals for Smart Antennas and Other Microwave Applications  
Michael Wittek, Merck KGaA, Darmstadt, Germany

55.2: **Invited Paper:** Rethinking Wireless Communications: Advanced Antenna Design Using LCD Technology  
Ryan Stevenson, Kymeta Corp., Redmond, WA, USA

55.3: A Low-Voltage Fast-Response IR Spatial Light Modulator  
Fenglin Peng, University of Central Florida, Orlando, FL, USA

**Session 56: Advanced Lighting Applications (IES Lighting Track)**  
Thursday, June 4 / 1:30 – 2:50 pm / Room LL20EF  
Chair: Ingrid Heynderickx, Eindhoven University of Technology  
Co-Chair: Po-Chieh Hung, Konica Minolta Sensing

56.1: **Invited Paper:** Creating an Effective Lighting Environment with Task, Surround, and Ambient Lighting  
Peter Ngai, Acuity Brands Lighting, Berkeley, CA, USA

56.2: **Invited Paper:** Progress in Color-Rendition Metrics for Lighting  
David Aurelien, Soraa, Fremont, CA, USA

56.3: **Invited Paper:** New Color-Rendition Standards and Implications for Displays that Provide Illumination  
Lorne Whitehead, University of British Columbia, Vancouver, British Columbia, Canada

56.4: Forward-Looking Light-Sensor Utilization for Automatic Luminance Control  
Paul Weindorf, Visteon Corp., Van Buren Township, MI, USA

**Session 57: Oxide and LTPS TFTs (Oxide and LTPS TFTs)**  
Thursday, June 4 / 3:10 – 4:30 pm / Ballroom 220B  
Chair: James Chang, Apple, Inc.  
Co-Chair: Norbert Fruehauf, University of Stuttgart

57.1: **Invited Paper:** High-Performance Poly-Si TFTs Using Pressure-Induced Nucleation Technology  
Myung-Koo Kang, Samsung Electronics Co., Gyunggi-do, South Korea

57.2: Electrical Characterization of BCE-TFTs with IGZTO Oxide Semiconductor Compatible with Cu and Al Interconnections  
Mototaka Ochi, Kobe Steel, Ltd., Kobe, Japan

57.3: New Pixel Circuits for Controlling Threshold Voltage by Back-Gate Bias-Voltage Using Crystalline-Oxide-Semiconductor FETs  
Makoto Kaneyasu, Semiconductor Energy Laboratory, Co., Ltd., Kanagawa, Japan

57.4: **Invited Paper:** Device Physics of Amorphous-Oxide TFTs  
Ananth Dodabalapur, The University of Texas at Austin, Austin, TX, USA

**Session 58: OLED Displays I (OLEDs)**  
Thursday, June 4 / 3:10 – 4:30 pm / Ballroom 220C  
Chair: Tarig Ali, eMagin Corp.  
Co-Chair: Chin Hsin (Fred) Chen, Guangdong Aglaia Optoelectronic Materials Co., Ltd.

58.1: A Study of Adaptive Temporal Aperture Control for OLED Displays with Motion Vector  
Takenobu Usui, NHK Science & Technology Research Laboratories, Tokyo, Japan

58.2: High-Performance Large-Sized OLED TV with UHD Resolution  
Yu-Hung Chen, AU Optronics Corp., Hsinchu, Taiwan, ROC

58.3: A Novel Highly Transparent 6-in. AMOLED Display Consisting of IGZO TFTs  
Chia-Tse Lee, Chunghua Picture Tubes, Taoyuan, Taiwan, ROC

58.4: A 31-in. 4K x 2K WRGB AMOLED TV with a High-Stability IGZO Backplane  
Chih-Yu Su, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
Session 59: Next-Generation Automotive Display Technologies II: Flexible, Curved, Coatings (Vehicular)
Thursday, June 4 / 3:10 – 4:30 pm / Room LL20A
Chair: Takatoshi Tsujimura, Konica Minolta, Inc.
Co-Chair:
59.1: Invited Paper: Flexible Flat-Panel-Display Designs with Gate Driver Circuits Integrated within the Pixel Area
Hidefumi Yoshida, Sharp Corp., Nara, Japan
59.2: Highly Stable and Transparent Oxide TFTs for Rollable Displays
Jin Jang, Kyung Hee University, Seoul, South Korea
59.3: Functional Transparent Coatings for Displays
Songwei Lu, PPG Industries, Inc., Allison Park, PA, USA
59.4: A Curved Cover with Carbon-NanoBud Touch for Mobile Applications
Erkki Soininen, Canatu Oy, Helsinki, Finland

Session 60: Capacitive Touch (Touch and Interactivity)
Thursday, June 4 / 3:10 – 4:10 pm / Room LL20BC
Chair: Jeff Han, Microsoft
Co-Chair: John Zhong, Apple, Inc.
60.1: A Capacitive Touch Panel for Simultaneous Detection of Non-Conductive and Conductive Objects
Christopher Brown, Sharp Laboratories of Europe, Oxford, UK
60.2: Invited Paper: Advanced In-Cell Touch Technology for Large-Sized LCDs
Cheolse Kim, LG Display Co., Ltd., Gyeonggi-do, South Korea
60.3L: Late-News Paper: An Algorithm Recognizing Pinch Gestures on a Surface-Capacitive Touch Screen
Jiro Yanase, NLT Technologies, Ltd., Kawasaki, Japan

Session 61: Liquid-Crystal Lenses (Liquid-Crystal Technology)
Thursday, June 4 / 3:10 – 4:10 pm / Room LL20D
Chair: Philip Bos, Kent State University
Co-Chair: Hoi-Sing Kwok, Hong Kong University of Science & Technology
61.1: Variable-Lens-Pitch LC GRIN Lens for Adapting a 3D Viewing Angle
Ayako Takagi, Toshiba Corp., Kawasaki, Japan
61.2: Dependence of Optical Power of an LC Lens on Cell Gap
Mao Ye, SuperD Co., Ltd., Shenzhen, China
Philip Bos, Liquid Crystal Institute, Kent State University, Kent, OH, USA

Session 62: Advanced Light Sources, Components, and Systems II (IES Lighting Track)
Thursday, June 4 / 3:10 – 4:10 pm / Room LL20EF
Chair: Bob Horner, IES
Co-Chair: Mike Lu, Acuity Brands Lighting
62.1: Invited Paper: Application-Specific Spectral Power Distributions of White Light
Po-Chieh Hung, Konica Minolta Laboratory U.S.A., Inc., San Mateo, CA, USA
62.2: Invited Paper: LED Life vs. LED System Life
Nadarajah Narendran, Lighting Research Center, Troy, NY, USA
Shih-Yu Tu, GIPO and National Taiwan University, Taipei, Taiwan, ROC

Session 63: High-Resolution Displays (Oxide and LTPS TFTs)
Friday, June 5 / 9:00 – 10:20 am / Ballroom 220B
Chair: Man Wong, Hong Kong University of Science & Technology
Co-Chair: Kenichi Takatori, NLT Technologies, Ltd.
63.1: An Ultra-High-Density 736-ppi LCD Using an InGaZnO Platform
Naoki Ueda, Sharp Corp., Nara, Japan
63.2: A 2K x 4K 550-ppi In-Cell Touch TFT-LCD Using 1.5-µm Channel-Width LTPS TFTs
Takashi Nakamura, Japan Display, Inc., Saitama, Japan
63.3: Fabrication of 8K x 4K Organic EL Panel Using High-Mobility IGZO Material
Kenichi Okazaki, Advanced Film Device, Inc., Tochigi, Japan
63.4: High-Performance 4K x 2K 65-in. TV with BCE-Type Oxide TFTs
Bo-Liang Yeh, AU Optronics Corp., Hsinchu, Taiwan, ROC

Session 64: OLED Displays II: Curved and High Resolution (OLEDs / Curved and High-Resolution Displays)
Friday, June 5 / 9:00 – 10:20 am / Ballroom 220C
Chair: Yusin Lin, AU Optronics Corp.
Co-Chair: Changwoong Chu, Samsung Display Co., Ltd.
64.1: Slim Design of an 65-in. UHD OLED TV
Koichi Miyata, LG Display Co., Ltd., Gyeonggi-do, South Korea
64.2: Panel and Circuit Designs for the World’s First 65-in. UHD OLED TV
Ryo SITE Tani, LG Display Co., Ltd., Gyeonggi-do, South Korea
64.3: Development of 55-in. UHD AMOLED TV
Zhong-Yuan Wu, BOE Technology Group Co., Ltd., Beijing, China
Session 65: Flexible Display Technology (e-Paper and Flexible Displays)
Friday, June 5 / 9:00 – 10:20 am / Room LL20A
Chair: Janglin Chen, DTC/TRI
Co-Chair: Chuyu Liu, AU Optronics Corp.
65.1: Invited Paper: World’s First Large-Sized 18-in. Flexible OLED Display and Key Technologies
Jong-Geun Yoon, LG Display Co., Ltd., Gyeonggi-do, South Korea
65.2: Invited Paper: Bias-Stress-Induced Charge Trapping at Flexible Polymer Gate Dielectric in Organic TFTs
Kilwon Cho, Pohang University of Science and Technology, Pohang, South Korea
65.3: Development of Flexible Displays Using Back-Channel-Etched In–Sn–Zn–O TFTs and Air-Stable Inverted OLEDs
Mitsuru Nakata, NHK Science & Technology Research Laboratories, Tokyo, Japan
65.4: Organic-TFT-Driven Backplane for Flexible Electrophoretic Display
Wen-Chung Tang, E Ink Holding, Inc., Hsinchu, Taiwan, ROC

Session 66: Stereoscopic 3D Displays (Display Systems / Projection)
Friday, June 5 / 9:00 – 10:20 am / Room LL20BC
Chair: Fujio Okumura, NEC Corp.
Co-Chair: Han Ping Shieh, Display Institute, National Chiao Tung University
66.1: Feasibility of 3D Cinema with Uncompromised Performance
Gary Sharp, RealD, Boulder, CO, USA
66.2: Tracked Automultiscopic 3D Tabletop
Quinn Smithwick, Disney Research, Glendale, CA, USA
66.3: Smooth-Motion-Parallax Autostereoscopic 3D Display Using Linear Blending of Viewing Zones
Munekazu Date, NTT Media Intelligence Laboratories, Nippon Telegraph and Telephone Corp., Kanagawa, Japan
66.4: Invited Paper: Circularly Polarized (CPL) 3D Monitors Attract Attention Again for Medical Applications
Takahito Tanabe, Arisawa Manufacturing Co., Ltd., Niigata, Japan

Session 67: Photo Alignment (Liquid-Crystal Technology)
Friday, June 5 / 9:00 – 10:20 am / Room LL20D
Chair: Cheng Chen, Apple, Inc.
Co-Chair: Matthew Sousa, 3M Co.
67.1: Reactive Mesogen Stabilized Azodye Alignment for High-Contrast Displays
Valerie Finnemeyer, Liquid Crystal Institute, Kent State University, Kent, OH, USA
67.2: Fabrication of a Zero-Pretilt Liquid-Crystal Cell Using UV-Curable Polymer
Tae-Hoon Yoon, Pusan National University, Busan, South Korea
67.3: Photo-Stable Azo-Dye Photo-Alignment Polymer Surface for IPS-LCDs
Man Chuen Tseng, Hong Kong University of Science and Technology, Kowloon, Hong Kong
67.4L: Late-News Poster: Electrically Suppressed Helix Ferroelectric Liquid Crystals: A better Alternative for IPS Displays
Abhishek Srivastava, Hong Kong Institute of Science and Technology, Kowloon, Hong Kong

Session 68: Touch Systems and Materials (Touch and Interactivity / Display Manufacturing / Vehicular)
Friday, June 5 / 9:00 – 10:00 am / Room LL21EF
Chair: Willem den Boer, Guardian Industries
Co-Chair: Reiner Mauch, Schott AG
68.1: Invited Paper: Panel-Structure Evolution of In-Cell Capacitive Touch Sensor
Qijun Yao, Shanghai Tianma Microelectronics Co., Ltd., Shanghai, China
68.2: Study of the Optimized Design for High-Resistance Black Matrix at In-Cell Touch Structure
Younsung Na, LG Display Co., Ltd, Gyeonggi-do, South Korea

Session 69: Oxide-TFT Reliability (Oxide and LTPS TFTs)
Friday, June 5 / 10:40 – 11:40 am / Ballroom 220B
Chair: Yoshitaka Yamamoto, Semiconductor Energy Laboratory Co., Ltd.
Co-Chair: Hyun Jae Kim, Yonsei University
69.1: Invited Paper: Advantages of the Self-Aligned Top-Gate Oxide-TFT Technology for AMOLED Displays
Toshiaki Arai, JOLED, Inc., Kanagawa, Japan
69.2: Highly Reliable a-IGZO TFTs with Self-Aligned Coplanar Structure for Large-Sized UHD OLED TV
Chanki Ha, LG Display Co., Ltd., Gyeonggi-do, South Korea
69.3: a-IGZO TFT Reliability Improvement by Using a Dual-Gate Structure
Kuo-ju-i Chang, AU Optronics Corp., Hsinchu, Taiwan, ROC

Session 70: OLED Displays III (OLEDs)
Friday, June 5 / 10:40 am – 12:00 pm / Ballroom 220C
Chair: C. C. Lee, BOE Technology Group Co., Ltd.
Co-Chair: Yustin Lin, AU Optronics Corp.
70.1: High-Resolution OLED Display with the Lowest Level of Power Consumption Using a Blue/Yellow Tandem Structure and RGBY Subpixels
Ryohei Yamaoka, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
Session 71: Flexible Encapsulation (e-Paper and Flexible Displays)
Friday, June 5 / 10:40 – 11:40 am / Room LL20A
Chair: Kyung Cheol Choi, KAIST
Co-Chair: Bo-Ru Yang, Sun Yat-Sen University
71.1: High-Throughput and Scalable Spatial Atomic Layer Deposition of Al₂O₃ as a Moisture Permeation Barrier for a Flexible OLED Display
Hagyoung Choi, LIG ADP Co., Ltd., Seongnam, South Korea
71.2: Mechanical Characteristics of Flexible AMOLED Displays
Ji-Feng Chen, AU Optronics Corp., Hsinchu, Taiwan, ROC
71.3: Quantification of Water Penetration and Degradation through Adhesives Applicable to Flexible OLED Design
Yoshiko Ohzu, Chemical Materials Evaluation and Research Base (CEREBA), Ibaraki, Japan

Session 72: Curved or High-Resolution Large Displays (Display Systems / Curved and High-Resolution Displays)
Friday, June 5 / 10:40 am – 12:10 pm / Room LL20BC
Chair: Wei Chen, Apple, Inc.
Co-Chair: Brian Berkeley, Independent
72.1: World’s First 55-in. 120-Hz-Driven 8K x 4K IPS-LCDs with Wider Color Gamut
Ryutaro Oke, Panasonic Liquid Crystal Display Co., Ltd., Himeji, Japan
72.2: Development and Analysis of Technical Challenges in the World’s Largest (110-in.) Curved LCD
Ken Hsiao, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
72.3: The Mechanical Reliability of Glass Displays in Bending
K. Hemanth Vepakomma, Corning Incorporated, Corning, NY, USA
72.4: Development of a Laser Optical System for a 4K Laser-Backlit LCD TV
Nami Okimoto, Mitsubishi Electric Corp., Advanced Technology R&D Center, Nagasaki, Japan
72.5L: Late-News Paper: Development of a Novel Wide-Color-Gamut 8K 120-Hz LCD with ITU-R BT.2020 Compliance
Takeshi Kamakura, Sharp Corp., Nara, Japan

Session 73: Ultra-Low-Power LCDs (Liquid-Crystal Technology)
Friday, June 5 / 10:40 am – 12:00 pm / Room LL20D
Chair: Gang Xu, Hewlett-Packard Co.
Co-Chair: Akihiro Mochizuki, I-CORE Technology, LLC
73.1: A Novel Pixel Structure for High-Transmittance and High-Image-Quality LCDs
Joon-Dong Lee, LG Display Co., Ltd., Gyeonggi-do, South Korea
73.2: A Novel TFT Pixel and Driving Scheme of Electrically Suppressed-Helix FLC for Active-Matrix FPDs
Tsz Kin Ho, Hong Kong University of Science and Technology, Kowloon, Hong Kong
73.3: Elimination of Image Flicker in an FFS Mode under Low-Frequency Driving
Tae-Hoon Yoon, Pusan National University, Busan, South Korea
73.4: Reflective LCD with High Reflectivity and Color Reproductivity for Reduced Eye Strain
Daisuke Kubota, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

Session 74: Touch Applications (Touch and Interactivity)
Friday, June 5 / 10:40 am – 12:00 pm / Room LL20EF
Chair: Deuksu Lee, LG Display Co., Ltd.
Co-Chair: Bob Senior, Canatu Oy
74.1L: Late-News Paper: Force-Sensing Touch Screens
Papu Maniar, New Degree Technology (NDT), Tempe, AZ, USA
74.2: A Novel Near-Field Three-Dimensional User-Interface Technology
Russ Gruhlke, Qualcomm Technologies, Santa Clara, CA, USA
74.3: TBA
74.4: Invited Paper: What Lies Beyond Multitouch?
Chris Harrison, Carnegie-Mellon University, Pittsburgh, PA, USA

Posters Session
Thursday, June 5 / 4:00 – 7:00 pm / Ballroom 220A

Active-Matrix Devices
P.1: Current-Supplying Driving Method of Active-Matrix Ionic Polymer-Metal Composites for Stereoscopic Displays
Mutsumi Kimura, Ryukoku University, Otsu, Japan
P.2: A Novel Method for LTPS Model Extraction with Hysteresis and Transient Current Analysis
Chen-Hao Kuo, AU Optronics Corp., Hsinchu, Taiwan, ROC
P.3: A New LTPS Pixel Circuit for Compensating the Variation of TFT Characteristics and Alleviating OLED Degradation
Wei-Chu Hsu, AU Optronics Corp., Hsinchu, Taiwan, ROC
P.4: Feasibility Study of a Dual-Gate Photosensitive TFT for Fingerprint-Sensor-Integrated Active-Matrix Display
Kai Wang, Sun Yat-Sen University – Carnegie-Mellon University Joint Institute of Engineering, Guangdong, China
Display Electronics

P.34: Curved OLED Displays to Effectively Enhance Natural3D
Shunpei Yamazaki, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

P.35: The Prospect Assessment of 65-in.+ TVs Based on the Size of Mainstream Living Rooms in China
Feng Jiang, BOE Technology Group Co., Ltd., Beijing, China

P.36: Subjective Size of News Presentation Shrinking with Recent Enlargement of Display Size in Japan
Sakuichi Ohtsuka, Kagoshima University, Kagoshima, Japan

P.157L: Late-News Poster: Subjective Assessment of Simulated Curved Displays for Ultra-High-Definition TV in a Large-Size and Wide-Viewing-Angle Environment
Sakuichi Ohtsuka, Kagoshima University, Kagoshima, Japan

P.37: A 5-Gbps/Lane Intra-Panel Interface for UHD TFT-LCD Application
Yu Chi Kang, AU Optronics Corp., Hsinchu, Taiwan, ROC

P.38: A Narrow-Gate Driver Circuit with a-Si TFTs for 8-in. WQXGA TFT-LCD Panel
Chun-Da Tu, AU Optronics Corp., Hsinchu, Taiwan, ROC

P.39: High-Speed and Power-Savings Interface for High-Resolution and Low-Power Display Panel
Chun-Jen Su, IIL Technology Corp., Hsinchu, Taiwan, ROC

Chi-Chu Chang, AU Optronics Corp., Hsinchu, Taiwan, ROC

P.41: New a-IGZO TFT Gate Driver Circuit with Threshold Voltage Shift Recovery Driving Scheme
Chih-Lung Lin, National Cheng Kung University, Tainan, Taiwan, ROC

P.42: MOVED to Paper 41.2

P.43: New Pixel Circuit to Improve Current Uniformity for High-Resolution AMOLED Displays
Chih-Lung Lin, National Cheng Kung University, Tainan, Taiwan, ROC

P.44: New Pixel Circuit with Simple Driving Scheme for AMOLED Displays
Chih-Lung Lin, National Cheng Kung University, Tainan, Taiwan, ROC

P.45: Simple Low-Noise Gate-Driven Circuit for Slim-Border and High-Resolution Applications
Chih-Lung Lin, National Cheng Kung University, Tainan, Taiwan, ROC

P.46: Row-Division Driving Scheme for AMOLED Display
Zhang Shengdong, Peking University, Shenzhen, China

P.47: Algorithm for Regional Mura Reduction by Using Gamma-Curve Transformation in LCD Panels
He Liang, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

P.48: A Simple Low-Temperature Workable a-Si:H TFT Integrated Gate Driver on Array
Liao Congwei, Peking University, Shenzhen, China

P.49: The Sequential Vcom Swing Circuit for Contrast Improvement
Kyuin Kim, LG Display Co. Ltd., Gyeonggi-do, South Korea

P.50: Integrated Gate-Driven Circuit Employing IGZO TFTs for AMOLED Compensative Pixel Driving
Kun Cao, BOE Technology Group Co., Ltd., Beijing, China

P.51: A Compact a-IGZO TFT-Based Digital-to-Analog Converter for Flexible Displays
Jin-Jang, Kyung Hee University, Seoul, South Korea

P.52: High-Gain Source Followers Driven by Corbino Oxide TFTs for Integrated Display Data Drivers
Jin-Jang, Kyung Hee University, Seoul, South Korea

P.158L: Late-News Poster: Development of a Silicon Process with Device Mobility >500 cm²/V-sec Suitable for Large-Area Display Backplane Using Embedded Single-Crystal Silicon Particles
Douglas Dykaar, DifTek Lasers, Inc., Waterloo, Ontario, Canada

Display Manufacturing

P.53: Study on the Interface between Passivation and Insulator Layers in TFTs by Using an Organic Process
Zhao Na, BOE Technology Group, Ltd., Hefei, China

P.54: WCS Material Development of the FIT M+ Structure to Reduce Power Consumption of Large-Sized UHD TVs
Chul Ho Park, LG Display Co., Ltd., Gyeonggi-do, South Korea

P.55: Process Development of Integrated Vcom and PAS Using Wet-Etching Bias for High-Resolution TFT-LCDs
Hee Young Kwack, LG Display Co., Ltd., Gyeonggi-do, South Korea

P.56: High-Resolution OLED Panel Fabricated by Ink-Jet-Printing Process
Peng Yu Chen, AU Optronics Corp., Hsinchu, Taiwan, ROC

P.57: OLED Lighting Devices Fabricated by Flexography Printing Consisting of Silver Nanowire and a Conducting Polymer
Yingtao Xie, Jiao Tong University, Shanghai, China

P.58: A Highly Stable Organic-TFT Array Fabricated on Glass Substrates Using Direct Photolithography
Tadahiro Furukawa, Yamagata University, Yamagata, Japan

P.59: A 6-in. Full-Color AMOLED with Improved Bonding Strength of Laser-Frit Encapsulations
Yi Chiu, Chunghwa Picture Tubes, Ltd., Taoyuan, Taiwan, ROC

P.60: High-Strength Glass for Mobile Devices
Hikaru Ikeda, Nippon Electric Glass Co., Ltd., Shiga, Japan

P.61: Novel Silicone-Based Optical Bonding Sheet with Enhanced Adhesivity
Kazutaka Hayashi, Asahi Glass Co., Ltd., Kanagawa, Japan

P.62: Silicone Adhesive Providing Protection, Waterproofing, and Rework Ability for Precision Assembly of Electronic Devices
Ryan Schneider, Dow Corning Corp., Midland, MI, USA

P.63: Effect of Glass Substrate Characteristics on Pattern Tolerance in Inverted-Staggered-Type TFT-Array Fabrication
Kazutaka Hayashi, Asahi Glass Co., Ltd., Kanagawa, Japan

P.64: Influence of Laser-Sealing Process on the Frit Heat-Treatment Performance
Alex Xiao, BOE Ordos Ordos Optoelectronics Co., Ltd., Ordos, China

P.65: Advanced Processing of ITO and IZO Thin Films on Flexible Glass
Manuela Junghaehnel, Fraunhofer Institute for Organic Electronics, Dresden, Germany

P.66: Crystallized Thin Film Using a Carbon-Nanotube Electron Beam (C-beam) for High-Performance TFTs
Kyu Chang Park, Kyung Hee University, Seoul, South Korea
Display Measurement

P.67: Viewing Angle and Imaging Multispectral Characterization of OLED Displays
Pier Boher, ELDIM, Herouville, France

P.68: An Efficient Simulation Algorithm for Analysis of Moiré Patterns in Display Systems
Taek-Sung Lee, KIST, Seoul, South Korea

P.69: Compensation of View Profile for More-Reliable Cross-Talk Value of a Multi-View 3D Display
Seondeok Hwang, Samsung Electronics Co., Gyeonggi-do, South Korea

P.70: Novel Sparkle Measurement Method for Use on TFT-LCDs
Yu-Han Chiang, AU Optronics Corp., Hsinchu, Taiwan, ROC

Display Systems

P.71: A 3D/2D Convertible Integral-Imaging Display with High Optical Efficiency
Qiong-Hua Wang, Sichuan University, Chengdu, China

P.72: Non-Unified Elemental Image-Array Generation Method for Moiré-Reduced Integral-Imaging System
Qiong-Hua Wang, Sichuan University, Chengdu, China

P.73: Estimation of Lenticular Lens Parameters Using a Single Image for Crosstalk Reduction of a 3D Multi-View Display
Hyoseok Hwang, Samsung Electronics Co., Gyeonggi-do, South Korea

Emissive Displays

P.81: Non-Quasi-Static Measurement in Random-Network Carbon-Nanotube TFTs for Next-Generation Displays
Changhee Lee, Seoul National University, Seoul, South Korea

P.82: Doubling the Light Outcoupling Efficiency of Quantum-Dot LEDs
Ruidong Zhu, University of Central Florida, Orlando, FL, USA

P.83: Oxygen Annealing Effect on the Enhancement of Green Emission from ZnO Nanorods Recrystallized Growth from Sputtered ZnO Thin Film
Chaoyang Li, Kochi University of Technology, Kami, Japan

P.131: Quantum-Dot-Enhanced Vivid-Color Liquid Displays
Zhenyu Luo, University of Central Florida, Orlando, FL, USA

E-Paper and Flexible Displays

P.86: High-Reliability Flexible OLED Display with Side-Sealing ALD Film
Shunpei Yamazaki, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

P.87: Applying Low-Temperature Thin-Film Encapsulation to a 6-in. IGZO Flexible AMOLED Display
Ming Lai, Chunghwa Picture Tubes, Ltd., Taoyuan, Taiwan, ROC

P.88: Enhancement of Electro-Optic Properties of Optically Isotropic Liquid-Crystal Device for Flexible Displays
Seung Hee Lee, Chonbuk National University, Jeonju, South Korea

E-Product Track

P.94: Effects of Nano-TiO₂ Particles on the Conversion Efficiency of a Quantum-Dot Light-Converting Nanocomposites
Wei Chen, South University of Science and Technology of China, Shenzhen, China

IIES Lighting Track

P.99: Phosphor-Converted White LED with High Angular CCT Uniformity by Adding Scattering Particles
Wei-Shen Liao, National Taiwan University, Taipei, Taiwan, ROC
Liquid-Crystal Technology

Alignment

P.92: Orientational Ordering of Nematic Liquid Crystal Aligned with a Directly Spinnable Carbon-Nanotube Web
Hyojin Lee, Chonbuk National University, Jeonbuk, South Korea

P.93: Highly Reliable Mobile LCD Using AIO, Deposited by Atomic Layer Deposition for a Side-Sealing Structure
Tetsuji Ishitani, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

P.94: Fast-Response-Time Liquid-Crystal Using a Nanofiber and Polyimide Alignment Mixture
Hyungmin Kim, Chonbuk National University, Jeonbuk, South Korea

P.95: Anchoring-Energy Enhancement and Pre-Tilt-Angle Control of Liquid-Crystal Alignment on Polymerized Surfaces
Libo Weng, Liquid Crystal Institute, Kent State University, Kent, OH, USA

Blue-Phase LCs

P.96: Blue-Phase Dual-View LCD Based on Patterned Electrodes
Qiong-Hua Wang, Sichuan University, Chengdu, China

P.97: An Ultra-Low-Voltage Blue-Phase LCD for Mobile Applications
Jiamin Yuan, University of Central Florida, Orlando, FL, USA

P.107: Enhanced Stability, Hysteresis, and Dark State of Polymer-Stabilized Blue-Phase III
Mis-su Kim, Kent State University, Kent, OH, USA

Display Modeling

P.98: A New Blue-Pixel Design for Improving Side-View Performance
Li-Xuan Chen, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

P.99: Increasing the Rewriting Speed of Optically Rewritable e-Paper by Using an Electric Field
Jihoon Sun, Hong Kong University of Science and Technology, Kowloon, Hong Kong

P.100: Novel Method for Curved-Display Cell-Gap Measurement
Wang-Shuo Kao, AU Optronics Corp., Hsinchu, Taiwan, ROC

P.101: Temperature-Dependent Behavioral Model of Twisted-Nematic Pixel in AMLCDs
Seung-Woo Lee, Kyung Hee University, Seoul, South Korea

FFS/IPS

P.102: Drive Scheme for Fast Gray-to-Gray Response in a FFS LC Cell
Tae-Hoon Yoon, Pusan National University, Busan, South Korea

P.103: Improvement of Light Leakage in ADS-Mode LCDs
Jaegon You, BOE Technology Group Co., Ltd., Beijing, China

P.104: A Novel Fringe-Field-Switching Mode with High Picture Quality
Limei Jiang, InfoVision Optoelectronics (Kunshan) Co., Ltd., Kunshan, China

P.105: Field-Induced Diffraction in Polymer-Stabilized IPS Liquid Crystals with Vertical Alignment
Libo Weng, Liquid Crystal Institute, Kent State University, Kent, OH, USA

P.106: A Simulation Method for an IPS-Mode Panel by Considering Light-Scattering Behavior
Kazunori Okamoto, Mitsubishi Electric Corp., Kyoto, Japan

FNew Display Components

P.110: Negative Dispersion of Birefringence in Smectic Liquid-Crystal/Polymer Composite
Seungbin Yang, Chonbuk National University, Jeonju, South Korea

P.111: An LCD with OLED-Like Luminance Distribution
Yating Gao, University of Central Florida, Orlando, FL, USA

P.112: A Wavelength Converter Based on Electrowetting
Qiong-Hua Wang, Sichuan University, Chengdu, China

Photo Alignment

P.113: Improvement in the Surface Anchoring Energy of the Photoalignment Layer in a LCD Using the Two-Band UV-Exposure Method
Gi-Dong Lee, Dong-A University, Busan, South Korea
P.114: Application of Photoalignment on Fringe-Field-Switching Cells
Tzu-Chieh Lin, Liquid Crystal Institute, Kent State University, Kent, OH, USA

P.115: New Photoalignment Material: Azimuthal Anchoring Energy Decreases at Very-High Photo-Induced Order Parameters
Alexander Muravsky, Institute of Chemistry of New Materials, NAS Belarus, Minsk, Belarus

P.116: Investigation of In-Plane Liquid-Crystal Photoalignment Technology for Large-Sized Panels
Yanjun Song, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

P.117: A Transmittance Study of the Photoaligned FFS LCD Mode
Yongchao Zhao, Shenzhen China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

P.118: Low-Voltage Drive Tunable Liquid-Crystal Lens Using Photoalignment Method
Chenxiang Zhao, Hong Kong University of Science and Technology, Kowloon, Hong Kong

Reflective Displays
P.119: Full-Color Reflective Display Using Cholesteric Heliconical Structure
Oleg Lavrentovich, Liquid Crystal Institute, Kent State University, Kent, OH, USA

P.120: Temperature Dependence of Dynamic Holographic Displays Using Doped Liquid Crystals
Yukai Su, Shanghai Jiao Tong University, Shanghai, China

P.121: Angular-Insensitive Color Filters Based on Compact Multilayered Film for Reflective Displays and Decorations
Chenyang Yang, Zhejiang University, Hangzhou, China

P.122: Liquid Optical Switch Based on Total Reflection
Qiong-Hua Wang, Sichuan University, Chengdu, China

P.123: Field-Sequential-Color Displays Based on Reflective Electrically Suppressed Helix Ferroelectric Liquid Crystal
Liangyu Shi, Hong Kong University of Science and Technology, Kowloon, Hong Kong

OLEDs
P.124: Excimer Formation in Organic Emitter Films Associated with a Molecular Orientation Promoted by Steric Hindrance
Jongwook Park, The Catholic University of Korea, Bucheon, South Korea

P.125: Maskless RGB Color Patterning via Dye Diffusion for Vacuum-Deposited Small-Molecule OLED Displays
Yoshitaka Kajiyama, University of Waterloo, Waterloo, Ontario, Canada

P.126: Stable Measurement of 10^7 g/m²/day Water-Vapor Transmission Rate in Barrier Materials by Intermittent Accumulation and Release by a Cold Trap
Yoshikazu Takahashi, TI Corp., Tsukuba, Japan

P.127: Highly Efficient Light-Extraction Technologies Applicable for Transparent OLED Lighting Using Corrugated Substrate
Satoshi Masuyama, JX Nippon Oil & Energy Corp., Yokohama, Japan

P.128: High-Efficiency Hybrid Buffer Layer in Inverted Top-Emitting OLEDs
Cheol Hwei Park, Korea University, Seoul, South Korea

P.129: Comprehensive Analysis of Luminous Decay Curves for Accelerated Lifetime Testing of OLED Devices
Toshihiro Yoshioka, Chemical Materials Evaluation Research Base (CEREBA), Tsukuba, Japan

P.130: Highly Conductive Graphene and PEDOT:PSS Hybrid Film with the Treatment by Hydroiodic Acid for ITO-Free Flexible OLEDs
Gufeng He, Jiao Tong University, Shanghai, China

P.131: Synthesis and Device Application of a Dibenzothiophene Derivative as Thermally Activated Delayed Fluorescence Material for Green Fluorescent OLEDs
Jun Yeob Lee, Dankook University, Yongin, South Korea

P.132: Solution-Processable Optical Nano-hybrid Films for Displays and Lighting
Norman Luechinger, Nanograde, Stäfa, Switzerland

P.133: Optimized Anodes for Flexible Large-Area OLEDs
Sasol Mühl, Liquid Crystal Institute, Kent State University, Kent, OH, USA

P.134: Synthesis of Host Material for Blue Phosphorescent OLEDs Derived from a Bicarbazole Backbone Structure
Jenny O'Connell, CSIRO Manufacturing Flagship, Clayton, Australia

P.135: Recombination-Zone Monitoring of Blue Phosphorescent OLEDs During Lifetime Test
Byeong Kwon Ju, Korea University, Seoul, South Korea

P.136: New Materials for OLEDs Displaying Thermally Activated Delayed Fluorescence
Jenny O'Connell, CSIRO Manufacturing Flagship, Clayton, Australia

P.137: Improved Light Extraction of OLEDs Using Embedded Nanoscale Vacuum Line Layer
Byeong Kwon Ju, Korea University, Seoul, South Korea

P.138: Metal-Oxide Thin Films for Hole-Injection Layers of OLEDs
Heeyeop Chae, Sungkyunkwan University, Suwon, South Korea

P.139: Improved Power Efficiency of OLEDs Using a Solution-Processed CuSCN Hole-Injection Layer
Changhee Lee, Seoul National University, Seoul, South Korea

P.140: A ¼-Wave Plate Film for OLED Panels
Kazuhiro Osato, ZEON Corp., Toyama, Japan

P.141: New High-Tg Hole Transporters: High Performance at High Luminance for Phosphorescent OLEDs
Poopathy Kathirgamanathan, Brunel University London, Uxbridge, UK

P.142: The Control of Optical Properties by Back-Cavity Effect in OLEDs with Multi-Cathode Structure
Akiyoshi Mikami, Kanazawa Institute of Technology, Nonoichi, Japan

P.143: Enhanced Efficiency and Low Haze in OLEDs by Nanoscale Corrugation
Byeong Kwon Ju, Korea University, Seoul, South Korea

P.144: Simple Light-Extraction Technology for Flexible OLEDs
Byeong Kwon Ju, Korea University, Seoul, South Korea

P.145: Optimizing High-Efficiency OLED Structure Based on Thermally Activated Delayed Fluorescence Emitter
Byeong Kwon Ju, Korea University, Seoul, South Korea

P.146: High-Efficiency Light Extraction from Top-Emitting OLEDs Employing Mask-Free Plasma-Etched Stochastic Polymer Surface
Yongwon Kwon, Seoul National University, Seoul, South Korea
Late-News Poster: Deposition and Structuring Processes of a Newly Developed Transparent Amorphous-Oxide Semiconductor for the Electron Transport and Injection Layers of AMOLEDs
Nobuhiro Nakamura, Asahi Glass Co. Ltd., Yokohama, Japan

Late-News Poster: Highly Efficient Inverted OLEDs Using a New Transparent Amorphous-Oxide Semiconductor
Jungwhan Kim, Tokyo Institute of Technology, Yokohama, Japan

Late-News Poster: New Silyl-Substituted Phosphorescent Materials for OLEDs
Jin-Sheng Lin, ITRI, Hsinchu, Taiwan, ROC

Late-News Poster: 13.3-in. WQHD AMOLED Notebook Utilizing High-Mobility BCE-Type TFTs
Fengjuan Liu, BOE Technology Group Co., Ltd., Beijing, China

Projection

A Method to Compensate Chromatic Aberration in Holography by Using Fourier-Transform Principle
Qiong-Hua Wang, Sichuan University, Chengdu, China

4-D Floating Holographic-Like Image Display
Kenneth Li, Wavien, Inc., Valencia, CA, USA

See-Through Projection Screen and Display System
Su Ying, National Tsing Hua University, Hsinchu, Taiwan, ROC

Speckle Contrast Reduction with Multi-Projection Units for a MEMS Scanning Laser Projector
Shih-Yu Tu, GIPO and National Taiwan University, Taipei, Taiwan, ROC

Color-Sequential Front-Lit LCoS for Wearable Displays
Kuan Yu Chen, Himax Display Inc, Tainan, Taiwan, ROC

Touch and Interactivity

Optimization of Molybdenum Oxides for Low-Reflectance Thin Films Using Numerical Simulation
Harald Koestenbauer, PLANSEE SE, Reutte, Austria

Skin-Resistance Measurement of a Static Capacitive Touch Panel
Reiji Hattori, Art, Science, and Technology Center for Cooperation Research, Kasuga, Japan

Wearable Displays

Organic TFTs Using Solution and Photolithography Process
Chun-Hao Tu, AU Optronics Corp., Hsinchu, Taiwan, ROC

Polymer LEDs Using the Dip-Coating Method on Flexible Fiber Substrates for Wearable Displays
Kyung Cheol Choi, KAIST, Daejeon, South Korea

Oxide TFTs on Fabric Substrates for Wearable Displays
Kyung Cheol Choi, KAIST, Daejeon, South Korea

Exploration of Coating and Alignment Methods for Making High-Performance Transparent Conductive Films with Silver-Nanowire Networks
Bo-Ru Yang, Sun Yat-Sen University, Guangzhou, China

A True Circular Flexible AMOLED Display for Wearable Applications
Ko-Ruey Jen, AU Optronics Corp., Hsinchu, Taiwan, ROC