



ADVANCE PROGRAM

2025 DISPLAY WEEK INTERNATIONAL SYMPOSIUM

May 13-16, 2025 (Tuesday – Friday)
San Jose Convention Center
San Jose, California, US

Sessions 1/2 General Meeting (Annual SID Business Meeting/Opening Remarks / Keynote Addresses)

Tuesday, May 13, 2025 / 8:00 – 10:20 am / Room 220A

Chair: *Hyun-Jae Kim, Yonsei University*

- 2.1: *Keynote Address 1*
- 2.2: *Keynote Address 2*
- 2.3: *Keynote Address 3*

Session 3: AR Display (AR/VR/MR)

Tuesday, May 13, 2025 / 11:10 AM - 12:30 PM / Room 220C

Chair: *Nikhil Balram, Mojo Vision*

Co-Chair: *Yun Wang, Meta*

- 3.1: **Invited Paper: A Laser-Illuminated Microdisplay for AR**
Zhujun Shi, Meta, Redmond, WA US
- 3.2: **Invited Paper: Dual-Edge Color Sequential Front-Lit LCOS for AR Glasses Applications**
Kuan-Hsu Fan-Chiang, Himax Display Inc., Tainan City, Taiwan Roc
- 3.3: **Invited Paper: Development of the World's Highest 5,644ppi Full-Color MicroLED Microdisplay for Consumer AR Glasses**
Chih-Ling Wu, PlayNitride Inc., Zhunan Township, Miaoli County, Taiwan Roc
- 3.4: **Holography and Photonic Integrated Circuit: An Alternative Technology for Power-Efficient Near-Eye Display Architecture**
Christophe Martinez, CEA - Leti, Grenoble, France

Session 4: Display Manufacturing Using Metal Oxide (Display Manufacturing)

Tuesday, May 13, 2025 / 11:10 AM - 12:30 PM / Room LL21CD

Chair: *Andriy Romanyuk, Glas Troesch AG*

Co-Chair: *Jakob Bollhalder, Evatec AG*

- 4.1: **Invited Paper: Enabling Next-Generation Metal-Oxide Backplane Technology by Atomic Layer Deposition**
Dejiu Fan, Applied Materials Inc., Santa Clara, CA US
- 4.2: **State-of-the-Art Gas Separation Function in Dynamic New Aristo TWIN PVD System Proven with IGZTO-IGZO Dual-Layer Thin-Film Transistor**
You-Ron Lin, Applied Materials, Tainan City, Taiwan ROC
- 4.3: **Silicon-Oxide Thin Films Deposited by Plasma-Enhanced Atomic Layer Deposition for High-Mobility Oxide TFT**
Myung soo Huh, Samsung Display Co., Ltd., Yongin, South Korea
- 4.4: **Finetuning the Microstructure of Metal-Oxide Targets to Optimize Sputter Behavior for Thin Films in TFT**
Henrik Schmidt, Plansee USA LLC, Franklin, MA US

Session 5: EL-QLED I (Emissive, Micro-LED, and Quantum-Dot Displays)

Tuesday, May 13, 2025 / 11:10 AM - 12:10 PM / Room LL21EF

Chair: *Seth Coe-Sullivan, NS Nanotech*

Co-Chair: *Peter Palomaki, Palomaki Consulting*

- 5.1: **Invited Paper: Progress and Challenges of QD-EL Technology**
Yiran Yan, TCL Research, Guangzhou, China
- 5.2: **Efficient Top-Emission Light-Emitting Diode Based on Cadmium-Free Quantum Dots**
Shuaibing Li, BOE Technology Group Co., Ltd., Beijing, China
- 5.3: **Highly Efficient and Bright Green Quantum-Rod Light-Emitting Diodes with Eliminated Charge Leakage**
Kumar Mallem, Hong Kong University of Science and Technology, Hong Kong, Hong Kong

Session 6: OLED Devices I (OLEDs)

Tuesday, May 13, 2025 / 11:10 AM - 12:50 PM / Room LL20BC

Chair: *Yifan Zhang, Apple, Inc.*

Co-Chair: *Denis Kondakov, DuPont*

- 6.1: **Invited Paper: Triplet-Triplet Annihilation for Low-Voltage Operation of Organic Light-Emitting Diode**

- Seiichiro Izawa, Institute of Science Tokyo, Yokohama, Japan
- 6.2: **Invited Paper: Design of OLED Capacitance by Material Combinations**
Alexander Schubert, Merck KGaA, Darmstadt, Germany, Darmstadt, Germany
- 6.3: **RGB Organic Electroluminescent Devices with High Color Purity and Directionality**
Fatima Bencheikh, KOALA Tech, Inc., Fukuoka, Japan
- 6.4: **Late-News Paper: Polaritonic OLEDs with TADF Emitters Enable Narrowband, Angle-Independent and Ultra-Efficient Emission for Brilliant Displays**
Andreas Mischok, University of Cologne, Köln, Germany

Session 7: Advanced Display Driving Circuits (*Display Electronics*)

Tuesday, May 13, 2025 / 11:10 AM - 12:30 PM / Room LL20A

Chair: Dr. Moon-Sang Hwang, Samsung Display Co., Ltd.

Co-Chair: Seung Woo Lee, Kyung Hee University

- 7.1: **Invited Paper: Study of AMOLED Source Fast-Charge Simulation**
Chenghao Liao, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- 7.2: **Effective 10-Bit OLED Driver IC with 11-Bit DAC, Double Capacitor-Coupled Adder, and Offset Calibration for Enhanced Panel Driving**
Minjae Lee, Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea
- 7.3: **A Novel 480Hz OLED Display with DFR Gate Driver for Premium Monitors**
Hong-Jae Shin, LG Display Co., Ltd., Paju, South Korea
- 7.4: **a-IGZO TFT-Based Selective Scan Driver with Stable Operation in Depletion Mode**
Seung-Woo Lee, Dept. of Information Display, Kyung Hee University, Seoul, South Korea

Session 8: Emerging Display Technologies and Applications (*Emerging Technologies and Applications*)

Tuesday, May 13, 2025 / 11:10 AM - 12:30 PM / Room LL20D

Chair: Ian Underwood, University of Edinburgh

Co-Chair: Jignesh Gandhi, Microsoft Corp

- 8.1: **Invited Paper: Saddle-Shaped Intelligent Cockpit Display Solution**
Wan-Tsang Wang, AUO Corporation, Hsinchu City, Taiwan Roc
- 8.2: **Beamforming of Antenna for ISAC Using Antenna-on-Display**
Keita Imura, Dai Nippon Printing co., Ltd., Fujimino, Japan
- 8.3: **Compact Light-Field Camera with Extended Depth-of-Field Using Electrically Depth-Switchable Geometric Phase Lens**
Hyeon-Su Jeong, Kyungpook National University, Daegu, South Korea
- 8.4: **Polarized Detection Using Patterned Polarizer Coated Quantum-Dot Detector**
Debjyoti Bhadra, Hong Kong University of Science and Technology, Hong Kong, Hong Kong

Session 9: Sustainable LCD Technology (*Liquid Crystal Technology / Sustainable Displays and Green Technologies*)

Tuesday, May 13, 2025 / 11:10 AM - 12:30 PM / Room LL21AB

Chair: WenFang Sung, AUO Corporation

Co-Chair: Matthew Sousa, 3M

- 9.1: **Carbon Emission Reduction in Polarizers for Achieving Carbon Neutrality**
Seong Il Kim, LG Display Co., Ltd., Seoul, South Korea
- 9.2: **A High-Transmittance FFS-LCD with Novel Panel Design**
Hongwei Zhao, XiaMen Tianma Microelectronics Co., Ltd., XiaMen, China
- 9.3: **Comprehensive Analysis of MNT Low-Power Consumption**
Ke Mao, Guangzhou China Star Optoelectronics Semiconductor Display Technology Co., Ltd., Guangzhou, China
- 9.4: **Invited Paper: LCD Modes for Sustainability and Energy Saving**
Achim Goetz, Merck KGaA, Darmstadt, Germany, Darmstadt, Germany

Session 10: AR/VR Optics (*AR/VR/MR*)

Tuesday, May 13, 2025 / 2:00 PM - 3:20 PM / Room 220C

Chair: Cheng Chen, Apple, Inc.

Co-Chair: Jisoo Hong, Korea Electronics Technology Institute

- 10.1: **Invited Paper: Aberration Improvement for Head-Mounted Displays with Holographic Optics and Polarized Laser Backlight**
Jin Hirosawa, Japan Display Inc., Mobara City, Japan
- 10.2: **Foveated Virtual-Reality Display Based on a Pancake Lens**
Zhenyi Luo, University of Central Florida, Orlando, FL US
- 10.3: **Invited Paper: Holographic AR HUD with Large FoV and Aberration Correction**
Ben Sherliker, Trulife Optics, london, United Kingdom
- 10.4: **Optimizing Photon-to-Photon Latency in MR Equipment Video See-Through Display: Design Guidelines and Tuning Strategies**
Lei Zhao, Yongjiang Laboratory, Ningbo, China

Session 11: Maskless Processes for OLED Panel Manufacturing (*Display Manufacturing / OLEDs*)

Tuesday, May 13, 2025 / 2:00 PM - 3:20 PM / Room LL21CD

Chair: *Toshiaki Arai, Japan Display, Inc.*

Co-Chair: *Neetu Chopra, Apple Inc*

- 11.1: **Invited Paper:** **1pL Inkjet Head and G8.5 Equipment Development for 350ppi OLED Display Panels**
Hidehiro Yoshida, Panasonic Production Engineering, Kadoma City, Osaka, Japan
- 11.2: **Development of Next-Generation Inkjet Printer for High-Resolution QD-OLED Display**
Cheong-Wan Min, Samsung Display Co., Ltd., Yongin, South Korea
- 11.3: **Invited Paper:** **Revolutionary MAX OLED Solution for Next-Generation OLED Displays**
Yusin Lin, Applied Materials Taiwan, Ltd., Hsinchu, Taiwan Roc
- 11.4: **Moiré-less Touch Sensor Film for High-Definition Displays**
Yuki Nakagawa, Advanced Functional Materials Development Center, FUJIFILM Corporation, Minamiashigari, Japan

Session 12: EL-QLED II (Emissive, Micro-LED, and Quantum-Dot Displays)

Tuesday, May 13, 2025 / 2:00 PM - 3:10 PM / Room LL21EF

Chair: *John Van Derlofske, 3M*

Co-Chair: *Zhuo Chen, BOE Technology Group Co., Ltd.*

- 12.1: **200% Resolution Improvement by Pixelization Using Multi-Color Device**
Jae-In Yoo, Sungkyunkwan University, Suwon, South Korea
- 12.2: **Ultra-High-Resolution Active-Matrix NanoLED Microdisplay by UV Photolithography**
Kazuya Tsujino, Sharp Corporation, Tenri, Nara, Japan
- 12.3: **High-Resolution, Intermixing-Free Quantum-Dot Patterning Technology for Electroluminescent Display Applications**
Moon Kee Choi, Ulsan National Institute of Science and Technology, Ulsan, South Korea

Session 13: OLED Devices II (OLEDs)

Tuesday, May 13, 2025 / 2:00 PM - 3:20 PM / Room LL20BC

Chair: *Franky So, North Carolina State University*

Co-Chair: *Chihaya Adachi, Kyushu University*

- 13.1: **Invited Paper:** **Organic Laser Indirectly Pumped by an Integrated OLED**
Kou Yoshida, University of St Andrews, St Andrews, United Kingdom
- 13.2: **Invited Paper:** **Impact of Spontaneous Orientation Polarization on Device Performance of Organic Light-Emitting Diodes**
Yutaka Noguchi, Meiji University, Kawasaki, Japan
- 13.3: **Invited Paper:** **Hybrid Tandem Perovskite-Organic Light-Emitting Diodes**
Tae-Woo Lee, Seoul National University, Seoul, South Korea
- 13.4: **Closing the Reliability Gap Between Blue and Green Phosphorescent Organic Light-Emitting Devices Using the Double-Sided Polariton-Enhanced Purcell Effect**
Haonan Zhao, University of Michigan, Ann Arbor, Ann Arbor, MI US

Session 14: Advanced Display Electronics Applications (Display Electronics)

Tuesday, May 13, 2025 / 2:00 PM - 3:00 PM / Room LL20A

Chair: *Hopil Bae, Apple, Inc.*

Co-Chair: *Soo-Yeon Lee, Seoul National University*

- 14.1: **Invited Paper:** **Method to Improve the Stability and Accuracy of LCD with Ambient Light Sensor**
Xiaohu Zhang, Beijing BOE Display Technology Co., Ltd., Beijing, China
- 14.2: **High-Sensitivity MicroLED-Based Fingerprint Recognition System Using Charge Integrators and Differential Sensing Method**
Seung-Woo Lee, Kyung Hee University, Seoul, South Korea
- 14.3: **Late-News Paper:** **Capacitive and Inductive Hybrid (Inductive-Inductive and Capacitive, LLC) Touch Sensor for Large-Area Bottom-Emission OLED Displays**
Jong-Seok Kim, Hanyang University, Ansan, South Korea

Session 15: Emerging Electronic Textile Technologies (Emerging Technologies and Applications / Flexible Displays and e-Paper)

Tuesday, May 13, 2025 / 2:00 PM - 3:20 PM / Room LL20D

Chair: *Fang-Cheng Lin, Apple, Inc.*

Co-Chair: *Maple Peng, Meta*

- 15.1: **Perovskite-Quantum-Wires-Based Full-Color Fiber Light-Emitting Diodes for Flexible Electronics**
Beitao Ren, The Hong Kong University of Science and Technology, Hong Kong, Hong Kong
- 15.2: **Electroluminescence Fiber Network for Motion-Sensing Textiles**
Jae-won Kim, Hanyang University, Seoul, South Korea
- 15.3: **Oxide-TFT-Integrated OLED Fibers for High-Performance Self-Powered Textile Displays**
Na-Young Kwon, Hanyang University, Seoul, South Korea
- 15.4: **Textile-Based IGZO TFTs with 2T1C Pixel Circuits for Wearable AMOLEDs**
Kyung Cheol Choi, Korea Advanced Institute of Science and Technology, Daejeon, South Korea

Session 16: Waste Reduction, Recycling, and Reuse (Liquid Crystal Technology / Sustainable Displays and Green Technologies)

Tuesday, May 13, 2025 / 2:00 PM - 3:20 PM / Room LL21AB

Chair: WenFang Sung, AUO Corporation

Co-Chair: Andriy Romanyuk, Glas Troesch AG

- 16.1: Comprehensive Waste Management Strategy: Risk Control of Waste Production and Disposal**
ChingYun Chang, AUO Corp., Hsinchu, Taiwan ROC
- 16.2: Enabling an Ecosystem for Recycling Waste Polarizers**
Pao-Ju Hsieh, MCL/ITRI, Hsinchu, Taiwan ROC
- 16.3: Invited Paper: Innovative Approaches to Lithium Recycle and Reuse of Chemical Strengthening Salt in Display Cover-Glass Manufacturing**
Yusuke Kataoka, AGC Inc. Innovative Technology Laboratories, Yokohama, Japan
- 16.4: Verification of Complete Circular Reuse of LCD Panel Components Through Non-Destructive Disassembly**
Tsung-Chou Hsu, Industrial Technology Research Institute, Taiwan, Hsinchu, Taiwan Roc

Session 17: VR Display (AR/VR/MR)

Tuesday, May 13, 2025 / 3:40 PM - 5:20 PM / Room 220C

Chair: Ruiqing Ma, Meta

Co-Chair: Joon Young Yang, LG Display Co. Ltd

- 17.1: Invited Paper: Evolution and Differentiation of OLED Microdisplay**
Tsutomu Shimayama, Sony Semiconductor Solutions Corporation, Atsugi, Japan
- 17.2: 5,009ppi, 10,000-cd/m², OLED/OS/Si Structure Display with Built-In CPU and Display Driver**
Yuki Tamatsukuri, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan
- 17.3: Invited Paper: Power-Saving Strategies in High-Resolution 4K VR LCD Technology**
Yung-Hsun Wu, Innolux CORP., Miaoli County.
- 17.4: Invited Paper: 0.9 -in. 6,020ppi 4Kx4K Silicon-Based Micro-OLED Display Technology**
Cong Ning, BOE Technology Group Co., Ltd., Beijing, China
- 17.5: Development of a Real 4Kx4K VR Display with Ultra-Wide Color Gamut and Panel Eye-Tracking Technology**
Lutong Wang, BOE Technology Group Co., Ltd., Beijing, China

Session 18: OLED Display Panel Manufacturing Processes/Equipment (Display Manufacturing)

Tuesday, May 13, 2025 / 3:40 PM - 5:10 PM / Room LL21CD

Chair: Neetu Chopra, Apple Inc

Co-Chair: Toshiaki Arai, Japan Display, Inc.

- 18.1: Development of a Linear Nozzle Source for 10.5G White OLED Mass Production System**
Myungwoon Choi, YAS Co., Ltd., Paju, South Korea
- 18.2: Efficient Methodology for Increasing Atomic Layer Deposition Throughput by Optimizing Deposition Rate of SiO₂ Film**
Tao Wang, BOE Technology Group Co., Ltd., Beijing, China
- 18.3: Comparative Cost, Benefit, and Adoption Analysis of Color Filter on Encapsulation (COE) to Circular Polarizers (C-POL) in Anti-Reflective Film Applications for OLED Displays**
Charles Annis, Omdia, Kyoto, Japan
- 18.4: A Novel Methodology for Evaluating Corrosion Failure Risk in OLED Panels**
Hyun Sung Park, Samsung Display Co., Ltd., Yongin, South Korea
- 18.5: Late-News Paper: Development of the In-Situ Thickness Monitoring and Feedback System for OLED Evaporation System.**
Eiichi Matsumoto, Canon Tokki Corporation, Niigata, Japan

Session 19: EL-QLED III (Emissive, Micro-LED, and Quantum-Dot Displays)

Tuesday, May 13, 2025 / 3:40 PM - 5:00 PM / Room LL21EF

Chair: Michele Ricks, EMD Electronics

Co-Chair: Peter Palomaki, Palomaki Consulting

- 19.1: Invited Paper: Advancing Inkjet-Printed Electroluminescent Quantum-Dot Displays Toward Commercialization: Improving Blue EL-QD Lifetime**
Sehun Kim, Samsung Display Co., Ltd., Yongin, South Korea
- 19.2: All Inkjet-Printed QD-LED Display with High Resolution of 264 ppi**
Dongjin Kang, Display Research Center, Samsung Display Co., Ltd, Yongin-City, South Korea
- 19.3: Solution-Processed Inverted 3-Stack Tandem QD-LEDs with RGB Layer**
Ha-Rim Jung, Sungkyunkwan University, Suwon, South Korea
- 19.4: Late-News Paper: Ester-Based Quantum Dot Ink for High-Performance Printed RGB Quantum Dot LED**
Wenjun Hou, TCL Corporate Research, Shenzhen, China

Session 20: OLED Common Layer Materials (OLEDs)

Tuesday, May 13, 2025 / 3:40 PM - 5:00 PM / Room LL20BC

Chair: Nicholas Thompson, Universal Display Corporation

Co-Chair: Yasunori Kijima, Huawei Technologies Japan K.K.

- 20.1: **Invited Paper:** Development of a Novel p-Dopant for OLED and Its Combination with HTL to Reduce Leakage Current
JungBum KIM, LG CHEM, Seoul, South Korea
- 20.2: **Invited Paper:** Maximizing Blue OLED Power Efficiency Using Ultra-Strong p-Dopants
Julia Stolz, CREDOXYS GmbH, Dresden, Germany
- 20.3: **Invited Paper:** Development of Functional Polymer Materials Based on Inkjet Printing for Next-Generation OLEDs
Jeahyun Shim, Solus Advanced Materials, Seongnam, South Korea
- 20.4: **Highly Reliable Blue Phosphor-Sensitized Fluorescent Tandem Organic Light-Emitting Diode Utilizing Spontaneous Orientation Polarization in Electron-Transport Layer**
Hiromitsu Kido, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

Session 21: Display Compensation Technologies (*Display Electronics*)

Tuesday, May 13, 2025 / 3:40 PM - 5:00 PM / Room LL20A

Chair: Jacob (Minhyuk) Choi, Meta

Co-Chair: Tsang-Hong Wang, BOE

- 21.1: **Invited Paper:** EM Compensation Applications and Results for Flexible Active-Matrix Organic Light-Emitting Diode Notebook Display
Zheng De Lai, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- 21.2: **A Color and Brightness Shift Compensation Method for OLED TDDI Panel Using Metal-Mesh Capacitive-Touch Sensor with Temperature Sensing**
Wan-Nung Tsung, Novatek Microelectronics Corp., Hsinchu, Taiwan ROC
- 21.3: **2D IRC Compensation Technology Research**
Chunhui Ren, Kunshan Govisionox Optoelectronics Co., Ltd., Jiangsu, China
- 21.4: **Method for Improving Burn-in for RGBW OLED Displays**
Yong-Su Yoo, LG Electronics, Seoul, South Korea

Session 22: Artificial Intelligence for Emerging Technologies and Applications (*Emerging Technologies and Applications / Artificial Intelligence Including Machine Learning for Imaging*)

Tuesday, May 13, 2025 / 3:40 PM - 5:00 PM / Room LL20D

Chair: Prof. Hyongsik Nam, Kyung Hee University

Co-Chair: Adi Abileah, Adi - Displays Consulting LLC

- 22.1: **Automated Malfunction Detection for Robotic Arms in Panel Manufacturing Using Deep Latent State Space Model**
Kaushik Balakrishnan, Samsung Display America Lab, San Jose, CA US
- 22.2: **Thumb Gesture Recognition Method Using Wrist EMG Signals with a Machine Learning Algorithm**
Yu Sheng Zeng, Novatek Microelectronics Corp., Hsinchu, Taiwan ROC
- 22.3: **BDLUT: Blind Image Denoising with Hardware-Optimized Look-Up Tables**
Boyu LI, Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong
- 22.4: **A Novel Color Temperature Prediction Algorithm by Machine Learning**
Yi-Ting Chung, Novatek Microelectronics Corp., Hsinchu, Taiwan ROC

Session 23: Low Power LCDs (*Liquid Crystal Technology*)

Tuesday, May 13, 2025 / 3:40 PM - 5:00 PM / Room LL21AB

Chair: Jenn Jia Su, AU Optronics Corporation

Co-Chair: Gang Xu, Jingce Electronics, USA

- 23.1: **Invited Paper:** Ultra-Low-Power FFS LCD with High Transmittance, Low Voltage and Low-Refresh-Rate Driving
Hiroaki Asagi, Sharp Corp., Nara, Japan
- 23.2: **Invited Paper:** Field-Sequential Color Display
Jia-Hong Wang, AUO Corporation, Hsinchu, Taiwan Roc
- 23.3: **Invited Paper:** Low-Power Consumption Liquid-Crystal Displays Based on Oxide Thin-Film Transistors
Wenming Ren, Nanjing BOE Display Technology Corp., Nanjing, China
- 23.4: **Invited Paper:** Viewing Angle Improvement of Reflective Liquid-Crystal Display by Optimizing the MRS Structure
Lina Wu, TCL Huaxing Optoelectronics Technology Co., Ltd., shenzhen, China

Session 24: AR Waveguide I (*AR/VR/MR*)

Wednesday, May 14, 2025 / 9:00 AM - 10:20 AM / Room 220C

Chair: Shin Tson Wu, University Of Central Florida, College of Optics and Photonics

Co-Chair: Yao-Wei Huang, National Yang Ming Chiao Tung University

- 24.1: **Invited Paper:** Toward Mass Production of Polarization Volume Hologram Waveguides
Cesar Clavero, Intermolecular Inc, a subsidiary of Merck KGaA, Darmstadt, Germany, San Jose, CA US
- 24.2: **Novel Polarization Conversion Effect in Polarization Volume Gratings for Waveguide-Based AR Displays**
Yuqiang Ding, University of Central Florida, Orlando, FL US
- 24.3: **AR Glasses with Single Microdisplay and Optics Based on Polarization Volume Hologram (PVH)**
Darwin Hu, Phasereality Lab., Sysview Technology, Inc., San Jose, CA US
- 24.4: **Invited Paper:** Advancements in Polarization Volume Gratings for Waveguide Display Technology
Yishi Weng, Southeast University, Nanjing, China

Session 25: Green Approach to Displays (Display Manufacturing / Sustainable Displays and Green Technologies)

Wednesday, May 14, 2025 / 9:00 AM - 10:00 AM / Room LL21CD

Chair: Seth Coe-Sullivan, NS Nanotech

Co-Chair: Joerg Winkler, PLANSEE SE

- 25.1: **Key Environmental Aspects of Sustainable Display and Labeling Mechanism**
Hung-Che Lin, AUO Corp., Hsinchu, Taiwan ROC
- 25.2: **Eco-Friendly NMP Free Polyimide for AMOLED Display Substrate**
Heekyun Shin, Samsung Display Co., Ltd., Yongin, South Korea
- 25.3: **Invited Paper: Carbon-Neutral Display: Linking to a Green Visual World**
Jian Guo, BOE Technology Group Co., Ltd., Beijing, China

Session 26: microLED Devices I (Emissive, Micro-LED, and Quantum-Dot Displays)

Wednesday, May 14, 2025 / 9:00 AM - 10:20 AM / Room LL21EF

Chair: Qun Yan, Fuzhou University

Co-Chair: Francois Templier, CEA-LETI

- 26.1: **Invited Paper: Breaking the Efficiency Bottleneck of microLEDs Through Nanoscale and Excitonic Engineering**
Zetian Mi, University of Michigan, Ann Arbor, MI
- 26.2: **Insulation and Planarization of Nanowire LEDs**
Seth Coe-Sullivan, NS Nanotech, Rolling Hills Estates, CA US
- 26.3: **Pyramidal MicroLEDs in the Same Material System Delivering RGB**
Ivan Martinovic, Polar Light Technologies AB, Linköping, Sweden
- 26.4: **Late-News Paper: A Bottom-Up InGaN Technology for Ultra-High Brightness R,G,B-Emitting MicroLEDs**
Mikael Björk, Hexagem AB, Lund, Sweden

Session 27: Novel Display Systems (Display Systems)

Wednesday, May 14, 2025 / 9:00 AM - 10:20 AM / Room LL20BC

Chair: Jean-Pierre Guillou, Apple, Inc.

Co-Chair: W. Hendrick, Collins Aerospace

- 27.1: **Liquid Light Projection and Interaction**
Aditi Majumder, University of California, Irvine, CA US
- 27.2: **Research on Key Technologies for Large Transparent MiniLED Display Devices**
Yang Yue, BOE, BeiJing, China
- 27.3: **Invited Paper: Technical and Industrialization Progress on ViP OLED Display Technology**
Yiming Xiao, Hefei Visionox Technology Co., Ltd., Hefei, China
- 27.4: **Deformation-Aware Luminance Compensation Using Gaussian-Weighted Kernels for Stretchable Displays**
Ye-In Park, Sogang University, Seoul, South Korea

Session 28: Innovative Display Quality Improvements (Display Electronics)

Wednesday, May 14, 2025 / 9:00 AM - 10:20 AM / Room LL20A

Chair: Carlin Vieri, Google

Co-Chair: Feng-Ting Pai, Novatek Microelectronics Corp.

- 28.1: **Evaluation and Improvement of the First Frame Ratio under Extremely Low Luminance in AMOLED Displays**
Sangmoo Choi, Google LLC, Mountain View, CA US
- 28.2: **Addressing Image Retention for MLED LTPS COG: A Compensation Method Based on Thermal Diffusion, Boundary Search, and Frame History**
Zheyuan Song, BOE Technology Group Co., Ltd, Beijing, China
- 28.3: **Frequency Decomposition-Based High-Performance Demura Processing with Low Memory Cost**
Pilseung Heo, Samsung Electronics Co., Ltd., Yongin, South Korea
- 28.4: **Aftermarket Detection of Line Defects in Display Panels Using New TDDI with Testing Mode**
Ya-ru Yang, National Yang Ming Chiao Tung University, Hsinchu, Taiwan ROC

Session 29: Emerging Medical Sensing and Displays I (Emerging Technologies and Applications)

Wednesday, May 14, 2025 / 9:00 AM - 10:00 AM / Room LL20D

Chair: Jong-Ho Hong, Samsung

Co-Chair: Abhishek Srivastava, Hong Kong University of Science & Technology

- 29.1: **Invited Paper: Practical Electronic Noses Through Integration of Selective Semipermeable Membranes with Organic Field Effect Transistors**
Bright Walker, Kyung Hee University, Seoul, South Korea
- 29.2: **Preparation, Mechanism Analysis, and Physiological Signal Monitoring Applications of a Flexible Sensing System Integrated with InSnZnO TFTs**
Mei Yang, School of Microelectronics, South China University of Technology, Guangzhou, China

- 29.3: **Perovskite-Based Artificial Vision System for In-Sensor Processing**
Shivam Kumar, Hong Kong University of Science and Technology, Hong Kong, Hong Kong
- 29.4: **Invited Paper: Autostereoscopic Displays for Healthcare Applications**
Tom Kimpe, Barco NV, Kortrijk, Belgium

Session 30: Advanced Display Measurement (Display Measurement)

Wednesday, May 14, 2025 / 9:00 AM - 10:00 AM / Room LL21AB

Chair: *Stephen Atwood, Consultant*

Co-Chair: *Jaejoong Kwon, Samsung Display*

- 30.1: **Measuring and Characterizing the Diffractive Component in Display Reflection**
Ingo Rotscholl, TechnoTeam Bildverarbeitung GmbH, Ilmenau, Germany
- 30.2: **Point-Spread Function Methods for Evaluating Display Reflection**
Dirk Hertel, E Ink Corp., Billerica, MA US
- 30.3: **Matched Moving-Window Averaging Filter**
Michael Becker, Display-Messtechnik & Systeme, Rottenburg am Neckar, Germany

Session 31: AR Waveguide II (AR/VR/MR / Display Systems)

Wednesday, May 14, 2025 / 10:40 AM - 12:00 PM / Room 220C

Chair: *Brian Schowengerdt, Meta*

Co-Chair: *Gary Jones, Nanoquantum Corporation*

- 31.1: **Invited Paper: High-Uniformity Full-Color Waveguides Fabricated by Nanoimprint Lithography for Near-Eye Display**
Yu-Ting Hu, AUO Corporation, Hsinchu, Taiwan Roc
- 31.2: **Comparison of Image Resolution Limits in Glass and Polymer Waveguides**
Kevin Nilsen, University of Central Florida, Orlando, FL US
- 31.3: **Invited Paper: Inverse Design on Meta-Optics for Augmented Reality and Depth Perception**
Yao-Wei Huang, National Yang Ming Chiao Tung University, Hsinchu, Taiwan ROC
- 31.4: **Invited Paper: Nanophotonics and AI for Augmented Reality and Imaging Applications**
Gun-Yeal Lee, Stanford University, Stanford, CA US

Session 32: Sustainable Value Chains (Display Manufacturing Sustainable Displays and Green Technologies)

Wednesday, May 14, 2025 / 10:40 AM - 12:00 PM / Room LL21CD

Chair: *Seth Coe-Sullivan, NS Nanotech*

Co-Chair: *Kazutaka Hayashi, AGC Inc.*

- 32.1: **Invited Paper: How Geopolitics Might Reshape Global Display Supply Chains**
Burkhard Slischka, ALLOS Semiconductors, Dresden, Germany
- 32.2: **Impact of Product Carbon Footprint Calculation Methodologies on Carbon Footprint Values**
Hung-Che Lin, AUO Corp., Hsinchu, Taiwan ROC
- 32.3: **Invited Paper: Availability and Sourcing of Cerium, Gallium, Indium, and Iridium: Key Critical Materials for the Display Market**
Guillaume Gélinas, Vital Materials, Cupertino, CA US
- 32.4: **Suppliers Carbon Footprint Investigation and Factors Comparative Analysis and Management: A Case Study of Metal Parts**
Hsin-Ying Chen, AUO Corp., Hsinchu, Taiwan ROC

Session 33: microLED Devices II (Emissive, Micro-LED, and Quantum-Dot Displays)

Wednesday, May 14, 2025 / 10:40 AM - 12:00 PM / Room LL21EF

Chair: *Jean-Jacques Drolet, Osram Opto Semiconductors*

Co-Chair: *Lars Samuelson, Lund University*

- 33.1: **Invited Paper: Impact of Confinement Effects in microLED Display for AR on Color Mixing**
Soeren Steudel, MICLEDI microdisplay BV, Leuven, Belgium
- 33.2: **High-Efficiency Low-Crosstalk Red AlGaInP MicroLEDs with Continuous Multiple Quantum Wells for Low-Power AR Glasses**
Yizhou Qian, University of Central Florida, Orlando, FL US
- 33.3: **Study on Indium Composition-Related Leakage Current Behavior Through Analysis of Spatial Electroluminescence Inhomogeneity in Blue and Green Micro Light-Emitting Diodes**
Jaekyun Kim, Hanyang University, Ansan, South Korea
- 33.4: **MicroLED in Series on a Single Chip for Display Performance Enhancement**
Hugues Lebrun, Aledia, Champagnier, France

Session 34: Backlight Systems (Display Systems)

Wednesday, May 14, 2025 / 10:40 AM - 12:00 PM / Room LL20BC

Chair: *Sam Phenix, Phenix Consulting*

Co-Chair: *Daming Xu, Apple Inc*

- 34.1: **Reduced Halo Effect and Narrowed Point Spread Function (PSF) Based on VR MiniLED Backlight**
Shibiao Wang, Beijing BOE CHUANGYUAN Technology Co., Ltd., Beijing, China
- 34.2: **Ultimate Effect of Blind Vias in LCD Module**

- Qi Jing, BOE Technology Group Co., Ltd., Beijing, China*
- 34.3: Hyper Narrow Bezel (HNB) LCD Video Wall Module with High Picture Quality and Reliability**
Changjia FU, BOE Technology Group Co., Ltd., Beijing, China
- 34.4: Composite MiniLED Backlight Packaging Structure with High Efficiency and Improved Uniformity**
Po-Jui Chen, Graduate Institute of Electronics Engineering, National Taiwan University, Taipei, Taiwan Roc

Session 35: Display Data Transmission and Processing (Ultra-High Bandwidth Display Data Transmission and Processing / Display Electronics)

Wednesday, May 14, 2025 / 10:40 AM - 12:00 M / Room LL20A

Chair: Paolo Sacchetto, Apple Inc

Co-Chair: Moon-Sang Hwang, Samsung Display Co., Ltd.

- 35.1: A Real-Time Visualization EMT Technique for 2D Eye Diagram Measurement with 99% Height Accuracy**
Junho Park, Samsung Electronics, Hwaseong, South Korea
- 35.2: Research on Anti-WiFi Noise Interference Technology for Display Driver IC**
Qianqian Lv, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- 35.3: A Novel Approach for Connector Modeling and Simulation Using Machine Learning**
Zaiyong Deng, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- 35.4: An Embedded DisplayPort 8.1Gbps RX PHY by Digital CDR with High ESD Capabilities at 12nm**
Yushyang Huang, Himax Technologies Inc., Hsinchu, Taiwan Roc

Session 36: Emerging Medical Sensing and Displays II (Emerging Technologies and Applications)

Wednesday, May 14, 2025 / 10:40 AM - 12:00 PM / Room LL20D

Chair: Jim Zhuang, Meta

Co-Chair: Susan Jones, Nulumina Corp.

- 36.1: The Application of AMOLED Near-Eye Display Technology in Enhancing Humanistic Care in Hospitals**
Xujian Zhu, Kunshan Govisionox Optoelectronics Co., Ltd., Kunshan, China
- 36.2: Dental Color Reproduction System with AI Object Recognition Technology**
Qi-Lun Wu, AUO Corp., Hsinchu, Taiwan ROC
- 36.3: CMOS-Compatible Artificial Photoreceptor Combining Photodiodes and Anti-Ferroelectric FETs for Continuous-to-Spike Light Signal Conversion**
Seunyeob Kim, Korea Advanced Institute of Science and Technology, Daejeon, South Korea
- 36.4: Bottom-Emitting Striped MicroLED Array Light Source for Uniform Optical Sectioning Structured Illumination Microscopy**
Oliver Durnan, Columbia University, New York, NY US

Session 37: Spatial / Temporal Measurement (Display Measurement)

Wednesday, May 14, 2025 / 10:40 AM - 12:00 PM / Room LL21AB

Chair: Dr. Jaejoong Kwon, Samsung Display

Co-Chair: Dr.-Ing. Ingo Roitscholl, TechnoTeam Bildverarbeitung GmbH

- 37.1: A Novel Wavelet-Based Flicker Metric for Variable Refresh-Rate Displays**
Hamid Reza Tohidypour, University of British Columbia, Vancouver, BC Canada
- 37.2: Enhancing VRR Flicker Index Using Tlme-Domain Analysis**
Hyosun Kim, Samsung Display Co., Ltd., Gyeonggi, South Korea
- 37.3: Study on the Influence of Scan Time on the Test Accuracy of High-ppi Fast LCD Product Response Time**
Xinfang Li, Beijing BOE CHUANGYUAN Technology Co., Ltd., Beijing, China
- 37.4: Research on the Measurement Method of Halo Effect in HDR LCDs**
Li Song, Everfine Corp., Hangzhou, China

Session 38: Novel uLED Display Systems (Display Systems / Emissive, Micro-LED, and Quantum-Dot Displays)

Wednesday, May 14, 2025 / 3:30 PM - 4:50 PM / Room 220B

Chair: Sergei Yakovenko, consultant

Co-Chair: Zhaojun Liu, Southern University of Science and Technology

- 38.1: Advanced HMI for AI-Enabled Hardware and Applications**
Reza Chaji, VueReal, Waterloo, ON Canada
- 38.2: 88-in. MicroLED Tiling Display for Commercial Display Application**
Xuan Cao, Chengdu Vistar Optoelectronics, Ltd., Chengdu, China
- 38.3: *Invited Paper*: Nova MicroLED for Next-Generation Display Applications**
Kuan Yung Liao, PlayNitride Inc., Miaoli County, Taiwan Roc
- 38.4: 0.26-in. LED Microdisplay Using Pixel Level Cu-Cu Connections of Transferred GaN/Si and CMOS Backplane Wafer**
Haruki Tsuchiya, Sony Semiconductor Solutions Corp., Atsugi, Japan

Session 39: Ultra-High Bandwidth for AR/VR/MR (AR/VR/MR / Ultra-High Bandwidth Display Data Transmission and Processing)

Wednesday, May 14, 2025 / 3:30 PM - 4:30 PM / Room 220C

Chair: *Chaohao Wang, YLab*

Co-Chair: *Gary Jones, Nanoquantum Corporation*

39.1: **Invited Paper:** **A Multi-Drop High-Speed Link with Foveated Up-Scaler to Reduce Wires and Data Bandwidth in LED-on-Silicon-Backplane for AR Glasses**

Hyun-Wook Lim, Samsung Display Co., Ltd., Yongin, South Korea

39.2: **Invited Paper:** **Sampled Analog Driving of High Frame-Rate UHD Displays**

Alex Henzen, HYPHY USA, Inc., Zoetermeer, Netherlands

39.3: **Invited Paper:** **Novel Method for Ultra-High-Resolution VR Display System**

Hao Zhang, BOE Technology Group Co., Ltd., Beijing, China

Session 40: Advanced TFT and Fingerprint Sensor Manufacturing (Display Manufacturing)

Wednesday, May 14, 2025 / 3:30 PM - 4:30 PM / Room LL21CD

Chair: *Tian Xiao, NEXT Biometrics Inc.*

Co-Chair: *Joerg Winkler, PLANSEE SE*

40.1: **A Study on Maskless Process of Metal Insulator Metal Storage Cap Doping**

In young Chung, Samsung Display Co., Ltd., Yongin, South Korea

40.2: **Highly Robust, Dual-Gate Polycrystalline In_{0.7}Ga_{0.3}O TFTs by Spray Pyrolysis for Low-Cost Manufacturing of OLED Display**

Jin Jang, Kyung Hee University, Seoul, South Korea

40.3: **Next-Generation Capacitive Fingerprint Sensing Device Using IGZO TFT Technology**

Toru Sakai, Touch Biometrix Ltd., Eindhoven, Netherlands

Session 41: QD Color Conversion (Emissive, Micro-LED, and Quantum-Dot Displays)

Wednesday, May 14, 2025 / 3:30 PM - 4:30 PM / Room LL21EF

Chair: *Yong Seog Kim, Hongik University*

Co-Chair: *Keunchan Oh, Samsung Display*

41.1: **Photolithographic Quantum-Dot OLED Display**

Rongzhen Cui, Yungu(Gu'an) Technology Co., Ltd., Hebei, China

41.2: **New-Type LED with G-QD@KSF and Its Application in Liquid-Crystal Displays**

Chengyi Xu, BOE Technology Group Co., Ltd., Hefei, China

41.3: **Quantum Dots for Thin-Film Optical Conversion**

David O'Brien, ams OSRAM, Hillsboro, OR US

Session 42: Liquid Crystal Technology for AR/VR/MR (Liquid Crystal Technology / AR/VR/MR)

Wednesday, May 14, 2025 / 3:30 PM - 4:50 PM / Room LL20BC

Chair: *Linghui Rao, Meta*

Co-Chair: *Michael Wittek, Merck KGaA*

42.1: **Spatial Light Modulator with Phase and Amplitude Control for Holographic Displays**

Fenglin Xi, Kent State University, Kent, OH US

42.2: **Invited Paper:** **Advanced LC Dimmer Technology for AR Glasses**

Chiu-lien Yang, Innolux CORP., Miaoli County, Taiwan Roc

42.3: **Correlation between LCD Dynamic Contrast and Pancake VR Optical System**

Jingran Niu, Beijing BOE CHUANGYUAN Technology Co., Ltd., Beijing, China

42.4: **Invited Paper:** **Multi-Notch High See-Through Bragg Mirror/Grating for MR/AR Applications**

Ali Altaqui, Meta Platforms Inc., Redmond, WA, US

Session 43: Micro Display Circuits and Driving (Display Electronics)

Wednesday, May 14, 2025 / 3:30 PM - 4:50 PM / Room LL20A

Chair: *Dr. Juhn Yoo, LG Display*

Co-Chair: *Wei Yao, Apple Inc*

43.1: **Invited Paper:** **The Latest Trends on CMOS Backplane for uLED_oS Microdisplay for AR Smart Glasses**

Myunghye Lee, Sapien Semiconductors Inc., Pangyo, South Korea

43.2: **Design of Micro-OLED Display Driver with OS/Si Structure Enabling Control of Multiple Functions Using 4 CPU-Embedded Drivers in Si Layer**

Minato Ito, Semiconductor Energy Laboratory Co., Ltd., Kanagawa, Japan

43.3: **Research and Optimal Driving Methodology for Image Quality Defects Occuring in 4K 1.3-in. OLED_oS**

Seongan Park, Samsung Display Co., Ltd., Yongin, South Korea

43.4: **4,105ppi LED_oS Pixel Circuit with an Analog Pulse-Width-Modulation Driving Method Employing a Dual-Sweep Signal for Wider Data Range**

Chanjin Park, Seoul National University, Seoul, South Korea

Session 44: Emerging Technologies for Medical Applications (Emerging Technologies and Applications)

Wednesday, May 14, 2025 / 3:30 PM - 4:50 PM / Room LL20D

Chair: *Maple Peng, Meta*

Co-Chair: *Vincent Gu, Apple, Inc.*

- 44.1: **Novel 40Hz Stimulated Brainwave Display for Reducing the Risk of Alzheimer's Disease**
Yi-Ting Liaw, AUO Corp., Hsinchu, Taiwan ROC
- 44.2: **Optogenetic Manipulation of Neurons Using Organic Light-Emitting Diodes**
Kukjoo Kim, Electronics and Telecommunications Research Institute, Daejeon, South Korea
- 44.3: **Toward a Virtual-Reality Diagnostic Suite for Cerebral Visual Impairment**
Cameron Wilson, School of Engineering, The University of Edinburgh, Edinburgh, Scotland Uk
- 44.4: **A 100-dpi Active-Matrix Tactile Sensor Based on Carbon Nanotube TFT for Haptic Applications**
Di Liu, Peking University, , China

Session 45: AR/VR Measurement (*Display Measurement*)

Wednesday, May 14, 2025 / 3:30 PM - 4:50 PM / Room LL21AB

Chair: *Thomas Fiske, Intuitive Surgical*

Co-Chair: *Chuck Yin, Meta*

- 45.1: **Temporo-Spatial Inaccuracy of Video See-Through Augmented-Reality Head-Mounted Displays**
Chumin Zhao, US FDA, Silver Spring, MD US
- 45.2: **Phase Retrieval for Spatial-Resolution Measurements of Head-Mounted Displays**
Ryan Beams, US FDA, Silver Spring, MD US
- 45.3: **Eye-Box Measurement for Augmented-Reality Waveguides with Pupil Expansion**
Li Xin, Yongjiang Laboratory, Ningbo, China
- 45.4: **Optical Measurement with Foveated Rendering and Dynamic Compensation in Eye-Tracking Near-Eye Displays**
Lei Zhao, Yongjiang Laboratory, Ningbo, China

Session 46: 3D Display Systems (*Display Systems*)

Thursday, May 15, 2025 / 9:00 AM - 10:40 AM / Room 220C

Chair: *David Eccles, Consultant*

Co-Chair: *Zong Qin, Sun Yat-Sen University*

- 46.1: **Commercial Implementation of Large Multi-Layer Displays**
YuTang Tsai, AUO Corp., Hsinchu, Taiwan ROC
- 46.2: **Reducing Moiré in Flat-Panel 3D Displays with a Random Parallax Barrier**
Xinxing Xia, Shanghai University, Shanghai, China
- 46.3: **A Design of Autostereoscopic 3D Display Based on High PPI OLED Screen**
Yiming Jia, Yungu (Gu'an) Technology Co., Ltd., Beijing, China
- 46.4: **Adaptive Crosstalk Reduction Method in Eye-Tracking Stereoscopic Three-Dimensional Displays Using Color Similarity and Inverse Filter**
Young Min Kim, Samsung Research, Samsung Electronics Co. Ltd., Seoul, South Korea
- 46.5: **Invited Paper: A Novel Technology to Achieve 3D Polarized Stereoscopic Display Utilizing Glass-Patterned Retarder**
JunYing Xiao, BOE Technology Group Co., Ltd., Beijing, China

Session 47: Display Manufacturing for AR/VR/MR (*Display Manufacturing*)

Thursday, May 15, 2025 / 9:00 AM - 10:20 AM / Room LL21CD

Chair: *Yung-Yu Hsu, Meta*

Co-Chair: *Jakob Bollhalder, Evatec AG*

- 47.1: **Triple-Nozzle Revolving Evaporation Source for RGB Direct Patterning OLEDoS Mass Production**
Sungmoon Kim, Depolab Inc., Paju, South Korea
- 47.2: **World's First OLED Display Using 12-in. IGZO-on-Si 3D Monolithic Integration**
Shou-Zen Chang, Powerchip Semiconductor Manufacturing Corp., Hsinchu, Taiwan ROC
- 47.3: **Submicron c-IGO TFT Exhibiting High Performance and Excellent Stability for Ultra-High-Resolution Display**
Jin Jang, Kyung Hee University, Seoul, South Korea
- 47.4: **Invited Paper: H-PDLC-Based Volume Holographic Gratings with High Diffraction Efficiency for Augmented Reality**
Huang Hua, BOE Technology Group Co. Ltd., Beijing, China

Session 48: Artificial Intelligence for Active Matrix Devices (*Active Matrix Devices / Artificial Intelligence Including Machine Learning for Imaging*)

Thursday, May 15, 2025 / 9:00 AM - 10:20 AM / Room LL21EF

Chair: *Eunkyung Koh, Samsung Display Research Center*

Co-Chair: *Jin-Seong Park, Hanyang University*

- 48.1: **Layout Engineering for Oxide Mura Mitigation in AMOLED Displays: A Data-Driven Causal Analysis**
kyongtae Park, AI TF of Mobile Business Samsung Display, Suwon, South Korea
- 48.2: **Improving the Reliability of High-Mobility Oxide TFTs Through TCAD Simulation of Optimizing Device Structure**
Hejing Sun, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- 48.3: **Prediction of Electrical Properties in LnIZO Thin-Film Transistors Based on Machine-Learning Solutions**
Xiaoliang Zhou, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- 48.4: **A Study on Reducing Transistor Electrical Characteristic Inspection Processing Time Using Machine Learning**

Hyungjin Lee, Samsung Display Co., Ltd., Gyeonggi, South Korea

Session 49: OLED Emissive Material (OLEDs)

Thursday, May 15, 2025 / 9:00 AM - 10:20 AM / Room LL20BC

Chair: *Jang Hyuk Kwon, Kyung Hee University*

Co-Chair: *Donghee Nam, Meta*

- 49.1: **Invited Paper:** **Hyperfluorescence: Groundbreaking Materials Advancement for Diverse Color-Gamut Applications**
Shuo-Hsien Cheng, Kyulux, Inc., Fukuoka City, Japan
- 49.2: **Highly Efficient and Stable Narrow-Band MR-TADF Emitter for Top-Emission Red OLED Approaching B.T.2020**
Jang Kwon, Kyung Hee University, Seoul South Korea
- 49.3: **Development of Wide Color-Gamut Green OLED Devices for Adobe and BT2020 Requirements**
Guomeng Li, Beijing Visionox Technology Co., Ltd., Beijing, China
- 49.4: **Highly Efficient and Stable Pure Green Phosphor-Sensitized MR-TADF Emitter for B.T.2020 Color Top-Emission OLEDs**
Jang Kwon, Kyung Hee University, Seoul, South Korea

Session 50: Automotive Display Performance Improvements (Automotive/Vehicular Displays and HMI Technologies)

Thursday, May 15, 2025 / 9:00 AM - 10:20 AM / Room LL20A

Chair: *Eric Margulies, Universal Display Corporation*

Co-Chair: *Jan Bauer, Karlsruhe University of Applied Sciences*

- 50.1: **Invited Paper:** **Novel Automotive Display Experiences Beyond Large Display Areas**
Kai Hohmann, Continental Automotive Technologies GmbH, Babenhausen, Germany
- 50.2: **The Development of Contrast Improvement Technology for Automotive Display**
Shinichi Terashita, Sharp Corp., Nara, Japan
- 50.3: **Numerical Simulation of Halo Artifact Caused by Local-Dimming and its Validation on AMOLED Displays**
Julian Ritter, Institute of Microelectronics, Saarland University, Saarbruecken, Germany
- 50.4: **Research on Heat Dissipation Design of Automotive High-Brightness Display with u-LED**
Zuojia Wang, TCL China Star Optoelectronics Technology Co., Ltd., Wuhan, China

Session 51: microLED Sensing Displays (Interactive Displays and Sensors / Emissive, Micro-LED, and Quantum-Dot Displays)

Thursday, May 15, 2025 / 9:00 AM - 10:20 AM / Room LL20D

Chair: *Hiroshi Haga, Tianma*

Co-Chair: *Francois Templier, CEA-LETI,*

- 51.1: **Invited Paper:** **True Color Control of a Multifunctional MicroLED Display**
Rainer Minixhofer, ams-OSRAM AG, Premstaetten, Austria
- 51.2: **Invited Paper:** **Touch Sensing and Graphics Processing in MicroIC Displays**
Chris Bower, X Display Company, Research Triangle Park, NC US
- 51.3: **Co-Integration of Organic Photodetector with MicroLED Dedicated to Multifunctional Display Application**
Michael Pelissier, CEA-LETI, Grenoble, France
- 51.4: **Integration of Ambient Light Sensors in Pixel Circuit for Transparent MicroLED Display Applications**
Yu-Chien Huang, AUO Corp., Hsinchu, Taiwan ROC

Session 52: Holographic Display Systems (Display Systems / Artificial Intelligence Including Machine Learning for Imaging)

Thursday, May 15, 2025 / 10:40 AM - 12:00 PM / Room 220C

Chair: *Brian Schowengerdt, Meta*

Co-Chair: *Hirotsugu Yamamoto, Utsunomiya University*

- 52.1: **Invited Paper:** **Shaping the Future with Holographic Transparent Displays: Transforming Mobility, Consumer, and Hometech Markets**
Martin Thom, ZEISS Microoptics, Jena, Germany
- 52.2: **Self-Interference Incoherent Digital Holography Enhanced by Quarter Waveplate Condition Geometric Phase Lens and Cholesteric Liquid-Crystal Circular Polarizing Filter for Full-Color Imaging**
Jin-Hyeok Seo, Kyungpook National University, Daegu, South Korea
- 52.3: **Angle Spectrum Expanded Light-Field Holography Display Using Spatial-Temporal Multiplex**
Wenqi Wang, Southeast University, Jiangsu, China
- 52.4: **Late-News Paper:** **Pupil-aware Holographic Display with Continuous Eyebox Expansion under Multi-Angle Illumination**
Xinxing Xia, Shanghai University, Shanghai, China

Session 53: Micro LED Display Manufacturing (Display Manufacturing)

Thursday, May 15, 2025 / 10:40 AM - 12:00 PM / Room LL21CD

Chair: *Dr. Chiwoo Kim, APS Holdings*

Co-Chair: *Oliver Haupt, Coherent Corp.*

- 53.1: **Invited Paper:** Novel Design of Microstructure Package Design to Enhance Optical Efficiency of MicroLED Displays
Yuanhao Sun, BOE Technology Group Co., Ltd., Beijing, China
- 53.2: **Research on LED Sorting, LED Mixing, and Image Quality**
Shan Wei Yang, BOE MLED Technology Co., Ltd., Beijing, China
- 53.3: **Peelable Inkjet Protective Film Process Development for MicroLED**
Jongduk Roh, Samsung Display Co., Ltd., Yongin, South Korea
- 53.4: **Development of Particle-Arrayed ACF for MicroLED**
Yasumasa Shin, Dexerials America Corporation, Santa Clara, CA

Session 54: New Oxide TFTs and Applications (Active Matrix Devices)

Thursday, May 15, 2025 / 10:40 AM - 12:00 PM / Room LL21EF

Chair: Prof. Man Wong, The Hong Kong University of Science & Technology

Co-Chair: Hyun Jae Kim, Yonsei University

- 54.1: **Invited Paper:** Amorphous p-Channel Tellurium Oxide Transistors
Yong-Young Noh, Pohang University of Science and Technology, Pohang, South Korea
- 54.2: **High-Performance P-Type Tellurium-Based Thin-Film Transistors on a 6-in. Wafer and Their Applications**
Sooji Nam, Electronics and Telecommunications Research Institute, Daejeon, South Korea
- 54.3: **Invited Paper:** IGZO-Based Synaptic Transistors for Neuromorphic Applications
Soo-Yeon Lee, Seoul National University, Seoul, South Korea
- 54.4: **Invited Paper:** Recent Progress, Opportunities, and Properties in Polycrystalline Oxide TFTs
Jae Kyeong Jeong, Hanyang Univ., Seoul, South Korea

Session 55: Blue OLED Materials (OLEDs)

Thursday, May 15, 2025 / 10:40 AM - 12:00 PM / Room LL20BC

Chair: Toshiaki Ikuta, SK materials JNC

Co-Chair: Anna Hayer, Merck KGaA

- 55.1: **Invited Paper:** Advanced Development Approaches in Fluorescent Blue OLED Materials and Device Design
Nasato Nakamura, Idemitsu Kosan Co., Ltd., Chiba, Japan
- 55.2: **Invited Paper:** Delocalizing Electron Distribution in Organic Molecules Towards High-Efficiency, Long-Lifetime Delayed Fluorescence
Dongdong Zhang, Tsinghua University, Department of Chemistry, Beijing, China
- 55.3: **Invited Paper:** Tandem Deep-Blue Phosphorescent OLED with High Blue Index Employing a Pt(II) Emitter
Guijie Li, Zhejiang University of Technology, Hangzhou, China
- 55.4: **Highly Efficient and Stable Blue Fluorescent OLED Using Dual EML System**
Satomi Tasaki, Idemitsu Kosan Co., Ltd., Chiba, Japan

Session 56: Automotive HUDs and Transparent Displays (Automotive/Vehicular Displays and HMI Technologies)

Thursday, May 15, 2025 / 10:40 AM - 12:00 PM / Room LL20A

Chair: Karlheinz Blankenbach, Pforzheim University

Co-Chair: Kai-Han Chang, General Motors

- 56.1: **Invited Paper:** Unlocking the Potential of Display Simulations in the Automotive Display Development
Markus Kreuzer, Phymore GmbH & TZ Electronic Systems GmbH, Hochdorf, Germany
- 56.2: **See-Through Image Quality Evaluation Index for Transparent Displays Considering Human Visual Sensitivity**
ChingLung Luo, Innolux Technology Development Center, Zhunan, Taiwan ROC
- 56.3: **Perceptual and Safety Aspects of Augmented-Reality Head-Up Displays in Cars**
Kjell Brunnström, RISE Research Institutes of Sweden AB, Kista, Sweden
- 56.4: **Diffraction Suppression Technique for Background Images in Curved Transparent Displays**
Yu-Wen Wang, National Taiwan University, Taipei, Taiwan ROC

Session 57: QD Sensing (Emissive, Micro-LED, and Quantum-Dot Displays)

Thursday, May 15, 2025 / 10:40 AM - 11:20 AM / Room LL20D

Chair: Larry Weber, Consultant

Co-Chair: Ioannis Kymissis, Columbia University

- 57.1: **Invited Paper:** Infrared Imaging and Sensing Using Colloidal Quantum-Dot Detectors
Piers Andrew, Emberion Limited, Cambridge, United Kingdom
- 57.2: **Invited Paper:** Colloidal Quantum Dot Infrared Sensors For Next-Generation Consumer Electronics
Pawel Malinowski, imec, Leuven, Belgium

Session 58: Visual Factors with AR/VR Displays (Applied Vision / AR/VR/MR)

Thursday, May 15, 2025 / 10:40 AM - 12:00 PM / Room LL21AB

Chair: Scott Murdison, Reality Labs at Meta

Co-Chair: David Hoffman, Apple, Inc.

- 58.1: **Influence of Temporal Frequency, Duty Ratio, and Eye-Stimulus Dynamics on Motion Artifacts**
Chang-Yeong Han, Ulsan National Institute of Science & Technology, Ulsan, South Korea
- 58.2: **Objective Metrics and Theoretical Model for Evaluating the Spatial Reality Reproduction Performance of Head-Mounted Display**
Liang Gu, GravityXR Electronics and Technology Co., Ltd., Ningbo, China
- 58.3: **Super Multi-View Near-Eye Display with Adjustable Point Light-Source Array**
Jae-Hyeung Park, Seoul National University, Seoul, South Korea
- 58.4: **Correcting Arbitrary Hybrid Defocus and Astigmatism for Near-Eye Displays Using Two-dimensionally Displaced Alvarez Lenses**
Zong Qin, School of Electronics and Information Technology, Sun Yat-Sen University, Guangzhou, China

Session 59: microLED Display Systems (*Emissive, Micro-LED, and Quantum-Dot Displays*)

Thursday, May 15, 2025 / 1:30 PM - 2:50 PM / Room 220B

Chair: *Jean-Jacques Drolet, Osram Opto Semiconductors*

Co-Chair: *Ioannis Kymissis, Columbia University*

- 59.1: **Invited Paper: Metasurface-Integrated Polarimetric Sensors in Foundry-Compatible Process**
Pawel Latawiec, Metalenz, Inc., Boston, MA US
- 59.2: **Invited Paper: Development of Transparent Flexible MicroLED Display with High-Precision Mass-Transfer Technology**
Kengo Shima, Tokai Rika co., Ltd., Aichi, Japan
- 59.3: **Status of the MicroLED Industry: Technology and Equipment Thrust Areas for Success**
Eric Virey, Yole Group, Portland, OR US
- 59.4: **Late-News Paper: Polychromic MicroLED for AR**
Qiming Li, Jade Bird Display Inc., Shanghai, China

Session 60: Light Field Display Systems (*Display Systems*)

Thursday, May 15, 2025 / 1:30 PM - 2:50 PM / Room 220C

Chair: *Yifan (Evan) Peng, HKU*

Co-Chair: *Shinichi Uehara, AGC Inc.*

- 60.1: **High-Resolution Aerial 3D Display Based on Lens-Enhanced Aerial Imaging by Retro-Reflection (LeAIRR) and Light-Field Display**
Kazuaki Takiyama, Utsunomiya University, Utsunomiya, Japan
- 60.2: **A Sixfold-Resolution Light-Field Display Using a Field-Sequential Color LCD and Optical Super-Resolution**
Zong Qin, Sun Yat-Sen University, Guangzhou, China
- 60.3: **Real-Time Per-Pixel Predistortion for Head-Tracked Light-Field Displays**
Tianyu Wu, Visual Experience Lab, North Carolina State University, Raleigh, NC US
- 60.4: **Improved Design to Reduce Sparkles in 3D Light-Field Displays**
Yaodong Wu, Tianma Microelectronics Co., Ltd., Shanghai, China

Session 61: Micro LED Display Manufacturing Heterointegration (*Display Manufacturing*)

Thursday, May 15, 2025 / 1:30 PM - 2:50 PM / Room LL21CD

Chair: *Xianqin Meng, BOE Technology Group Co., Ltd.*

Co-Chair: *Daniel Lee, AU Optronics Corp*

- 61.1: **Laser-Assisted Bonding for MicroLED Modules in Head-Up Display Applications**
Wenya Tian, BOE Technology Group Co., Ltd., Beijing, China
- 61.2: **Adhesion Mechanism of Ni-Au and Cu Layer in Electro-Less Nickel Immersion Gold Process for Chip-on-Glass MLED Backplane**
Ting Zeng, HeFei BOE RuiSheng Technology Co., Ltd., Hefei, China
- 61.3: **Failure Analysis in Dry Roll-Transferred MicroLEDs with Limited Prior Knowledge**
Chung-Seog Oh, Kumoh National Institute of Technology, Gumi, South Korea
- 61.4: **Improvement of Horizontal Line Defects in MicroLED Displays**
Xiao-Ping Yu, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

Session 62: High Mobility Oxide TFTs (*Active Matrix Devices*)

Thursday, May 15, 2025 / 1:30 PM - 2:50 PM / Room LL21EF

Chair: *Kwon-Shik Park, LG Display*

Co-Chair: *Junho Song, Korea University*

- 62.1: **Normally Off Top-Gate Self-Aligned Field-Effect Transistor Using Crystal InOx with Field-Effect Mobility of Around 100 cm²/Vs**
Yukinori Shima, Semiconductor Energy Laboratory Co., Ltd., Tohigi, Japan
- 62.2: **Poly-IGO TFT with Field-Effect Mobility over 40 cm²/Vs: Mobility Modeling and Self-Heating Simulation**
Mutsumi Kimura, Ryukoku University, Otsu, Japan
- 62.3: **Invited Paper: High-Mobility Metal-Oxide TFT Development for IT AMOLED Applications**
Fa-Hsyang Chen, Kunshan Govisionox Optoelectronics Co., Ltd., Jiangsu, China
- 62.4: **Late-News Paper: Contact-Controlled Transistors as Sufficiently Fast Switches for Active-Matrix Pixel Circuits**
Eva Bestelink, University of Surrey, Guildford, UK

Session 63: OLED Displays I (OLEDs)

Thursday, May 15, 2025 / 1:30 PM - 2:50 PM / Room LL20BC

Chair: *DZ Peng, Tianma*

Co-Chair: *Ji Ho Baek, LG Display*

- 63.1: **Invited Paper: Ultra-Efficient Fourth-Generation pTSF OLED Devices and Products**
Minghan Cai, Beijing Visionox Technology Co., Ltd., Beijing, China
- 63.2: **Shortening Time of Life-Time Evaluation for QD-OLED Through Low Gray Observation Condition**
Hee Kwang Song, Samsung Display Co., Ltd., Yongin, South Korea
- 63.3: **A Next Milestone in WOLED Technology for OLED TV and IT Displays: Enhancing Efficiency, Color Gamut, and Longevity**
Jung Keun Kim, LG Display Co., Ltd., Seoul, South Korea
- 63.4: **Lateral-Leakage Current Reduction in Tandem RGB OLED for Enhanced Low-Gray-Level Color Accuracy**
Jaeyoung Kwak, LG Display Co., Ltd., Seoul, South Korea

Session 64: Switchable Privacy Displays for Automotive Application (Automotive/Vehicular Displays and HMI Technologies / Liquid Crystal Technology)

Thursday, May 15, 2025 / 1:30 PM - 2:50 PM / Room LL20A

Chair: *Dr David Hermann, Volvo Car Corporation AB*

Co-Chair: *Dr Akihiro Mochizuki, I-CORE Technology, LLC*

- 64.1: **Invited Paper: Switchable Privacy Display with LC and collimated BL: Techniques and Measurements**
Karlheinz Blankenbach, Pforzheim University, Display Lab, Pforzheim, Germany
- 64.2: **Functionality Enhancement for e-Privacy Display**
Graham Woodgate, Rain Technology, Oxford, UK
- 64.3: **Switchable Viewing-Angle Control Film for Self-Emissive Displays**
Fung Hsu Wu, BenQ Materials Corp., Taoyuan, Taiwan ROC
- 64.4: **Switchable Viewing-Angle Control Using LC Technology for Automotive Display**
Min-Hsuan Chiu, AUO Corp., Hsinchu, Taiwan ROC

Session 65: Emerging Flexible Display Applications (Flexible Displays and e-Paper / Emerging Technologies and Applications)

Thursday, May 15, 2025 / 1:30 PM - 2:30 PM / Room LL20D

Chair: *Dr. Jeong-Ik Lee, ETRI*

Co-Chair: *Jignesh Gandhi, Microsoft Corp*

- 65.1: **Invited Paper: Skin-Conformable Displays and Sensors Using Soft and Stretchable Electronic Materials**
Naoji Matsuhisa, The University of Tokyo, Tokyo, Japan
- 65.2: **Invited Paper: Ultra-Flexible Monolithic Three-Dimensional CMOS Devices and Circuits**
Min Zhang, The Chinese University of Hong Kong, Shenzhen, Shenzhen, China
- 65.3: **Flexible Bifacial OLED-Based Photomedicine for User-Friendly Healthcare Platforms**
Kyung Cheol Choi, Korea Advanced Institute of Science and Technology, Daejeon, South Korea

Session 66: Visual Experience with Wide Color Gamut (Applied Vision / Display Measurement)

Thursday, May 15, 2025 / 1:30 PM - 2:50 PM / Room LL21AB

Chair: *Jerry Jia, Meta Reality Labs*

Co-Chair: *Jang Jin Yoo, LG Display*

- 66.1: **Invited Paper: How Creative Professionals Utilize Wide Color Gamut (WCG) and High Dynamic Range (HDR) Displays, and What Are the Applied Concerns?**
Jack Holm, Tarkus Imaging, Carmel, CA US
- 66.2: **From Scene to Display: A Quantitative Analysis of Real-World Color Gamut**
Farnaz Agahian, Samsung Display America Lab, San Jose, CA US
- 66.3: **Perceptual Color Attributes-Correlated 2D Color Gamut Volume Representation and Its Analysis**
Jae Sung Park, Visual Display Business, Samsung Electronics, Suwon, South Korea
- 66.4: **Evaluation of Display Color Chromaticity Gamut Efficiency Based on Real Object Colors**
Yoojin Kang, LG Display Co., Ltd., Seoul, South Korea

Session 67: QD PL-uLED (Emissive, Micro-LED, and Quantum-Dot Displays)

Thursday, May 15, 2025 / 3:10 PM - 4:30 PM / Room 220B

Chair: *Xiao Wei Sun, Southern University of Science and Technology*

Co-Chair: *Yajie Dong, University of Central Florida*

- 67.1: **Invited Paper: High Optical Density, High Efficiency Quantum Dot Photoresist for microLED applications**
Danielle Chamberlin, NanoPattern Technologies, Chicago, IL US
- 67.2: **Invited Paper: Full-Color Micro-LED Near-Eye Display Technology Based on Quantum Dot**
Jie Song, Saphlux, Inc., San Diego, CA US

- 67.3: **Improvement of Photostability and Clarification of Suitable Substituent Space of Zwitterionic Ligands for CsPbBr₃ Perovskite Nanocrystals**
Takuro Iizuka, Yamagata university, Yamagata, Japan
- 67.4: **High Accuracy Quantum Dots (QDs) Simulation Model for Color-Conversion MicroLED Display**
Koji Murata, Samsung R&D Institute Japan Co., Ltd., Yokohama, Japan

Session 68: Light Control Films and Cover Glasses (Display Systems)

Thursday, May 15, 2025 / 3:10 PM - 4:10 PM / Room 220C

Chair: *Dr Daming Xu, Apple Inc*

Co-Chair: *Hidekazu Hatanaka, Ushio Inc.*

- 68.1: **Brightness Enhancement Cover Glass for MicroLED Displays**
Shenping Li, Corning, Inc., Corning, NY US
- 68.2: **Impact of Light-Diffusion Film on the Sparkle of OLED Display**
Peng Cheng, Hefei Visionox Technology Co., Ltd., Hefei, China
- 68.3: **Improving Image Quality with Surface-Treated Random Depolarization Films**
Shizuki Sasaki, Keio Photonics Research Institute (KPRI), Keio University, Kawasaki, Japan

Session 69: Flexible Display Manufacturing (Display Manufacturing)

Thursday, May 15, 2025 / 3:10 PM - 4:30 PM / Room LL21CD

Chair: *Greg Gibson, nTact*

Co-Chair: *Oliver Haupt, Coherent Corp.*

- 69.1: **Ultrafast UV Laser Trimming Process Characteristics Analysis for Flexible Display Panels**
Youngjin Oh, Samsung Display, Asan, South Korea
- 69.2: **Organic Thin-Film Transistor Formulations Proven in Mass Production**
Stephen Bain, FlexEnable Technology, Ltd., Cambridge, UK
- 69.3: **Development of Black-Pixel Define Layer with Half-Tone Spacer Structure for Stylus-Compatible Foldable OLED Displays**
Nakcho Choi, Samsung Display Co., Ltd., Yongin, South Korea
- 69.4: **Development of Non-Contact Metrology for Thin Foldable Glass**
Junsu Park, Samsung Display Co., Ltd., Yongin, South Korea

Session 70: Reliable Oxide TFTs (Active Matrix Devices)

Thursday, May 15, 2025 / 3:10 PM - 4:30 PM / Room LL21EF

Chair: *Mike Hack, Universal Display Corporation*

Co-Chair: *Jin-Seong Park, Hanyang University*

- 70.1: **Invited Paper: Challenges of Atomic-Layer-Deposited Oxide Semiconductor Channels Beyond PVD: Material, Devices, and M3D Stacked Structures**
Jin-Seong Park, Hanyang University, Seoul,
- 70.2: **Invited Paper: Advanced Oxide TFT Technology for OLED Display by Applying ALD Process**
Seung-Chan Choi, LG Display Co., Ltd., Paju, South Korea
- 70.3: **Hydrogen-Free Oxide Thin-Film Transistor Toward Resolving Hydrogen-Associated Instability**
Mamoru Furuta, Kochi University of Technology, Kochi, Japan
- 70.4: **A Novel Fabrication Process for Enhancing the Reliability of IGZO Thin-Film Transistor**
Bokyoung Lee, LG Display Co., Ltd., Paju, South Korea

Session 71: OLED Displays II (OLEDs)

Thursday, May 15, 2025 / 3:10 PM - 4:10 PM / Room LL20BC

Chair: *CC Lee, Visionox*

Co-Chair: *Yuan-Chun Wu, China Star Optoelectronics*

- 71.1: **Analysis of Viewing Angle Properties on TEOLEDs Adopting Curved Anode Structure**
Ji-Sub Park, LG Display Co., Ltd., Gumi, South Korea
- 71.2: **Reality vs. Simulation in Black Matrixless Solution of Color Filter on Encapsulation Technology**
Cui-Cui Liang, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- 71.3: **Patterned Black Matrix on Cathode for COE OLED Display**
Zhibin Wang, OTI Lumionics, Inc., Toronto, ON Canada

Session 72: Artificial Intelligence for Automotive Displays and HMI Technologies (Automotive/Vehicular Displays and HMI Technologies / Artificial Intelligence Including Machine Learning for Imaging)

Thursday, May 15, 2025 / 3:10 PM - 4:30 PM / Room LL20A

Chair: *Prof. Hyungsik Nam, Kyung Hee University*

Co-Chair: *Rashmi Rao, Harman International*

- 72.1: **The PathSync Intelligent Transparent Display Navigation System**
Chao-Ming Yu, Industrial Technology Research Institute., Hsinchu, Taiwan ROC
- 72.2: **Real-Time ADAS Visualization Using DL-GSA-Based Computer-Generated Holography**

- Chien Yu Chen, National Taiwan University Of Science And Technology, Taipei, Taiwan ROC
- 72.3: **Fully Convolutional Transformer-Based Speech Emotion Recognition for Automotive Systems**
Hanwook Chung, Forvia IRYStec, Inc., Montreal, PQ Canada
- 72.4: **Improvement of Image Quality of Infrared Camera Behind LCD Screen and Its Application in DMS**
Yating Wen, Shenzhen China Star Optoelectronics Technology Co., Ltd., Guangdong, China

Session 73: Modeling Color Appearance (Applied Vision)

Thursday, May 15, 2025 / 3:10 PM - 4:30 PM / Room LL21AB

Chair: Chien-Yu Chen, National Taiwan University of Science & Technology

Co-Chair: Youn Jin Kim, Apple, Inc

- 73.1: **Brightness Scales Above and Below Reference White via Maximum Likelihood Difference Scaling (MLDS)**
Youngshin Kwak, Ulsan National Institute of Science and Technology, Ulsan, South Korea
- 73.2: **Impact on the Observer Metameric Failure by Adding a White Channel to RGB-Primary Display**
Jang Jin Yoo, LG Display Co., Ltd., Seoul, South Korea
- 73.3: **Reproducing Color for Human Observers: The Challenges of Individual Differences and How to Compensate for Them**
Andrew Stockman, UCL Institute of Ophthalmology, London, UK
- 73.4: **Color-Matching Function Affecting Color Reproduction in Displays**
Ronnier Luo, State Key Laboratory of Extreme Photonics and Instrumentation, Hangzhou, China

Session 74: Novel Structure TFTs (Active Matrix Devices)

Friday, May 16, 2025 / 9:00 AM - 10:00 AM / Room 220B

Chair: Takashi Nakamura, Japan Display Inc.

Co-Chair: Cheonhong Kim, Meta

- 74.1: **Invited Paper: Stacked Vertical Oxide TFTs for Ultra-High Resolution Display**
Chi-Sun Hwang, ETRI, Daejeon, South Korea
- 74.2: **Ultra-High Output Current of Oxide Vertical TFTs Using a-IGZO by Sputter**
Chuanbao Luo, Corp.Shenzhen China Star Optoelectronics Semiconductor Display Technology Co., Ltd., Guangdong, China
- 74.3: **Invited Paper: Polycrystalline Indium Oxide Thin-Film Transistors Formed by Solid-Phase Crystallization**
Mamoru Furuta, Kochi University of Technology, Kochi, Japan

Session 75: Emerging AR/VR Technology (AR/VR/MR / Emerging Technologies and Applications)

Friday, May 16, 2025 / 9:00 AM - 10:20 AM / Room 220C

Chair: Yan Li, Shanghai Jiao Tong University

Co-Chair: Fang-Cheng Lin, Apple, Inc.

- 75.1: **Invited Paper: Advancing Near-Eye Light-Field Displays Using Meta-Optics**
Jian-Wen Dong, Sun Yat-sen university, Guangzhou, China
- 75.2: **Lightweight, Thin and High-Performance Polarization Modulator for Varifocal Liquid-Crystal Lens System**
Daisuke Minami, Sharp Corp., Nara, Japan
- 75.3: **Invited Paper: Multifocal Display System for Near-Eye Device and Optimal Decomposition Algorithm for Video Contents**
Chun-Won Byun, Electronics and Telecommunications Research Institute, Daejeon, South Korea
- 75.4: **Fast-Switchable Polarization-Dependent Bifocal Lenses for AR Displays**
Ming Cheng, Hong Kong University of Science and Technology, Hong Kong, Hong Kong

Session 76: Artificial Intelligence / Machine Learning (Display Manufacturing / Artificial Intelligence Including Machine Learning for Imaging)

Friday, May 16, 2025 / 9:00 AM - 10:00 AM / Room LL21CD

Chair: Simon Kurmann, Helbling

Co-Chair: Kazutaka Hayashi, AGC Inc.

- 76.1: **Using Machine Learning Solutions to Accurately Classify Imbalanced LCM Aging Data to Reduce Defect Rates**
Jing Ba, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- 76.2: **Defect Classification Algorithms for Display Manufacturing Based on the Convolutional Neural Network Mixture-of-Experts Model**
Yunlong Li, BOE Technology Group Co., Ltd., Beijing, China
- 76.3: **TEG Electrical Virtual Measurement and Monitoring Based on Interpretable Machine Learning Method**
Jing Ba, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

Session 77: Flexible Displays (Flexible Displays and e-Paper)

Friday, May 16, 2025 / 9:00 AM - 10:30 AM / Room LL21EF

Chair: Yong Taek Hong, Seoul National University

Co-Chair: Shiming Shi, BOE Technology Group Co., Ltd.

- 77.1: **Invited Paper: Zero-Bezel Flexible MicroLED Display Using Through-Plastic Vias**
Hiroshi Tsuji, NHK Science & Technology Research Laboratories, Tokyo, Japan

- 77.2: **Trifold OLED Display Fabricated Through Low-Temperature Process Using Short-Channel Top-Gate Self-Aligned Field-Effect Transistor with Crystal IO**
Masataka Nakada, Semiconductor Energy Laboratory Co., Ltd., Tochigi, Japan
- 77.3: **Highly Recoverable and Robust Rollable AMOLED Display with Smart Elastomer Materials**
Taewoong Kim, Samsung Display Co., Ltd., Yongin, South Korea
- 77.4: **Mesh-Patterned Silver Electrode via Electrohydrodynamic Printing for Transparent and Flexible Quantum-Dot Light-Emitting Diodes**
Yongtaek Hong, Seoul National University, Seoul, South Korea
- P.261: **Late-News Paper: Quantitative Assessment of Hinge Creases in Folding Devices**
Joy Banerjee, Corning Inc., Painted Post, NY, US

Session 78: High Image Quality (Liquid Crystal Technology)

Friday, May 16, 2025 / 9:00 AM - 10:20 AM / Room LL20BC

Chair: *Achim Goetz, Merck Electronics KGaA*

Co-Chair: *Philip Chen, National Yang Ming Chiao Tung University*

- 78.1: **Invited Paper: A Novel UV2A Alignment Technique for Improving Skin Color Washout**
Lei Liu, BOE Technology Group Co., Ltd., Beijing, China
- 78.2: **Invited Paper: Latest LC Materials for High-Contrast-Ratio TV and IT Displays**
Sven Laut, Merck KGaA, Darmstadt, Germany, Darmstadt, Germany
- 78.3: **High Picture Quality of LCD via WHVA Technology**
Jing Liu, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- 78.4: **Resolution Doubling by Liquid-Crystal-Based Optical Shift**
Yang Zeng, Tianma Microelectronics Co., Ltd., Shanghai, China

Session 79: Automotive Backplane Drive Electronics (Automotive/Vehicular Displays and HMI Technologies)

Friday, May 16, 2025 / 9:00 AM - 10:20 AM / Room LL20A

Chair: *Darren Kim, Harman International*

Co-Chair: *Taewoong Kim, Samsung Display Co.*

- 79.1: **Sensitivity Analysis of IPS Panels on Mechanical Stress**
Markus Weber, Continental Automotive Technologies GmbH, Babenhausen, Germany
- 79.2: **Large-Area Single-Crystal Actuator for Multifunctional Haptic Displays**
Seung Hyun Sung, LG Display Co., Ltd., Seoul, South Korea
- 79.3: **Development of Low-Cost and Narrow-Border Automotive Panel by DeMUX of IGZO-TFT**
Kengo Hara, Sharp Corp., Mie, Japan
- 79.4: **Video Transport Topologies for Ultra-High Resolution Automotive Displays**
Jon Rose, Analog Devices, Colorado Springs, CO US

Session 80: Optical Fingerprint Sensing OLED Displays (Interactive Displays and Sensors)

Friday, May 16, 2025 / 9:00 AM - 10:20 AM / Room LL20D

Chair: *Patrick Worfolk, Advanced Micro Devices, Inc.*

Co-Chair: *Derek Solven, Synaptics, Coquitlam*

- 80.1: **Sensor OLED Display-Based Mobile Cardiovascular Health Monitor**
Chul Kim, Samsung Display Co., Ltd., Giheung, South Korea
- 80.2: **A High-Resolution In-Cell Fingerprint Display with New Isolation Structure**
Xiaowei Xu, Visionox Technology, Inc., Gu'an, China
- 80.3: **High-Performance Organic Photodetectors with Buffer Layers Suitable for In-Cell Fingerprint-Sensing Display**
Xiaokang Zhou, Visionox Technology, Inc., Gu'an, China
- 80.4: **Amorphous Silicon Top-Gate-Gap TFTs for Front-Illuminated Optical Sensors**
Hejing Zhang, Chongqing Advanced Photoelectric Display Technology Research Institute, Chongqing, China

Session 81: Glass-Based Semiconductor IC Packaging for Chiplet Integration (Emerging Technologies and Applications / Heterogeneous Integration on Glass for Emerging Applications)

Friday, May 16, 2025 / 9:00 AM - 10:00 AM / Room LL21AB

Chair: *Arokia Nathan, Darwin College, University of Cambridge*

Co-Chair: *Bradley Bowden, Corning Research and Development Corporation*

- 81.1: **Preparation Process of Through-Glass Via Based on Laser-Induced Deep Etching**
Dong Ming Xing, Beijing BOE Sensor Technology Co., Ltd., Beijing, China
- 81.2: **Effect of Electroplating Additives on Copper Protrusion of Metallized Through-Glass Vias (TGVs)**
Qichang An, BOE Sensor Technology Company, Ltd., Beijing, China
- 81.3: **Invited Paper: Large Scale Glass Substrate for High Performance Computing Application**
Satoru Kuramochi, Dai Nippon Printing Co., Ltd., Chiba, Japan
- 81.4: **Invited Paper: Glass Substrates and Interposers: Wafer and Panel Scale Manufacturing Processes and Applications**
Venky Sundaram, 3D System Scaling LLC., Johns Creek, GA, US

Session 82: Micro-LED Driving Circuit (Active Matrix Devices)

Friday, May 16, 2025 / 10:40 AM - 12:00 PM / Room 220B

Chair: James Chang, Apple, Inc.

Co-Chair: Ivan Wu, AU Optronics Corp

- 82.1: **High-Current LTPS-TFT Backplane Structure for 136-in. UHD Seamless Tiling MicroLED Displays**
Kummi Oh, LG Display Co., Ltd., Paju., South Korea
- 82.2: **Invited Paper: Optimization Design of Pixel Circuits to Drive Innovative MicroLED Displays**
Ya-Ling Chen, AUO Corporation, Hsinchu, Taiwan Roc
- 82.3: **High-Speed Driving Pixel Circuit for Medium-Size NanoLED Displays Based on Oxide TFTs**
Kohhei Tanaka, Sharp Corporation, Nara, Japan
- 82.4: **Invited Paper: Research on Patterned Cu Growth in Electrochemical Process of Large Glass Substrate**
Jian Tian, BOE RuiSheng Technology Co., Ltd., Hefei, China

Session 83: Artificial Intelligence for AR/VR/MR (AR/VR/MR / Artificial Intelligence Including Machine Learning for Imaging)

Friday, May 16, 2025 / 10:40 AM - 12:00 PM / Room 220C

Chair: Jisoo Hong, Korea Electronics Technology Institute

Co-Chair: Yi Pai Huang, Apple, Inc.

- 83.1: **Invited Paper: AI 3D Selfie: Real-Time Single-Image 3D Face Reconstruction for Light-Field Displays**
Jonghyun Kim, NVIDIA, Santa Clara, CA
- 83.2: **Deep Learning-Based Self-Interference Incoherent Digital Holography Encoding for Optical Reconstruction**
Sung-Wook Min, Kyung Hee University, Seoul, South Korea
- 83.3: **Neural Network-Empowered Hologram Compression for Computational Near-Eye Displays**
Hyunmin Ban, University of Hong Kong, Hong Kong, Hong Kong
- 83.4: **Invited Paper: Filter-Free 3D HoloNet with Hardware-Aware Calibration**
Yifan Peng, University of Hong Kong, Hong Kong, Hong Kong

Session 84: Automotive Display Manufacturing (Display Manufacturing)

Friday, May 16, 2025 / 10:40 AM - 12:00 PM / Room LL21CD

Chair: Bradley Bowden, Corning Research and Development Corporation

Co-Chair: Andriy Romanyuk, Glas Troesch AG

- 84.1: **Volume Manufacturing of Head-Up Displays with Step-and-Repeat Displacement Talbot Lithography**
Kelsey Wooley, Eulitha US, Remond, WA US
- 84.2: **A Study on Black-Matrix CMP Technology for Automotive On-Cell Louver Micro Structure**
Byoungkwon Choo, Samsung Display Co., Ltd., Yongin, South Korea
- 84.3: **Uniform Adhesion Method of Curved Large-Area Materials in Vacuum Chamber**
Taeyoung Park, Samsung Display Co., Ltd., Hwaseong, South Korea
- 84.4: **Achieving Low Chroma Edges in Curved Cover Glass with Anti-Reflection and Anti-Scratch Properties**
Juyoung Yoon, Samsung Display Co., Ltd., Yongin, South Korea

Session 85: Stretchable Displays (Flexible Displays and e-Paper)

Friday, May 16, 2025 / 10:40 AM - 12:00 PM / Room LL21EF

Chair: Kyung Cheol Choi, KAIST

Co-Chair: Jennifer Lin, AUO Corporation

- 85.1: **Invited Paper: First 200ppi Stretchable MicroLED Display with Serpentine-Shaped Bridge Designs**
Jangyeol Yoon, Samsung Display, Yongin, South Korea
- 85.2: **Invited Paper: 3D Approaches to Stretchable Displays with High Geometrical Fill Factor**
Seunghyup Yoo, KAIST, Daejeon, South Korea
- 85.3: **Invited Paper: Magnetically, Vertically-Aligned Conducting Ferromagnetic Particles for Electrical and Heat Conduction in Stretchable Electronics**
Yongtaek Hong, Seoul National University, Seoul, South Korea
- 85.4: **Tacky-Free Stretchable Cover Window with Anti-Scratch Property**
Sejin Jang, LG Display Co., Ltd., Seoul, South Korea

Session 86: Novel LC Technologies (Liquid Crystal Technology)

Friday, May 16, 2025 / 10:40 AM - 12:00 PM / Room LL20BC

Chair: Koichi Miyachi, JSR Corporation

Co-Chair: Yoshitomo Isomae, Sony Semiconductor Solutions Co.

- 86.1: **Invited Paper: Ferroelectric Nematic Liquid Crystals: Mixtures and Applications**
Rachel Tuffin, Merck KGaA, Darmstadt, Germany, Darmstadt, Germany
- 86.2: **Complete In-Plane Retardation Switching with Over +/- 45 Degrees Swing Angle and 100-Microsecond Response Liquid-Crystal Technology**
Akihiro Mochizuki, I-CORE Technology LLC, Louisville, CO US
- 86.3: **Ferroelectric Liquid-Crystal-Based LiDAR Technology and 3D Depth-Mapping Technique**

- Yue-Chu Cheng, Hong Kong University of Science and Technology, Hong Kong, Hong Kong
86.4: **Optimizing Electrically Suppressed Helix Ferroelectric Liquid Crystals for Commercial Applications**
Chris Mathew, Hong Kong University of Science and Technology, Hong Kong, Hong Kong

Session 87: OLED Materials & Modeling (OLEDs)

Friday, May 16, 2025 / 10:40 AM - 12:00 PM / Room LL20A

Chair: Sven Zimmermann, Novald GmbH

Co-Chair: Changwoong Chu, Samsung Display Company

- 87.1: **Invited Paper:** Development of High-Performance Green Phosphorescent Emitting Materials for Organic Light-Emitting Diodes
Sungun Lee, Samsung Electronics, Suwon, South Korea
- 87.2: **Invited Paper:** Recent Progress in Phosphorescent Green Emitters
Huiqing pang, Beijing, China
- 87.3: **Development of a CAE-Based OLED Modeling Environment for Electrical and Optical Simulation**
Han Wool Park, LG Display Co., Ltd., Paju, South Korea
- 87.4: **Leveraging Large Language Models for Molecular Generation in OLED Materials Discovery**
Wei Xu, TCL AI Lab, Hong Kong, Hong Kong

Session 88: Under Display Camera Systems and Algorithms (Interactive Displays and Sensors / Display Systems / Artificial Intelligence Including Machine Learning for Imaging)

Friday, May 16, 2025 / 10:40 AM - 12:40 PM / LL20D

Chair: Jeff Han, Consultant

Co-Chair: Brian Berkeley, Highlight Display, LLC

- 88.1: **Invited Paper:** Enhancing Image Quality of UDC Technology Through Novel Panel Design and Driving Method with MicroLED Display
Ying Chen, AU Optical Corporation, Hsinchu, Taiwan Roc
- 88.2: **Modeling Light Propagation in a Smartphone's Under-Display Sensors**
Zong Qin, School of Electronics and Information Technology, Sun Yat-Sen University, Guangzhou, China
- 88.3: **Invited Paper:** Image Restoration for Under-Display Cameras: A Review of Current Technologies
Jewon Yoo, Samsung Display, Yongin, South Korea
- 88.4: **Enhancing Face Recognition Accuracy for Under-Display Cameras via Image Restoration**
Kysu Ahn, Samsung Display Co., Ltd., Yongin, South Korea
- 88.5: **Invited Paper:** Enabling the Under-Display Camera: Solving Video Quality Using AI Within the ISP
Yoav Taieb, Visionary.ai, Jerusalem, Israel
- 88.6: **Camera Under Panel (CUP) Applied in 4K Ultra-High-Definition OLED Medium-Size Panel**
Chaoping Wen, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China

Session 89: Packaging Strategies for Advanced Displays (Emerging Technologies and Applications / Heterogeneous Integration on Glass for Emerging Applications)

Friday, May 16, 2025 / 10:40 AM - 12:10 PM / Room LL21AB

Chair: Taka Tsujimura, Konica Minolta Inc.

Co-Chair: Jong-Ho Hong, Samsung

- 89.1: **Invited Paper:** Integrated Glass Substrates for Advanced Display and Electronic Applications
Sean Garner, Corning, Inc., Corning, NY US
- 89.2: **Cutting-Edge Laser Forming in High-Precision Hole Fabrication for Thin Glass Applications**
Jinhong Jeun, Samsung Display Co., Ltd., Yongin, South Korea
- 89.3: **Advanced Integration of RGB MicroLEDs Enabled by Micro-Transfer Printing**
Zhi Li, Tyndall National Institute, University College Cork, Cork, Ireland
- 89.4: **Invited Paper:** Design for X in LED Design, Fabrication, and Packaging
Sheng Liu, Wuhan University, Wuhan, China
- 89.5: **Late-News Paper:** Silicon-on-Nothing Technology Based on Silicon Migration in Argon Annealing for Display-Sensor Integration
Qiuxu Wei, Beijing BOE Sensor Technology Company, Ltd., Beijing, China

Session 90: Low-Power AM Devices (I) (Active Matrix Devices)

Friday, May 16, 2025 / 1:30 PM - 2:30 PM / Room 220B

Chair: Jae-Hoon Lee, Samsung Display Co

Co-Chair: Norbert Fruehauf, University of Stuttgart

- 90.1: **A New Design of AMOLED Screen with Multi-Frequency-Display and Compensation Methods**
Wenshuai Zhang, Tianma Microelectronics Co., Ltd., Wuhan, China
- 90.2: **Low-Power-Consumption Organic Light-Emitting Diode Display Based on Locally Driven Multi-Domain Segmentation**
Jiyeon Kim, Samsung Display Co., Ltd., Yongin, South Korea

Session 100: AR/VR Fabrication and Testing (AR/VR/MR)

Friday, May 16, 2025 / 1:30 PM - 3:10 PM / Room 220C

Chair: Yun Wang, Meta

Co-Chair: Shin Tson Wu, University Of Central Florida, College of Optics and Photonics

100.1: **Late-News Paper:** Perturbation-Damped Optical Interferometer for AR Waveguide Grating Fabrication

John Semmen, University of Central Florida, Orlando, FL US

100.2: **Late-News Paper:** Highly Transparent Photoalignment Material for Fabricating Holographic Optical Elements

Hosna Tajvidi Safa, University of Central Florida, Orlando, FL US

100.3: **Late-News Paper:** Subjective and Objective Eye Tracking Test Results of Commercial VR Products

Xiaochen Zhou, GravityXR Electronics and Technology Co.Ltd., Zhejiang, China

100.4: **Invited Paper:** The Future of Compact AR displays: LCoS vs Micro-LED

Kehan Tian, Goertek Optical Technology Co. Ltd., Weifang, Shandong, China

100.5: **Invited Paper:** High-Voltage CMOS Backplanes for High-Brightness OLED Microdisplays

Philipp Wartenberg, Fraunhofer Institute for Photonic Microsystems IPMS, Dresden, Germany

Session 91: Artificial Intelligence for Display Manufacturing I (Display Manufacturing / Artificial Intelligence Including Machine Learning for Imaging)

Friday, May 16, 2025 / 1:30 PM - 2:30 PM / LL21CD

Chair: Eunkyung Koh, Samsung Display Research Center

Co-Chair: Yung-Yu Hsu, Meta

91.1: Automated Methods for Panel Defect Image Generation and Assisting Defect Detection

Xiaoqun Tang, BOE Technology Group Co., Beijing, China

91.2: Diffusion-Based AI Solutions for Stabilizing Automated OLED Cell Repair Processes and Enhancing New Product Performance.

Hong-bin Lim, Samsung Display, Yongin, South Korea

91.3: **Late-News Paper:** Unsupervised Anomaly Detection Using Diffusion Trend Analysis for Display Inspection

Eunwoo Kim, Samsung Display, Hawseong, South Korea

Session 92: e-Paper Displays I (Flexible Displays and e-Paper)

Friday, May 16, 2025 / 1:30 PM - 2:50 PM / Room LL21EF

Chair: Bo-Ru Yang, Sun Yat-Sen University

Co-Chair: Ze Yuan, UltraReality Technology Limited

92.1: **Invited Paper:** Color Electrophoretic Display for Outdoor Signage

James Aborn, E Ink Corporation, Billerica, MA US

92.2: Application of Large Active-Matrix Reflective Cholesteric Liquid-Crystal Technology in Outdoor Public Information Displays

Heng-Yi Tseng, AUO Corp., Hsinchu, Taiwan ROC

92.3: Dual-Mode Electrophoretic Displays with Photoluminescence, Electroluminescence, and Three-Dimensional Driving Capabilities

bo-ru Yang, Sun Yat-Sen University, Guangzhou, China

92.4: World's Largest E Ink Spectra 6 Display for Signage with IGZO-TFT Backplane

Fumiuyuki Kobayashi, Sharp corporation, Tenri, Japan

Session 93: Diffractive Liquid Crystal Optics for AR/VR (Liquid Crystal Technology)

Friday, May 16, 2025 / 1:30 PM - 2:50 PM / Room LL20BC

Chair: Lu Lu, Meta Reality Labs

Co-Chair: Philip Bos, Kent State University

93.1: Efficient Large-Angle Diffraction Using Patterned Chiral Liquid Crystal

Kristiaan Neyts, The Hong Kong University of Science and Technology, Hong Kong, Hong Kong

93.2: Achromatic Liquid-Crystal Diffractive Optical Elements for High-Efficiency Near-Eye Displays

Yongzhiyan Ma, University of Central Florida, Orlando, FL US

93.3: Transmissive Diffractive Optical Elements Based on Cholesteric Liquid Crystal

Taiki Yoda, Kwansei Gakuin University, Sanda, Japan

93.4: Polarization Efficiency Control of Freeform Liquid-Crystal Polarization Imaging Optics Utilizing Improved 4x4 Matrix Method

Chunyang Pei, Zhejiang University, Hangzhou, China

Session 94: mmWave Systems Integration and Advanced Chiplet Packaging on Glass (Emerging Technologies and Applications / Heterogeneous Integration on Glass for Emerging Applications)

Friday, May 16, 2025 / 1:30 PM - 3:10 PM / Room LL21AB

Chair: Ryosuke Kuwada, Project Far East Corporation

Co-Chair: Abhishek Srivastava, Hong Kong University of Science & Technology

94.1: Progress in Development of Reconfigurable Intelligent Surfaces with Liquid-Crystal and Glass Substrates for RF Applications

Changhyeong Lee, Corning Technology Center Korea (CTCK), Asan, South Korea

94.2: Process Development for Active-Matrix-Addressed Liquid-Crystal Reconfigurable Intelligent Surfaces

Markus Widmaier, University of Stuttgart, Institute for Large Area Microelectronics, Stuttgart, Germany

94.3: **Invited Paper:** Multilayer Glass Structure for Advancing Packaging and Substrate Technologies

Takahisa Amemiya, FICT Ltd., Nagano, NY Japan

94.4: **Invited Paper:** Advanced IC Substrate Taking Advantage of Flat Panel Display Technology

Kazuyuki Yamada, Japan Display Inc., Tokyo, Japan

- 94.5: **Late-News Paper:** Glass-Based Network-Controlled Repeaters for mmWave Communications
SB Cha, Visban Corporation, Tokyo, Japan
- 94.6: **Late-News Paper:** Low-Thermal-Stress TGV Leadless Wafer-Level-Package for MEMS High-Temperature Pressure Sensors
Qixux Wei, Beijing BOE Sensor Technology Company, Ltd., Beijing, China

Session 95: Low-Power AM Devices II (Active Matrix Devices)

Friday, May 16, 2025 / 3:10 PM - 4:10 PM / Room 220B

Chair: Kazuyoshi Omata, Konica Minolta

Co-Chair: Xi Chen, BOE Technology Group Co., Ltd.

- 95.1: **Invited Paper:** Research on Low-Power OLED Display Technology Based on SDP Scheme
Ling Shi, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- 95.2: **Partial Update LCD Based on LTPS Backplane Using a New Gate Driver on Array Combined with Multiplexing Architecture**
Chia-Lun Lee, AUO Corporation, HsinChu, Taiwan Roc
- 95.3: **Invited Paper:** Pixel Design Techniques for 1Hz Refresh Rate LTPS Emissive Displays Leveraging Multimodal Transistor On- and Off-State Current Characteristics
Radu Sporea, University of Surrey, Guildford, UK

Session 96: Artificial Intelligence for Display Manufacturing II (Display Manufacturing / Artificial Intelligence Including Machine Learning for Imaging)

Friday, May 16, 2025 / 3:10 PM - 4:30 PM / LL21CD

Chair: Eunkyung Koh, Samsung Display Research Center

Co-Chair: Simon Kurmann, Helbling

- 96.1: **Invited Paper:** AI Image Technology for Fast, Cost-Effective, and Safe Manufacturing Process
Cris Seungin Baek, Samsung Display Co., Ltd., Yongin, South Korea
- 96.2: **Optimize Manufacturing Operations with Digital Twin and Deep Q-Network**
Seki Park, Mobile Display Technology Innovation Team, Samsung Display, Asan, South Korea
- 96.3: **Developing Large Language Models for Display Industrial Knowledge: Data Augmentation, Training Techniques, and Evaluation Strategies**
Bingqian Wang, BOE Technology Group Co., Ltd., Beijing, China
- 96.4: **Self-Supervised Outpainting for Display Panel Defect Image Augmentation**
Zhihong Pan, Samsung Display America Lab, San Jose, CA US

Session 97: e-Paper Displays II (Flexible Displays and e-Paper)

Friday, May 16, 2025 / 3:10 PM - 4:30 PM / Room LL21EF

Chair: Masayoshi Higuchi, National Institute for Materials Science

Co-Chair: Makoto Omodani, Tokyo Denki University

- 97.1: **Full-Color Video e-Paper Based on Oxide TFT**
Zhuhui Li, China Star Optoelectronics Semiconductor Display Technology Co. Ltd., Shenzhen, China
- 97.2: **A Novel Organic Light-Emitting Diode Having Dual Functionality of Front-Light and Touch Panel for Reflective Displays**
Norio Koma, RFD Research Center, Gifu, Japan
- 97.3: **Quantum-Dot-Based Color Filter Array for Reflective Displays**
Dmitri Kuksenkov, Science and Technology Division, Corning Incorporated, Corning, NY US
- 97.4: **Highly Durable and Nonvolatile Electrochromic Devices with Metallosupramolecular Polymers for Smart Window Application**
Masayoshi Higuchi, National Institute for Materials Science, Tsukuba, Japan

Session 98: New Component (Liquid Crystal Technology)

Friday, May 16, 2025 / 3:10 PM - 4:30 PM / Room LL20BC

Chair: Dr Akihiro Mochizuki, I-CORE Technology, LLC

Co-Chair: Takahiro Ishinabe, Tohoku University

- 98.1: **New Coating Polarizer with High Polarization Performance and Dimensional Stability**
Toshikazu Sumi, FUJIFILM Corporation, Minamiashigara, Japan
- 98.2: **Cinnamate Phosphonic Acid as Monomolecular Alignment Layer**
Oleksandr Semenenko, Hong Kong University of Science and Technology, Hong Kong, Hong Kong
- 98.3: **Multi-Dichroic-Layer Composite Thin-Film Polarizer Based on Azo Dyes**
Yue-Chu Cheng, National Cheng Kung University, Tainan, Hong Kong
- 98.4: **Reflector Plate Design for Reflective Liquid-Crystal Displays**
Shenping Li, Corning, Inc., Corning, NY US

Session 99: Imaging Techniques (Emerging Technologies and Applications)

Friday, May 16, 2025 / 3:10 PM - 4:30 PM / Room LL21AB

Chair: Adi Abileah, Adi - Displays Consulting LLC

Co-Chair: Jim Zhuang, Meta

- 99.1: **Design-Technology Co-Optimization of TFT Backplane for Ultrasound Pulse-Echo Systems**

- Florian De Roose, imec, Leuven, Belgium*
- 99.2:** **A Compact Fully a-Si:H TFT-Based Active Pixel Sensor Circuit for High-Resolution Low-Dose Medical Imaging**
Kaiyan Guo, Peking University, Shenzhen, China
- 99.3:** **Direct Perovskite X-Ray Detector Based on IGZO TFT Backplane**
Hao Liu, BOE Technology Group Co., Ltd., Beijing, China
- 99.4:** **Late-News Paper: Dynamic X-ray Flat Panel Detector with High Imaging Quality Based on Amorphous Silicon PIN Photodiode**
Yue Geng, BOE Sensing Technology Co., Ltd., Beijing, China

Poster Session

Thursday, May 15, 2025 / 4:30 PM - 7:30 PM / Room 220A

Active Matrix Devices

- P.1:** **Improving the Negative Bias Illumination Stress-Induced Instability of High Mobility Oxide Thin-Film Transistors**
Yun Yu, Tianma Microelectronics Co., Ltd., Wuhan, China
- P.2:** **High-Voltage Scalable Low-Temperature Polycrystalline Thin-Film Technologies in AMOLED Displays**
Keunwoo Kim, Samsung Display Co., Ltd., Yongin, South Korea
- P.3:** **High Uniform and Stable Oxide TFT Devices with High Mobility for AMOLED Display**
Fa-Hsyang Chen, Kunshan Govisionox Optoelectronics Co., Ltd., Jiangsu, China
- P.4:** **A New LTPS Pixel Structure to Improve the 1Hz Low-Brightness AOD Flicker Effect**
Chuanzhi Xu, Kunshan Govisionox Optoelectronics Co., Ltd., Kunshan, China
- P.5:** **Competing Degradation Mechanisms in Flexible Dual-Gate InGaZnO Thin-Film Transistor under Mechanical Stresses**
Peidong Li, Peking University, Shenzhen, China
- P.6:** **Power-Saving Solution for AMOLED Displays Based on Cathode Segmentation**
Lin Chen, Hefei Visionox Technology Co., Ltd., Hefei, China
- P.7:** **High-Reliability LTPS-TFT with Super-Low Gate Resistivity**
Masatomo Honjo, Sharp Corp., Mie, Japan
- P.8:** **4,032ppi Vth Compensation Pixel Circuit for OLEDoS**
Sanghyun Heo, Samsung Display Co., Ltd., Yongin, South Korea
- P.9:** **High Mobility Oxide and Novel Dual-Gate Pixel Structure Application to Gaming Notebook LCDs**
Jiandong Guo, BOE Technology Group Co., Ltd., Beijing, China
- P.10:** **MicroLED Pixel Circuit with A Novel NMOS-Oxide TFT Inverter for Reducing Falling Time and Enhancing Gray-Level Expression**
Chae-Hwan Park, Seoul National University, Seoul, South Korea
- P.11:** **A Novel 5T2C LTPO Pixel Circuit for MicroLED Display with Simultaneous Compensation and Programming**
Sung Wook Lim, Samsung Display Co., Ltd., Suwon, South Korea
- P.12:** **Achieving High-Performance Ln-IZO TFT with Top-Gate Self-Aligned Structure on Large Substrates**
Jingdong Liu, China Star Optoelectronics Semiconductor Display Technology Co., Ltd., Guangzhou, China
- P.13:** **Hydroxyl Radical from UV-DI: A Simple, Industry-Accessible Method for Enhancing Metal-Oxide TFTs at Low Temperature**
GiYoong Chung, Sungkyunkwan University, Suwon, South Korea
- P.14:** **Micro Light-Emitting Diode Pixel Circuit Based on LTPO TFTs Without Threshold Voltage Compensation Structure**
Jeeho Jeong, Sungkyunkwan University, Suwon, South Korea
- P.15:** **LTPS-TFT-Based Scan Driver Circuit with Stable Dual-Polarity Outputs by Bootstrapping Without Pre-Charging**
Hye-Won Woo, Sungkyunkwan University, Suwon, South Korea
- P.16:** **CMOS-Type Scan Driver Circuit Based on LTPO TFTs**
Han Cheol Lee, Sungkyunkwan University, Suwon, South Korea
- P.17:** **Low-Power Gate Driver Circuit with Variable Pulse Width for LTPO-Based AMOLED Displays**
Park Kee Chan, Konkuk University, Seoul, South Korea
- P.18:** **Self-Aligned Bottom-Gate Top-Contact Vertical-Channel In-Ga-Zn-Oxide Thin-Film Transistor**
Zicong Huang, Dept. of Electrical Engineering, Columbia University, New York, NY US
- P.19:** **Reduction of Oxygen Vacancy and Hydroxyl Group Defects in Oxide Semiconductor by Chloroform Treatment for Short-Channel Thin-Film Transistors**
Jin Jang, Kyung Hee University, Seoul, South Korea
- P.20:** **High Subthreshold Swing Using High-Performance Dual-Gate IZO/IGZTO TFTs for AMOLED Display**
Jin Jang, Kyung Hee University, Seoul, South Korea
- P.21:** **A Wide-Data-Range Pixel Circuit for High-Pixel-Density Mobile Displays Using Double-Gate Oxide TFTs**
Byong-Deok Choi, Hanyang University, Seoul, South Korea
- P.221:** **Late-News Poster: Multi-Frequency Gate Driver in the Controllable Region for Low Power TFT-LCD Application**
Po-Tsun Liu, National Yang Ming Chiao Tung University, Hsinchu, Taiwan Roc
- P.222:** **Late-News Poster: Femto-Ampere Leakage Current of Low Temperature Poly-Silicon TFTs in OLED Panel**
Yongsu Lee, Samsung Display, Yongin, South Korea
- P.223:** **Late-News Poster: Crystallized IGTO as a Transparent Electrode for Replacing Conventional S/D Metal Electrodes in Transparent Displays.**
Minsu Park, Sungkyunkwan University, Suwon, South Korea
- P.224:** **Late-News Poster: Interfacial Oxidation Layer for Reliable Vertical Thin-Film Transistors**
Byung Seol Hwang, Hoseo University, Asan, South Korea
- P.225:** **Late-News Poster: A High-Performance Micro Light-Emitting Diode Pixel Circuit Based on LTPO TFTs using a Pseudo Digital Driving Method**
Jae-Won Jung, Sungkyunkwan University, Suwon, South Korea
- P.226:** **Late-News Poster: Argon Plasma-Induced Rare-metal-free Amorphous Oxide Source-Gated Transistors**

- Mark Ilasin, Nara Institute of Science and Technology, Nara, Japan
- P.227: **Late-News Poster: Insight into the Effect of the Thickness of Gate Insulator on the Hysteresis by TCAD Simulation**
Huichen Xie, Wuhan China Star Optoelectronics Semiconductor Display Technology Coporation, Wuhan, China
- P.228: **Late-News Poster: An Advanced Flexible OLED Anti-ESD Design**
Yuan Zheng, Wuhan China Star Optoelectronics Semiconductor Display Technology Co., Ltd., Wuhan, China
- P.229: **Late-News Poster: Improved PBTS Reliability of Dual-Gate a-IGZO TFT by Bottom Interface Optimization**
Hanpeng Deng, Wuhan China Star Optoelectronics Semiconductor Display Technology Co., Ltd., Wuhan, China
- P.230: **Late-News Poster: Study on the Impact of Static Electricity on LTPS TFTs and Its Mechanism in Flexible OLED Devices Manufacturing Process**
Hao Li, Wuhan China Star Optoelectronics Semiconductor Display Technology Co., Ltd., Wuhan, China
- P.231: **Late-News Poster: An AMOLED LTPS Pixel Circuit Compensating for Threshold Voltage Variations, OLED Degradation, and IR Drop**
Sanghyun Park, Soongsil University, Seoul, South Korea
- P.232: **Late-News Poster: Micro-LED Pixel Circuit with Threshold Voltage Compensation Using a-IGZO TFT**
Young Jin Kim, Department of Semiconductor Engineering, Hoseo University, Asan, South Korea

Applied Vison

- P.22: **Subjective Evaluation of HDR10 Rendering Consistency Across Illuminance Changes**
POOSHANJAN ROY Biswas, DXOMARK, Boulogne Billancourt, France
- P.23: **Influence of Evening Display Light on Melatonin Levels and Autonomic Nervous System Balance**
Jang Jin Yoo, LG Display Co., Ltd., Seoul, South Korea
- P.24: **Modeling for Display Brightness Perception Based on Retina Imaging**
Nailong He, Southeast University, Nanjing, China
- P.25: **Mura Visual Simulation System and Quantitative Evaluation Criteria**
BO SHI, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- P.26: **Research on Individual Differences in Ability to Recognize Obstacles Employing Binocular Stereopsis and Development of Stereoscopic Test Video Sequences for Analyses**
Michihiro Hayashi, International College of Technology, Kanazawa, Kanazawa, Japan
- P.27: **A Novel Display Performance Index for Picture Quality Evaluation and Content Color Reproduction under Ambient Viewing Condition**
Mincheol Kim, LG Display Co., Ltd., Seoul, South Korea
- P.28: **Advanced Image Comparison Metric for Discerning Subtle Distinctions in Visual Quality**
Tamoghna Ghosh, Intel Corporation, Bangalore, India
- P.29: **Perceptual Visual Quality of UHD-2/8K on Consumer Display**
Hosub Lee, Samsung Research America, Irvine, CA US
- P.233: **Late-News Poster: Motion Sickness Inhibition Technology for In-Car Displays and Smart Phones**
Chia-Hsun Tu, Industrial Technology Research Institute, Hsinchu, Taiwan Roc

AR/VR/MRs

- P.30: **Geometric Phase-Shift-Based Phase Modulation SLM Using Dual In-Plane Switching Liquid Crystal**
Chihyun In, Kyung Hee University, Seoul, South Korea
- P.31: **A Novel Mura Compensation Algorithm for VR Displays**
Jaechan Cho, LX Semicon, Inc., Seoul, South Korea
- P.32: **Double-Path Pancake Optics with Wider FoV**
Naru Usukura, Sharp Corp., Tenri, Japan
- P.33: **A Novel Modular Map Construction Method for VR/MR Glasses**
Siyun Ma, BOE Technology Group Co., Ltd., Beijing, China
- P.34: **Deep Learning-Based Artificially Focused CGH Method with Real-World Objects Using Eye Tracking for Holographic Near-Eye Displays**
Tuwshinjargal Amgalan, Chungbuk National University, Cheongju, South Korea
- P.35: **A Performance-Efficiency Switchable Near-Eye Display with Variable Internal Optical Paths**
Hee-Jin Choi, Sejong University, Seoul, South Korea
- P.36: **Asymmetric Field-of-View Angle for Virtual-Reality Optical System**
Huanli Yang, TCL China Star Optoelectronics Technology Co., LTD, Wuhan, China
- P.37: **Crosstalk-Free Integral Imaging Based Head-Mounted Light-Field Displays Using Directional Backlights**
Hong Hua, The University of Arizona, Tucson, AZ US
- P.38: **Quantitative Simulation of Pixel-Level Crosstalk in MicroLED Arrays with Outcoupling Structures for AR Applications**
Ze Yuan, Yongjiang Laboratory, Ningbo, China
- P.39: **Challenging the Limits of SRG Waveguides: A Human-AI Collaborative Design Concept**
Sebastian de Cunsel, Sony Semiconductor Solutions Corp., Atsugi, Japan

Artificial Intelligence Including Machine Learning for Imaging

- P.40: **A Novel LCD Demura Algorithm Based on Deep Learning**
Yixin Xiao, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- P.41: **A Study on AI Model Performance Based on Changes in Image Brightness and Camera Focus**
Nakun Lim, Samsung Display Co., Ltd., Asan, South Korea
- P.42: **AI-Based Rapid Defect Detection Method for Display Screen Appearance**
Shujuan Yin, BOE, Beijing, China

- P.43: Practical Lithography Prediction System with AI model**
Tong Liu, BOE Technology Group Co. Ltd., Beijing, China
- P.44: Control Chart Pattern Recognition Using Preprocessing Based on DTW and 1D-CNN for Anomaly Equipment Detection**
Junhyuk Choi, Samsung Display Co., Ltd., Asan, South Korea
- P.45: Development of an AI Model for Defect Detection Considering Manufacturing Variability**
Choongmin Jeong, Samsung Display Co., Ltd., Yongin, South Korea
- P.46: Exploration of AI Applications of Neural Networks in TFT-LCD Film Thickness Prediction**
Yan Ping Hong, Wuhan BOE Optoelectronics Technology Co., Ltd., Wuhan, China
- P.47: Exploration and Application of Unknown Category Defect Detection Methods for Display Panels**
Hu Siyi, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- P.48: Predictive Maintenance of Equipment Leveraging Artificial Intelligence and Big Data Technologies**
Tao Dai, BOE Optoelectronics Group Co., Ltd., Wuhan, China
- P.49: Deep Learning Enables Intelligent Defect Detection and Interception in LCD Manufacturing**
Xiangwu Xiao, BOE Technology Group Co., Ltd., Beijing, China
- P.50: AI-Empowered Display Industry: Innovative Breakthrough in Defect Inspection**
Tingyu Liu, BOE Technology Group Co., Ltd., Beijing, China
- P.51: Development Solution for Imbalanced Image Data of Cell Circuit Dents and Film Scratches in AMOLED Mass Production**
Sukbin Jung, Samsung Display Co., Ltd., Yongin, South Korea
- P.234: *Late-News Poster*: A Novel Deburn-in Machine Learning Framework for OLED Displays Considering Frame Rate, PWM, Grayscale, and Temperature**
Jyun-Wei Su, National Yang Ming Chiao Tung University, Hsinchu, Taiwan Roc
- P.235: Improving Automated Inspection and Repair Performance in Display Manufacturing through Diffusion-based Generative AI**
Seung-Gi Kim, Samsung Display Co., Yongin, South Korea
- P.236: *Late-News Poster*: Layout Optimization of AMOLED Pixel Circuits based on Deep Reinforcement Learning**
Hyoungsik Nam, Kyung Hee University, Seoul, South Korea
- P.237: A Low Grayscale Uniformity Improvement Scheme for OLED Based on Auto Demura**
Xiong Yin, Wuhan China Star Optoelectronics Semiconductor Display Technology Co., Ltd., Wuhan, China

Automotive/Vehicular Displays and HMI Technologies

- P.52: Study on Viewing Angle of Novel Ultra-Large OLED Display**
Yunpeng Zhang, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- P.53: An Innovative Capacitive Knob Design with Press-and-Rotate Function for Automotive In-Cell Touch LCD**
Yao-Chung Chang, Novatek Microelectronics Corp., Hsinchu, Taiwan ROC
- P.54: Research on the Process of Microlens Array Structure in Anti-Peeping Automotive Display**
Yanqiang Wang, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- P.55: Research and Application on the Hanging Ear Fracture of Optical Film for Vehicle Display Module**
Jie Mei, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- P.56: New Brightness Uniformity Tuning Algorithm for LCD Panel with Local Dimming Function**
Takashi Nose, Synaptics Japan G.K., Tokyo, Japan
- P.57: Performance Enhancement of Quantum-Dot Optical Films (QDOFs) Used in Vehicle Display**
Guobin Xu, Nanjing Bready Advanced Materials Technology Co., Ltd., Nanjing, China
- P.58: LCD with In-Cell Integrated Temperature Sensors for Multi-Area Temperature Detection**
Yuanyang Zhao, BOE Corp., Beijing, China
- P.59: Optimization of Environmentally Integrated Surface Display**
Xujian Zhu, Kunshan Govisionox Optoelectronics Co., Ltd., Kunshan, China
- P.60: Hyper-Realistic SDR/LDR Image Reproduction Proposal Needing Just Approx. 1/30th Exposure of Conventional SDR Image and Global-Tone-Mapping, or 1D-LUT, in UHDR Environments Regardless of Time of Day**
Sakuichi Ohtsuka, International College of Technology, Ishikawa, Japan

Display Electronics

- P.61: A Mura Optimization Scheme Based on AMOLED DC Dimming**
Qing Yang, Yungu (Gu'an) Technology Co., Ltd., Hebei, China
- P.62: AMOLED Fast Electrical Detection Technology and Compensation Data Processing**
Hui Liu, Hefei Visionox Technology Co., Ltd., Hefei, China
- P.63: Demura Taking the Gamma Inconstancy into Account**
Chao Zeng, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- P.64: Panel Performance Prediction Using Domain Knowledge-Guided Deep Learning**
Yiyen Hwang, LG Display Co., Ltd., Seoul, South Korea
- P.65: AI-Driven Timing Optimization for Enhanced Visual Performance in HOP 3.0**
Junghyun Yang, Samsung Display Co., Ltd., Yongin, South Korea
- P.66: Effective Compression Method for De-Burn-In Data**
Shumeng Ding, Goertek Co., Ltd., Xi'an, China
- P.67: Novel Content Adaptive Algorithm with Low-Power Consumption for Dual-Cell LCDs**
Yan Li, BOE Technology Group Co., Ltd., Beijing, China
- P.68: Double-Data PHM Drive System Based on MicroLED Display**
jiaqing Li, TCL China Star Optoelectronics Technology Co., Ltd. Wuhan, China, Shenzhen, China
- P.69: Novel Scan Driver Circuit and Power Consumption Reduction Structure for Oxide-Based OLED Display**
Dan Won Lim, Samsung Display Co., Ltd., Yongin, South Korea
- P.70: Data Compensation Scheme for AMOLED Pixel Circuit Based on Double-Gate Structural IGZO TFTs**

Shin-Hyeong Kim, Sungkyunkwan University, Suwon, South Korea

- P.71: Digital PWM Driving MicroLED Pixel Circuit Using a-ITZO TFTs**
Yongduck Kim, Electronics and Telecommunications Research Institute, Daejeon, South Korea
- P.72: A Novel High-Gain Operational Amplifier with Cross-Coupled Pair Based on a-IGZO TFTs**
Kyungmin Choi, Soongsil University, Seoul, South Korea
- P.73: Low-Power, Programmable Emission Control Driver Using Oxide Thin-Film Transistors Operating in Depletion Mode**
Seung-Woo Lee, Dept. of Information Display, Kyung Hee University, Seoul, South Korea

Display Manufacturing

- P.74: Reducing Insulator Lifting and Etched Active-Pattern Defects Due to Separated Design of Large Power Line**
Dogi Lim, Samsung Display Co., Ltd., Yongin, South Korea
- P.75: Adaptive Optics De-Mura Technology for OLED Displays**
Liuqing Fan, Tianma Display Technology Co., Ltd., Xiamen, China
- P.76: Optimization of Inkjet Jetting for Ultra-Fine Droplets**
Eunbyuel Lee, Samsung Display Co., Ltd., Yongin, South Korea
- P.77: Research on the Causes of OLED White Spot Defects and Exploration of Improvement Directions**
Peng Feng, BOE Optoelectronics Group Co., Ltd., Chengdu, China
- P.78: Optimization Scheme for Bending Process of Display Module Based on Simulation**
Ying Shen, Kunshan Govisionox Optoelectronics Co., Ltd., Kunshan, China
- P.79: New Applications of Optical Proximity Correction (OPC) Technology in the Display Industry**
Jing Wang, BOE Technology Group Co., Ltd., Beijing, China
- P.80: Systematic Study on Scanning Direction of Excimer Laser Annealing in p-Type Low-Temperature Polycrystalline Silicon Thin-Film Transistors**
Qian Xiao, Mianyang BOE Optoelectronics Technology Co., Ltd., Mianyang, China
- P.81: A Novel Bin-Mixing Transfer Technology Based on Die Bonding Equipment for Mini/MicroLED Display**
Yatong Qiao, BOE Technology Group Co., Ltd., Beijing, China
- P.82: Non-Destructive Measurement of Metal Thickness in Displays Using Energy Dispersive X-Ray Spectroscopy (EDS)**
Won Hyuk Jang, Samsung Display Co., Ltd., Asan, South Korea
- P.83: A Study on Transparent Electrode Materials for Displays**
Hyuneok Shin, Samsung Display Co., Ltd., Yongin, South Korea
- P.84: The Causes and Improvement of Lens Damage in Micro-OLED Display**
Xin Wen, BOE Technology Group Co., Ltd., Beijing, China
- P.85: Research Progress on the Influence of Black Organic Materials on OLED Display Residual Images**
Yunqiang Yang, Hefei Visionox Technology Co., Ltd., Hefei, China
- P.86: Research on Peeling Performance of Acrylic Photoresist with Isolated Island Pattern for OLED Display**
Ying Shen, Kunshan Govisionox Optoelectronics Co., Ltd., Kunshan, China
- P.87: Cost-Effective, High-k AlOx Dielectric by Spray Pyrolysis for LTPS and Oxide Thin-Film Transistors**
Jin Jang, Kyung Hee University, Seoul, South Korea
- P.88: Research on Improving Thin-Film Pixel Uniformity for 300ppi Pixels Using Inkjet Printing Process**
Jaebum Jeong, Gyeongsang National University, Jinju, South Korea
- P.89: Reducing Color Shift on White Screen in Oxide Semiconductor In-Plane Switching LCD Display by Controlling the Light Intensity of Different Color Bands Through Array Film Thickness Design**
Guoping Yang, Mianyang HKC Optoelectronics Technology Co., Ltd., Mianyang, China
- P.220: Conditioned Diffusion for Manufacturing Data: Improving Generation Controllability**
Jaewoong Kim, Samsung Display Co., Ltd., Yongin, South Korea
- P.238: Late-News Poster: Innovative Film Type Backplane with Super-Fine and Ultra-Low Resistance Wiring for Transparent Display**
Sohui Jeon, Panasonic Industry Co., Ltd., Osaka, Japan

Display Measurement

- P.90: Novel 3D Resolution Measurement Method for Autostereoscopic Display**
Youngmin Park, Samsung Display Co., Ltd., Yongin, South Korea
- P.91: Multi-Reference Imaging Light Measurement Device**
Sascha Reinhardt, Instrument Systems GmbH, Munich, Germany
- P.92: A Comprehensive Crosstalk Characterization Method for Autostereoscopic Visualization**
Viktor Voros, Barco NV, Kortrijk, Belgium
- P.93: Avoiding Temporal Error in the Measurement of Modulated Displays**
Tim Moggridge, Westboro Photonics, Ottawa, ON Canada
- P.94: Word Crosstalk: Analysis of Causes and Assessment Criteria**
Wennuo Huang, TCL China Star Optoelectronics Technology Co., Ltd., Shenzhen, China
- P.95: An Image-Based Quantitative Metric of See-Through Optical Quality for Displays**
Chao-Hua Wen, National Taiwan University of Science and Technology, Taipei, Taiwan ROC
- P.96: Comparing Color Gamut of LCD and OLED Displays at Different Viewing Angles Using Gamut Rings**
Taketoshi Nakano, NICHIA Corporation, Tokushima, Japan

Display Systems

- P.97: A Volumetric 3D Display System Based on Coded-Multiplane PDLC**
Anran Li, Hong Kong University of Science and Technology, Hong Kong, Hong Kong
- P.98: Full-Parallax Super-Multi-View 3D Display Based on Time-Sequential Electric Field Modulation**

- Qiong-Hua Wang, Beihang University, Beijing, China*
- P.99: Glasses-Free 3D Display for Cinema Applications Employing a MiniLED Display and Radial Parallax Barrier**
Philip Surman, Southern University of Science and Technology, Shenzhen, China
- P.100: High-Resolution Multi-Person Viewing Naked-Eye 3D Display System Based on Eye Tracking and Spatiotemporal Multiplexing Technology**
Yuan Yuan, TCL China Star Optoelectronics Display Technology Co. Ltd., Shenzhen, China
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