

# 会议详细议程终版 (Final Program)



**2022 International Conference on Display Technology**

July 16-19, 2022 (Saturday-Tuesday)

Fuzhou Digital China Convention and Exhibition Center

Fuzhou, China

## **Opening Remark**

开幕式

Sunday, July 17/14:00-15:00/ Fuhai Hall, 2<sup>nd</sup> Floor

## **Plenary Session**

大会主旨演讲

Sunday, July 17/15:00-18:05/ Fuhai Hall, 2<sup>nd</sup> Floor

Chair: Fushan Li (李福山), Fuzhou University

Co-Chair: Xiongping Li (李雄平), Tianma

Title: Operation mechanism of TADF/hyperfluorescence OLEDs aimed for high stability (15:00-15:25, Online)

Chihaya Adachi, Kyushu University

Title: Recent Advances in Flexible Optoelectronics (15:25-15:50)

Wei Huang (黄维), Northwestern Polytechnical University

Title: Progress in GaN-based Micro-LEDs for advanced display application (15:50-16:15)

Rong Zhang (张荣), Xiamen University

Title: Soft Metronics: towards Multi-parameter Optical Field Control (16:15-16:40)

Yanqing Lu (陆延青), Nanjing University

Title: Innovation driven to infinite horizon (16:50-17:15)

Wenrui Liu (刘文瑞), BOE

Title: Display Trend in the Intelligent Era and Tianma Strategy (17:15-17:40)

Feng Qin (秦锋), Tianma

Title: Gaining insights into Trends, Foreseeing the Future (17:40-18:05)

Ming-Chou Wu (吴明洲), TCL CSOT

### **Short Course**

短期课程

#### **Short Course 1**

**Saturday, July 16/ 14:30-17:30/ Meeting Room 205**

**Topic: Metaverse and Display**

**Title: Digital Content Production in the Metaverse**

元宇宙中的数字内容生产

**Lin Gao (高林), Institute of Computing Technology, Chinese Academy of Sciences**

**Title: Information Display and Visual Perception**

信息显示与视觉感知

**Yuning Zhang (张宇宁), Southeast University**

#### **Short Course 2**

**Saturday, July 16/ 14:30-17:30/ Meeting Room 206**

**Topic: OLED Device**

**Title: Degradation Mechanism and Device Physics of Printable Organic Light-Emitting Diodes**

可印刷 OLEDs 的劣化机理与器件物理

**Quan Niu (牛泉), South China University of Technology**

#### **Short Course 3**

**Saturday, July 16/ 14:30-17:30/ Meeting Room 202 (Online)**

**Topic: LCT Application**

**Title: Liquid crystal applications in displays and photonics: new possibilities**

**Vladimir Chigrinov, Nanjing Nanhui Intelligent Optical Sensing and Manipulation Research Institute**

#### **Short Course 4**

**Saturday, July 16/ 14:30-17:30/ Meeting Room 203**

**Topic: MicroLED**

**Title: Micro-LED Displays for AR/VR/XR and Metaverse**

Micro-LED 半导体显示技术及其与 AR/VR/XR 元宇宙的关系

**Zhaojun Liu (刘召军), South University of Science and Technology of China**

### **Seminar**

专题技术讲座

#### **Seminar 1**

**Sunday, July 17/ 9:00-10:30/ Meeting Room 206**

**Topic: Flexible Display**

**Title: New Technology Development and Introduction of Flexible AMOLED**

柔性 AMOLED 新技术发展及介绍

**Qi Shan (单奇), Visionox**

### **Seminar 2**

**Sunday, July 17/ 9:00-10:30/Meeting Room 202 (Online)**

**Topic: Virtual, Augmented, and Mixed Reality**

**Title: Virtual and Augmented Reality: Key Requirements, Current Status, and Future Trends towards the Metaverse**

**Achin Bhowmik, Starkey**

### **Seminar 3**

**Sunday, July 17/ 10:45-12:15/Meeting Room 206**

**Topic: Quantum Dots Displays**

**Title: Colloidal quantum dots: raising star for display applications**

**量子点——显示“明星”材料**

**Yizheng Jin (金一政), Zhejiang University**

### **Seminar 4**

**Sunday, July 17/ 10:45-12:15/Meeting Room 202**

**Topic: Display Measurement**

**Title: Material and Surface under Control - a comprehensive test standard for evaluation of the durability and functionality of displays**

**Wolfgang Weinhold, Institute for Surface and Product Analysis - ISPA, Germany**

### **Display Industry Future Technology Strategy Summit (FTS) (invited only)**

**显示产业未来技术战略峰会（显示行业领袖峰会）（闭门会议）**

**Sunday, July 17/ 8:30-12:00/ Meeting Room 210-211**

### **Empyrean Complete EDA Solution for FPD Design, Empower China FPD Industry**

**华大九天 FPD-EDA 全流程工具——助力中国平板显示**

**Sunday, July 17/9:00-11:00/ Meeting Room 205**

**Zixuan Wang (王梓轩), Empyrean**

### **Roadshow of Innovation & Entrepreneurship Projects (Investment Conference)**

**创新创业项目路演**

**Sunday, July 17/ 9:35-11:00/ Chaoping Venue, 2<sup>nd</sup> Floor**

### **Dedicated Time for Poster Session**

**海报报告**

**Sunday, July 17/ 10:00-12:00/ Chaoping Venue, 2<sup>nd</sup> Floor**

### **New Technology and New Product Public Release**

**新技术新产品发布会**

**Sunday, July 17/ 11:00-12:00/ Chaoping Venue, 2<sup>nd</sup> Floor**

**ICDT “TCL CSOT Cup” Display Future Star Debating Competition-1**

ICDT “TCL 华星杯” 显示未来之星辩论赛（上）

Monday, July 18/ 9:00-12:00/ Meeting Room 205

**SID Beijing Chapter Technical Committee Meeting**

SID 北京分会技术委员会会议

Monday, July 18/ 19:00-21:00 / Marina Meeting Room, 1<sup>st</sup> Floor, Fuzhou Marriott Hotel Riverside

**Young Leader Conference**

青年领袖论坛

Monday, July 18/ 13:30-15:30/ Meeting Room 205

Chair: Qijun Sun (孙其君), Beijing Institute of Nanoenergy and Nanosystems, CAS

**1. Next-generation Cameras and Displays Incorporating Optics and Machine Intelligence (13:30-13:50, Online)**

YIFAN (EVAN) PENG, Stanford University

**2. 3D-Printed Sugar Scaffold for High-Precision and Highly-sensitive Active and Passive Wearable Sensors (13:50-14:10, Online)**

Dong Hae Ho, Yonsei University

**3. Investigation on the crosstalk effect of color-converted Mini-LED display (14:10-14:30)**

Yongming Yin, School of Advanced Materials, Shenzhen Graduate School, Peking University

**4. Elevated-Metal Metal-Oxide Thin-Film Transistor for Information Display and Flexible Electronics (14:30-14:50)**

Zhihe Xia, The Hong Kong University of Science and Technology

**5. Artificial Stimuli-Response System Capable of Conscious Response (14:50-15:10, Online)**

Seongchan Kim, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University

**6. Emerging Zn Anode-Based Electrochromic Devices (15:10-15:30)**

Haizeng Li, Shandong University

## **Nano-LED Forum**

### 纳米发光显示研讨会

**Monday, July 18/ 8:30-12:00/ Meeting Room 206**

**Chair:** Lei Qian (钱磊), Ningbo Institute of Materials Technology & Engineering, CAS

**Co-Chair:** Chaoxing Wu (吴朝兴), Fuzhou University

#### **1. Fabrication of ultra-high resolution QLED devices by QD photolithography technology (8:30-8:50)**

基于可光刻量子点的超高分辨 QLED 技术

Lei Qian (钱磊), Ningbo Institute of Materials Technology & Engineering, CAS

#### **2. The processing of single quantum dot layer and based devices for the electroluminescence under alternating bias (8:50-9:10)**

单量子点层纳米像元原型器件及其场致发光特性

Suling Zhao (赵谡玲), Beijing Jiaotong University

#### **3. Several issues concerning working mechanisms of QLED (9:10-9:30)**

量子点发光二极管中的若干机理问题

Song Chen (陈崧), Soochow University

#### **4. Regulation of the luminescence of perovskite quantum dots and application in nano luminescent devices (9:30-9:50)**

钙钛矿量子点发光性能调控及纳米发光器件应用

Hongli Liu (刘红丽), Tianjin University

#### **5. Perovskite nanocrystals with circularly polarized luminescence for spin-LED (9:50-10:10)**

圆偏振发光钙钛矿纳米晶及其自旋 LED 应用

Yin Xiao (肖殷), Tianjin University

#### **6. Electroluminescence without carrier injection for nano-pixel light emitting display (10:10-10:30)**

应用于纳米像元发光显示的无注入发光技术

Chaoxing Wu (吴朝兴), Fuzhou University

#### **7. Fabrication of GaN-based nanorod structures and their optical properties (10:30-10:50)**

氮化物纳米 LED 制备与发光特性研究

Bin Liu (刘斌) / Tao Tao (陶涛), Nanjing University

#### **8. Interface of Nitride Growth and Nano Pixels for High Resolution Flexible Display (10:50-11:10)**

氮化物外延界面物理与无机柔性纳米像元

Zhiqiang Liu (刘志强), Institute of Semiconductors, CAS

#### **9. Nano-LED arrays targeting for ultra high definition displays (11:10-11:30)**

Xiaoyan Yi (伊晓燕), Institute of Semiconductors, Chinese Academy of Sciences

#### **10. Working Mechanisms of Nanoscale Light-Emitting Diodes Operating in Non-Electrical Contact and Non-Carrier Injection Mode: Modeling and Simulation (11:30-11:50)**

无注入型纳米发光二极管的工作原理: 建模与仿真

Wenhao Li (李文豪), Fuzhou University

**Business Conference**

商业会议

**Monday, July 18/ 14:00-17:05/ Meeting Room 206**

Title: **Outlook for Smartphone Terminal and Display Supply Chain Trends in 2022 (14:00-14:25, Online)**

**2022 年智能手机终端及显示供应链趋势展望**

Wray Wang (王子睿), Sigmaintell

Title: **TV Supply Chain Dynamics, Competition Landscape and Strategy (14:25-14:50, Online)**

**电视供应链动态-竞争版图及策略**

Nick Jiang (姜青树), Omdia

Title: **Capacity expansion encounters bottlenecks, and market adjustment is imminent in the second half of the year——Semi-annual summary of the display panel market in 2022 and full-year panel shipment forecast (14:50-15:15)**

**产能扩张遭遇瓶颈，下半年市场调整迫在眉睫——2022 年显示器面板市场半年总结及全年面板出货预测**

Tianhao Wei (魏天昊), AVC Revo

Title: **Global MiniLED/MicroLED technology trend dynamic and outlook (15:25-15:50, Online)**

**微显示 (MiniLED/MicroLED) 技术发展趋势解析**

Xuecheng Chen (陈学诚), Sigmaintell

Title: **The segment application in rail transit bring in a million-level market for commercial display equipment (15:50-16:15)**

**轨交细分市场为商用显示设备迎来百万级市场**

Bella Jiang (蒋贝贝), AVC Revo

Title: **Development trend of Near-Eye display (16:15-16:40, Online)**

**近眼显示市场发展趋势**

Kimi Lin (林麟), Omdia

Title: **2022 Global DDIC Market trend and Outlook (16:40-17:05)**

**2022 年全球显示驱动 IC 市场趋势及展望**

Qi Cong (丛琦), AVC Revo

**Micro/Mini LED Display Core Technology Road Map Forum**

Micro/Mini LED 显示关键技术路线研讨会

Tuesday, July 19/8:30-12:00/ Meeting Room 210-211

**the Award Ceremony of SID China Display Industry Award**

SID 中国区显示行业奖颁奖仪式

Tuesday, July 19/9:00-10:00/ Chaoping Venue, 2<sup>nd</sup> Floor

**ICDT “TCL CSOT Cup” Display Future Star Debating Competition-2**

ICDT “TCL 华星杯” 显示未来之星辩论赛（下）

Tuesday, July 19/9:00-12:00/ Meeting Room 205

**Metaverse and Display Forum**

元宇宙与显示论坛

Tuesday, July 19/13:30-17:40/ Meeting Room 206

Chair: Lijun Wang (王立军), North China University of Technology

**1 Invited Paper: Real-Time Computer-Generated Integral Imaging Light Field Displays (13:30-13:50)**

Zong Qin(秦宗), Sun Yat-Sen University

**2 Invited Paper: Interactive motion perception and reconstruction based on deep learning (13:50-14:10)**

Feng Xu(徐枫), Tsinghua University

**3 Invited Paper: Research on key performance of optical motion capture system (14:10-14:30)**

Bo Qiaoq (乔波), Zhejiang Lab

**4 Lightweight Super-Resolution for Panoramic Videos (14:30-14:50, Online)**

Fanjie Shang, Xidian University

**5 A Miniaturized Polarization-multiplexed Dual-plane Head-mounted Display System for Augmented Reality (14:50-15:10)**

Zekun Yan, Shanghai Jiao Tong University

**6 Porous Electronics in an Era of Metaverse (15:20-15:40, Online)**

Yingjun Liu, Poro Technologies Ltd

**7 Invited Paper: Floating 3D light field display in the air (15:40-16:00)**

Xinzhu Sang (桑新柱), Beijing University of Posts and Telecommunications

**8 Invited Paper: Dual-View 3D Display Using a Prism Array (16:00-16:20)**

Huan Deng (邓欢), Sichuan Sniversity

**9 Invited Paper: Light-field is the proper window to Metaverse (16:20-16:40, Online)**

Tomas Sluka, CREAL

**10 Invited Paper: Tabletop 3D Light-Field Display with 100 Degrees Frontal Viewing Angle Based on Views-Segmented Voxels (16:40-17:00)**

Xunbo Yu (于迅博), Beijing University of Posts and Telecommunications

**11 Optical realization of 360° cylindrical holography with planer SLM (17:00-17:20)**

Jun Wang, Sichuan University

**12 Near-eye light field displays with computational vision correction by manipulating vector sampling rays (17:20-17:40)**

Yuqing Qiu, Sun Yat-Sen University

**Postgraduate Workshop on Display Research (PGW)**

两岸三地显示科技研究生论坛

Tuesday, July 19/13:00-17:55/ Meeting Room 205

**Opening (13:00-13:05)**

**Session 1: MicroLED and QD**

**1.1 Ionic Liquid Post-Treatment in Blue Quasi-Two-Dimensional Perovskite Light-Emitting Diodes (13:05-13:20)**

Jiayun Sun, South University of Science and Technology of China

**1.2 Light recycling black matrix for color conversion of  $\mu$ LED (13:20-13:35)**

Xiang Zhang, Fuzhou University

**1.3 Stable Nanorods on-chip LED for Healthy Indoor Lighting (13:35-13:50)**

Chengbin Kang, The Hong Kong University of Science and Technology

**1.4 Highly readable displays based on quantum-dot color conversion (13:50-14:05)**

Liwen Deng, Fuzhou University

**Session 2: Display Systems and Image Processing**

**2.1 Computational vision-correcting near-eye light field displays by manipulating vector sampling rays (14:10-14:25)**

Yuqing Qiu, Sun Yat-sen University

**2.2 Design of full-color pico-projector based on a single-integrated Micro-LED chip (14:25-14:40)**

Haonan Jiang, Fuzhou University

**2.3 Resolution-tripled integral imaging light field displays by recombining subpixels with zero sampling error (14:40-14:55)**

Wenchao Yang, Sun Yat-sen University

**2.4 Image Processing for the Differential Optical Fingerprint Signals (14:55-15:10)**

Yi-Hsiang Lo, National Chiao Tung University

**2.5 Adaptive Driving Algorithm for Field Sequential Color LCDs with mini-LED Backlight based on Deep Learning (15:10-15:25)**

Guowei Zou, Sun Yat-sen University

**Session 3: LC & Flexible displays**

**3.1 Force-induced Tunable Lens for Dark-zone Compensation in Stretchable Display (15:30-15:45)**

Ziyi Wu, Sun Yat-sen University

**3.2 Modulation of Chirality and Intensity of Circularly Polarized Luminescence Emitting from Cholesteric Liquid Crystals Triggered by Photo-responsive Molecular Motor (15:45-16:00)**

Jinying Bao, Peking University

**3.3 Facile Patterning of Silver Nanowire with Invisible Effect for Naked Eyes via Ink-jet Printing (16:15-16:30)**

Hao Lu, Sun Yat-sen University



**3.4 Fast Continuous  $2\pi$  Phase Modulation Based upon Kerr Effect of Vertical Aligned Deformed Helix Ferroelectric Liquid Crystal (16:00-16:15)**

Zheng-Nan Yuan, The Hong Kong University of Science and Technology

**3.5 A Stretchable Electrophoretic Display Device with Microcavities Based on Carbon Nanotube Doped Hydrogel Electrode (16:30-16:45)**

Simu Zhu, Sun Yat-sen University

**Session 4: TFT & E-Paper**

**4.1 Permeable Electrode Based on Ti-doped ITO and its Application in AOS TFTs (16:50-17:05)**

Bowen Sun, Peking University Shenzhen Graduate School

**4.2 Simulation and Analysis of Edge Ghosting for Microcapsule E-Paper Based on Particles Dynamics (17:05-17:20)**

Zheng Zeng, Sun Yat-sen University

**4.3 PVDF and Dual-Gate Metal-Oxide Thin-Film Transistors Integrated Active-Matrix Tactile Sensor Array (17:20-17:35)**

Tengteng Lei, The Hong Kong University of Science and Technology

**4.4 Synchronously micropatterning and nanowelding silver nanowires for high-performance transparent electrodes (17:35-17:50)**

Ting Wang, Sun Yat-sen University

**Closing (17:50-17:55)**

## Technical Sessions

### Session 1: Display Technologies for VR/AR/MR (AR&VR)

Monday, July 18/8:30-10:30/ Meeting Room 202

Chair: Yue Liu (刘越), Beijing Institute of Technology

**1.1 Invited Paper: OLED Micro-display using RGB Direct Patterning Technology (8:30-8:50, Online)**

Jae Hoon Jung, APS Research

**1.2 Invited Paper: Creating a high quality optical experience for Augmented Reality Devices (8:50-9:10, Online)**

Robert Visser, Chung-Chia Chen, Applied Materials

**1.3 Active-matrix Addressed High Brightness and Ultra-high PPI Field-Sequential-Color Display based on Deformed Helix Ferroelectric Liquid Crystal for VR/AR (9:10-9:30, Online)**

Zhibo Sun, HKUST

**1.4 Holographic retinal projection near-eye display (9:30-9:50)**

Wang Zi, Hefei University of Technology

**1.5 Integrated Micro-LED display embedded with pixel shift system (9:50-10:10)**

Zhao Peng, Appotronics

**1.6 Curved Computer-Generated Holograms Generation Method with Bidirectional phase compensation (10:10-10:30)**

Yang Wu, Sichuan University

### Session 2: Display and Vision 1 (Applied Vision)

Monday, July 18/8:30-10:30/ Meeting Room 203

Chair: Hao Chen(陈浩), Wenzhou Medical University

**2.1 Invited Paper: An ERP Investigation on Non-Visual Effects of Blue Light on Attention (8:30-8:50)**

Yunhong Zhang (张运红), China National Institute of Standardization

**2.2 Invited Paper: The Effect of Tablet's Color Temperature on Ocular Health in Children (8:50-9:10)**

Jingjing Xu (徐菁菁), Eye hospital of Wenzhou Medical University

**2.3 Invited Paper: Stereoacuity Measurement and the Related Factors (9:10-9:30)**

Tingting Zhang (张婷婷), Hohai University

**2.4 Invited Paper: Summary of Eye Protection Technique of Display (9:30-9:50)**

Weidong Huang (黄卫东), TCL CSOT

**2.5 Modulation of Mean Luminance within the Fellow Eye Can Restore Binocular Balance Across Spatial Frequency in Adult Amblyopes (9:50-10:10)**

Seung Hyun Min, Wenzhou Medical University

**2.6 Influence of Screen Devices Using on Myopia in Children Aged 7-11 Years: a Multi-center Experimental Study (10:10-10:30)**

Xi Yu, Wenzhou Medical University

### Session 3: Device Physics (OLEDs)

Monday, July 18/8:30-10:10/ Meeting Room 208-209

Chair: Zugang Liu (刘祖刚), China Jiliang University

**3.1 Invited Paper: Plasmonic PHOLED: Increasing Plasmon Outcoupling (8:30-8:50, Online)**

Nicholas Thompson, Universal Display Corporation

**3.2 Invited Paper: Polarization-Induced Exciton-Polaron Quenching in OLEDs and Its Control via Processing Conditions and Mixing (8:50-9:10, Online)**

Russell J. Holmes, University of Minnesota

**3.3 Invited Paper: Manipulation of charge and exciton distribution for white OLEDs/colloidal quantum well LEDs(9:10-9:30)**

Baiquan Liu (刘佰全), Sun Yat-sen University

**3.4 Key factors governing the external quantum efficiency of TADF OLEDs: evidence from machine learning (9:30-9:50)**

Dandan Song, Beijing Jiaotong University

**3.5 Advanced modeling of OLEDs: physics and applications (9:50-10:10)**

Feilong Liu, South China Normal University

**Session 4: Micro-LED Device & Process-1 (EMQ(Micro-LED))**

**Monday, July 18/8:30-9:50/ Meeting Room 210-211**

**Chair: Yongjing Wang (王勇竞), Photonic Crystal Co. LTD**

**4.1 Invited Paper: Analysis of Color Conversion in III-Nitride Micro-LEDs with Embedded Nanostructures (8:30-8:50, Online)**

Jian Hsu, Pennsylvania State University

**4.2 Invited Paper: CsPbBr<sub>3</sub> perovskite quantum-dot paper exhibiting highest 3-dB bandwidth and realizing flexible white-light system for visible-light communication (8:50-9:10, Online)**

Hao-Chung Kuo (郭浩中), National Yang Ming Chiao Tung University

**4.3 Invited Paper: Size effect and array fabrication of Micro-LED (9:10-9:30, Online)**

Weiling Guo (郭伟玲), Beijing University of Technology

**4.4 Low Efficiency Attenuation and Stable Monochromaticity for Non-polar M-plane Micro-light-emitting-diodes (Micro-LEDs) (9:30-9:50, Online)**

Yibo Liu, Hong Kong University of Science and Technology

**Session 5: Display Driving Technology (Display Electronics)**

**Monday, July 18/8:30-9:50/ Meeting Room 306**

**Chair: Ziyi Zhao (赵梓夷), Silvaco China**

**5.1 A Novel PAM-PWM Hybrid Driving Method for Micro-LED Displays (8:30-8:50)**

Yingteng Zhai, Tianma Microelectronics Co., Ltd.

**5.2 A Method of Noise Reduction Based on Adaptive Digital Filter for Touch Panel Data Processing (8:50-9:10)**

Yuxuan Liu, Galaxycore Co. Ltd.

**5.3 Brightness Decline Mechanism at Low Frequency Display on LTPS LCD (9:10-9:30)**

You Pan, Wuhan China Star Optoelectronics Technology Co., Ltd, Hubei, China

**5.4 Introduction to SmartDRC/LVS - The New High-performance Physical Verification Solution in Display manufacture flow (9:30-9:50)**

Ziyi Zhao, Silvaco China

**Session 6: Novel Display System Application and Backlight (Display System)**

**Monday, July 18/8:30-9:30/ Meeting Room 307**

**Chair: Jiahui Wang (王嘉辉), Sun Yat-Sen University**

**6.1 Autostereoscopic Display with a Multidirectional Backlight System and an Eye tracker (8:30-8:50)**

Ziyin Li, Zhejiang University

**6.2 Visual perception based non-reference binocular tone mapping algorithm (8:50-9:10, Online)**

Yu Song, Suzhou University of Science and Technology

**6.3 Harnessing Plenoptic Function with Composite Thin Films for Display (9:10-9:30)**

Yong He, Sun Yat-sen University

**Session 7: High Performance Light Source and It's Application (Projection)**

**Monday, July 18/8:30-9:50/ Meeting Room 315**

**Chair: Enguo Chen (陈恩果), Fuzhou University**

**7.1 Invited Paper:  $\mu$ -LED Based Pico-projector (8:30-8:50)**

Enguo Chen (陈恩果), Fuzhou University

**7.2 Invited Paper: High Power GaN-based Blue and Green Laser Diodes (8:50-9:10, Online)**

Jianping Liu (刘建平), Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Science

**7.3 GaN-based High Power Blue and Ultraviolet Laser Diodes (9:10-9:30)**

Degang Zhao, Institute of Semiconductors, Chinese Academy of Sciences

**7.4 Performance of Laser-Driven Phosphor Wheel Based on Phosphor Ceramics and Perovskite Quantum-Dots (9:30-9:50)**

Aochen Du, Fuzhou University

**Session 8: Standardization and Performance Evaluation of VR/AR/MR Products and Systems (AR&VR)**

**Monday, July 18/10:40-12:20/ Meeting Room 202**

**Chair: Jianping Wang (王建平), Hangzhou SanTest Technology**

**8.1 Invited Paper: The Performance Quantification of Virtual Images and See-through Scenes in Augmented Reality (AR) Devices (10:40-11:00, Online)**

Tongsheng Mou (牟同升), Zhejiang University

**8.2 Invited Paper: Visual Evoked Potentials Study in Binocular Disparity and Stereoscopic Visual Fatigue with Virtual Reality Environment (11:00-11:20)**

Yue Liu (刘越), Beijing Institute of Technology

**8.3 Invited Paper: Recent measurement and standards development of VR/AR eyewear displays concerning the eye's characteristics (11:20-11:40)**

Jianping Wang (王建平), Hangzhou SanTest Technology

**8.4 Anatomy Education Method using Autostereoscopic 3D Image Overlay and Mid-Air Augmented Reality Interaction (11:40-12:00)**

Tianqi Huang, Tsinghua University

**8.5 Near Eye Display's Optical Properties and Image Quality Measurement (12:00-12:20)**

Luning Liu, Wuhan Jingce Electronics group co., ltd

**Session 9: Display and Vision 2 (Applied Vision)**

**Monday, July 18/10:40-12:20/ Meeting Room 203**

**Chair: Hao Chen(陈浩), Wenzhou Medical University**

**9.1 *Invited Paper*: Pupil Size Estimation Model Based on Revised Spatially Weighted Corneal Flux Density and Chromaticity Coordinates† (10:40-11:00)**

Yuning Zhang (张宇宁), Southeast University

**9.2 *Invited Paper*: Bayesian Adaptive Assessment of the Visual Function (11:00-11:20)**

Fang Hou (侯方), Eye Hospital, Wenzhou Medical University

**9.3 *Invited Paper*: The Effect of Spatial Dynamic Distortions on Visually Induced Motion Sickness: A Pilot Study on the Head-mounted Displays (11:20-11:40)**

Zhenping Xia (夏振平), Suzhou University of Science and Technology

**9.4 Sensitivity to S-Cone Stimuli Decreased in Thyroid-Associated Ophthalmopathy Patients without Obvious Optic Neuropathy (11:40-12:00)**

Haochen Jin, Eye Hospital, Wenzhou Medical University

**9.5 Plasmonic Nanostructure-Loaded Filtering Film for Color Blindness Management (12:00-12:20)**

Wen Chen, Southeast University

**Session 10: OLED Display (OLEDs)**

**Monday, July 18/10:20-12:00/ Meeting Room 208-209**

**Chair: Zhengguo Xiao (肖正国), University of Science and Technology of China**

**10.1 *Invited Paper*: Active-Matrix WOLED Displays Based on a-Si LCD Backplanes (10:20-10:40, Online)**

Max Lemaitre, Matrix Technologies

**10.2 Development of Ultra Large 95inch 8K 120Hz OLED Display (10:40-11:00)**

Zhongyuan Wu, BOE Technology Group Co. Ltd.

**10.3 31-inch AMOLED Display with TG IGZO Oxide Backplane Produced in the G11 Generation Line (11:00-11:20)**

Yunxi Liu, Shenzhen China Star Optoelectronics Semiconductor Display Technology Co., Ltd

**10.4 A Novel Method to Estimate Color Separation of Reflected Light in COE Panels (11:20-11:40)**

Chuanxiang Xu, BOE Technology Group

**10.5 A 12.3-inch Automotive AMOLED Display with Small Bending Radius (11:40-12:00)**

XUEYING He, BOE

**Session 11: MicroLED Manufacturing Technology (ISA Joint Session)**

**Monday, July 18/10:00-11:20/ Meeting Room 210-211**

**Chair: Fei Hu (胡飞), Chengdu Vistar Display Company**

**11.1 *Invited Paper*: Production-Worthy Massive Parallel Transfer Technology for the Assembly of Micro-LED Based Displays (10:00-10:20, Online)**

Makarem Hussein, LuxNour Technologies

**11.2 *Invited Paper*: Study of Green LED Growth for Advanced Display Applications (10:20-10:40)**

Jason Hu, AMEC, China

**11.3 *Invited Paper*: MicroLED End-to-End Process Control (10:40-11:00, Online)**

John Robinson & Bobby Barnett, KLA Corporation

**11.4 *Invited Paper*: An Alternative Method for Cost Effective Probing in MicroLED High-Volume Manufacturing (11:00-11:20, Online)**

Matthew Davies, Attolight

**Session 12: AMOLED & Metal Oxide Electronics (Display Electronics)**

**Monday, July 18/10:00-11:20/ Meeting Room 306**

**12.1 *Invited Paper*: Comprehensive Solution for High Image Quality in Medium and Large-size AMOLED Displays Throughout Display Usage Cycle (10:00-10:20, Online)**

Denis Striakhilev, Ignis Innovation Inc., Waterloo, Ontario

**12.2 High Performance AMOLED Pixel Circuit Using Interleaved Emit Signals Based on Low-Temperature Poly-Si and Oxide (LTPO) TFTs (10:20-10:40, Online)**

Jia Fu, Peking University

**12.3 A novel Emission Gate Driver with Pulse Width Modulation Based on Low-Temperature Poly-Si Oxide Thin-Film Transistors (10:40-11:00, Online)**

Wanming Wu, Institute of Microelectronics of the Chinese Academy of Sciences

**12.4 A 3-Bit Flash Analog-to-Digital Converter Based on Compensated Metal-Oxide Thin-Film Transistor Circuits (11:00-11:20, Online)**

Xuchi Liu, Hong Kong University of Science and Technology

**Session 13: Ultra High Definition Display (Display System)**

**Monday, July 18/9:40-10:40/ Meeting Room 307**

**Chair: Di Wang (王迪), Beihang University**

**13.1 *Invited Paper*: Learnings from Small Form-Factor Pluggable PC Design for 8K Display (9:40-10:00, Online)**

Jiun kai Beh, Intel

**13.2 Review of subjective evaluation method of high-quality TV images (10:00-10:20)**

Pengfei Li, TCL

**13.3 Hardware implementation design for V-By-One standard High speed high definition video interface (10:20-10:40)**

Changjun Song, Southeast University

**Session 14: Printed TFT & Novel Application of Printing Process (Printed Display)**

**Monday, July 18/10:00-11:40/ Meeting Room 315**

**Chair: Jingyao Song (宋晶尧), Guangzhou ChinaRay optoelectronic materials co., LTD**

**14.1 *Invited Paper*: R2R gravure printed flexible carbon nanotube-based TFT active matrixes and its flexible display application (10:00-10:20)**

Junfeng Sun (孙俊峰), Huzhou University

**14.2 *Invited Paper*: Outlook for Low Cost Printed Active-Matrix Light-Emitting Displays Enabled by Vertical Light-Emitting Transistor Technology (10:20-10:40, Online)**

Bo Liu (刘博), Matrix Technologies

**14.3 The effect of phase separation of organic hole transport materials and QDs on the performance of QLED (10:40-11:00, Online)**

Ji Hun Kim, Kyung Hee University

**14.4 Inkjet Printing Patterned Quantum Dot Microarrays (11:00-11:20)**

Gaoling Yang, Beijing Institute of Technology

**14.5 Perovskite Quantum Dot Color Conversion Pattern Fabricated by an In-situ Inkjet Printing (11:20-11:40)**

Mengyao Tian, Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, Shenzhen University

**Session 15: Diffractive Optics for AR/MR (AR&VR)**

**Monday, July 18/13:30-15:30/ Meeting Room 202**

**Chair: Yixing Chen (陈弈星), Smartvision**

**15.1 *Invited Paper*: High-performance diffractive waveguide near-eye display based on polarization volume grating (13:30-13:50)**

Yishi Weng (翁一士), Southeast University

**15.2 Waveguide-Based Near-Eye Display with Dual-Channel Field of View (13:50-14:10)**

Chaoping Chen, Shanghai Jiao Tong University

**15.3 Design and Realization of Full-Color VHG Holographic Waveguide Display (14:10-14:30)**

Zhongwen Shen, Nanjing Vocational University of Industry Technology

**15.4 Polarization Behavior and Imaging Simulation of Reflective Polarization Volume Gratings (14:30-14:50)**

Ran Wei, Southeast University

**15.5 Two-Dimensional Exit-pupil Expansion in Augmented Reality (AR) (14:50-15:10)**

Zhiyuan Gu, Lingxi AR Technology Co., Ltd. Beijing, China

**15.6 Holographic Waveguide Display with Large Field of View Based on Volume Holographic Grating (15:10-15:30)**

Chuang Wang, Southeast University

**Session 16: Measurement and Characterization for News Display Technologies (Display Measurement)**

**Monday, July 18/13:30-15:30/ Meeting Room 203**

**Chair: Qian Li (李倩), EVERFINE Corporation**

**16.1 *Invited Paper*: Measurement of Perceived Pixel Luminance of Large LED Displays (13:30-13:50)**

Xi Mou (牟希), Hangzhou SanTest Technology

**16.2 *Invited Paper*: Rapid Measurement and Quality Control Solutions for Low Luminance Performance of OLED Display (13:50-14:10)**

Li Song (宋立), EVERFINE Corporation

**16.3 Towards High Precision One Shot EOL Testing for Acquiring Pixel Level Luminance Data (14:10-14:30)**

Bob Liu, Light-All Co., Ltd

**16.4 Bandwidth effect correction used for wide color gamut display measurement (14:30-14:50)**

Shiwen Luo, JingCe

**16.5 Key technologies and algorithm of Measurement for Mini-LED-backlit LCDs (14:50-15:10)**

Xian Tang, EVERFINE Corporation

**16.6 Which Rotation Measurement Provides a Better Approach in Eyewear Displays: Pupil or Eyeball Center? (15:10-15:30)**

Jianping Wang, Hangzhou SanTest Technology

**Session 17: Device Characteristics (OLEDs)**

**Monday, July 18/13:30-15:10/ Meeting Room 208-209**

**Chair: ChungChun Lee (李重君), visionox**

**17.1 *Invited Paper*: Efficient Light Extraction Methods in Top-Emitting OLEDs (13:30-13:50, Online)**

Jang Hyuk Kwon, Kyung Hee University

**17.2 *Invited Paper*: Efficient light-emitting diodes using solution processed perovskite nanocrystals (13:50-14:10)**

Zhengguo Xiao (肖正国), University of Science and Technology of China

**17.3 The study on minimizing angular color shift in high resolution Micro-OLED with Color Filter (14:10-14:30, Online)**

Dong Wan Kang, LinkGlobal21 Co., Ltd.

**17.4 the role of dopant materials on current efficiency roll-off in organic light-emitting diodes (14:30-14:50)**

Bin Liu, Yungu (Gu'an) Technology Co., Ltd.

**17.5 Composite Cathode OLED Device Structure Design for Transparent Display (14:50-15:10)**

Xiaohu Li, BOE TECHNOLOGY GROUP CO., LTD.

**Session 18: Micro-LED Application (ISA Joint Session)**

**Monday, July 18/13:30-15:10/ Meeting Room 210-211**

**Chair: Xuan Cao (曹轩), Vistar Corporation**

**18.1 *Invited Paper*: Large-Area Low-Cost MicroLED TV Displays (13:30-13:50, Online)**

Reza Chaji, Vue Real, Canada

**18.2 *Invited Paper*: Design of Naked Eye Light Field Display Based on Micro-LED (13:50-14:10)**

Wei Xiaodan (魏晓丹), Beijing YiShiXin Technology Development Co., LTD, China

**18.3 *Invited Paper*: Micro-LED-on-CMOS digital light projection systems (14:10-14:30, Online)**

Martin Dawson, University of Strathclyde, United Kingdom

**18.4 AR Glasses Using Angular Color MicroLED and Waveguide (14:30-14:50)**

Yongjing Wang, Photonic Crystal Co. LTD, China

**18.5 High performance Micro-LED Transparent Display (14:50-15:10)**

Liqun Chen, Tianma Microelectronics Co., Ltd, China

**Session 19: E-Paper Technology (E-Paper and Flexible Displays)**

**Monday, July 18/13:30-15:10/ Meeting Room 306**

**Chair: Guofu Zhou (周国富), South China Normal University**

**19.1 *Invited Paper*: Electrochromic Display Based on Semiconducting Polymer (13:30-13:50)**

Jian Wang (王坚), Furcifer Inc., USA

**19.2 *Invited Paper*: Driving and Evaluating Methods for Color Electronic Paper (13:50-14:10)**

Xidu Wang (王喜杜), Foshan ESLEET technologies Co., Ltd

**19.3 *Invited Paper*: For ID application using no battery IoT system (14:10-14:30, Online)**

Quanzhong Wang (王全忠), BOE Technology Group Co., Ltd

**19.4 Simulation and Analysis of Edge Ghosting for Microcapsule E-Paper Based on Particles**



**Dynamics (14:30-14:50)**

Zheng Zeng, Sun Yat-sen University

**19.5 Reconfigurable microfluidic interface programmed by conductive-microstructure induced localized instability (14:50-15:10)**

Jiaoxu Wei, South China Normal University

**Session 20: 3D Display System (Display System)**

**Monday, July 18/13:30-15:10/ Meeting Room 307**

**Chair: Qionghua Wang (王琼华), Beihang University**

**20.1 Invited Paper: Curved Hologram Generation Method for Speckle Noise Suppression (13:30-13:50)**

Di Wang (王迪), Beihang University

**20.2 Invited Paper: Nano-optics Based Glasses-free 3D Display (13:50-14:10)**

Wen Qiao (乔文), Soochow University

**20.3 2D/3D Mixed Display Based on Polarization Division Multiplexing (14:10-14:30)**

Qiang Li, Sichuan University

**20.4 Weighted Simultaneous Algebra Reconstruction Technique (wSART) for Additive Light Field Synthesis (14:30-14:50)**

Chen Gao, Zhejiang University

**20.5 On "3D Vertigo Syndrome"--- And also Drive-in Cinemas (14:50-15:10)**

Chao Li, Central China Display Laboratories

**Session 21: Fabrication for Printed Displays (Printed Display)**

**Monday, July 18/13:30-15:10/ Meeting Room 315**

**Chair: Junfeng Sun (孙俊峰), Huzhou University**

**21.1 Invited Paper: Inkjet Printing Perovskite Quantum Dot Light-emitting Devices (13:30-13:50)**

Junbiao Peng (彭俊彪), South China University of Technology

**21.2 Invited Paper: Custom-shaped Display made by Inkjet Printing (13:50-14:10)**

Li Sun (孙力), Hefei BOE Joint Technology Co. Ltd.

**21.3 Invited Paper: Avoiding Mini-LED circuit scratch in process (14:10-14:30)**

Tenggang Lou (楼腾刚), Shanghai Tianma MICRO-ELECTRONICS Co., Ltd.

**21.4 Invited Paper: A competitive next-generation technology for large-size display-IJP OLED (14:30-14:50)**

Jinchuan Li (李金川), Shenzhen China Star Optoelectronics Semiconductor Display Technology Co., Ltd

**21.5 Invited Paper: All-solution preparation of double emitting layers flexible white OLEDs with color-tunable from blue to white emission (14:50-15:10)**

Suling Zhao (赵谿玲), Beijing Jiaotong University

**Session 22: VR/AR/MR Devices (AR&VR)**

**Monday, July 18/15:40-17:00/ Meeting Room 202**

**Chair: Wen Qiao (乔文), Soochow University**

**Co-Chair: Tianqi Huang (黄天琪), Tsinghua University**

**22.1 *Invited Paper*: Single mode Red, Green and Blue Laser Diodes and their Applications for HMD, AR/VR Glasses (15:40-16:00, Online)**

Yasuaki Hirano, Sharp

**22.2 *Invited Paper*: A Review of Microdisplay Panels Based on Silicon Backplane (16:00-16:20)**

Yixing Chen (陈弈星), Smartvision

**22.3 Intraocular Augmented Reality Device with Retinal Prosthesis (16:20-16:40)**

Jiaxun Ye, Shanghai Jiao Tong University

**22.4 Fast Hologram Generation Using Optical Fourier Lenses (17:00-17:20)**

XiangLi Lei, Sichuan University

**Session 23: Quantum Dot Electroluminescence 1 (EMQ(QL))**

**Monday, July 18/15:40-17:00/ Meeting Room 203**

**Chair: Huaiting Shi (施槐庭), BOE**

**Co-Chair: Xuyong Yang (杨绪勇), Shanghai University**

**23.1 *Invited Paper*: Inkjet printing quantum dot light-emitting devices (15:40-16:00)**

Fushan Li (李福山), Fuzhou University, China

**23.2 *Invited Paper*: Device physics and material chemistry of quantum-dot light-emitting diodes (16:00-16:20)**

Yizheng Jin (金一政), Zhejiang University, China

**23.3 *Invited Paper*: A Methodology for Building Charge-Injection Balance in Inverted QLED Based on Cross-Linkable Electron Blocking Material (16:20-16:40)**

Qing Li (李青), Southeast University, China

**23.4 *Invited Paper*: Challenges for Realizing QD-LED (16:40-17:00, Online)**

Shota Okamoto, Sharp Display Technology Corporation

**Session 24: Lighting, Health, Safety and Engineering Applications (Lighting)**

**Monday, July 18/15:20-16:40/ Meeting Room 208-209**

**Chair: QiuHong Hu (胡秋红), Zhejiang Smart Lighting Technology Ltd**

**24.1 *Invited Paper*: On Evaluation and Standardization of Photobiological Health for Children (15:20-15:40)**

QiuHong Hu (胡秋红), Zhejiang Smart Lighting Technology Ltd, Hangzhou, China

**24.2 *Invited Paper*: Measuring scalar illuminance: simulations, error analysis, and the way to improve its accuracy (15:40-16:00)**

Ling Xia (夏岭), Hohai University

**24.3 Study on the Mechanism of Glare in Road Traffic (16:00-16:20, Online)**

Yunpeng Guo, Faculty of Architecture, Civil and Transportation Engineering, Beijing University of Technology, Beijing, China

**24.4 High Efficient Persistent Luminescence from Förster Resonance Energy Transfer Processes (16:20-16:40)**

Zhiyong Yang (杨志涌), School of chemistry, Sun Yat-sen University

**Session 25: Sensor Integration in Displays (Touch & Interactive Displays)**

**Monday, July 18/15:20-16:40/ Meeting Room 210-211**

**Chair: Hang Zhou(周航), Peking University Shenzhen Graduate School**

**25.1 *Invited Paper*: Novel design and Study of NFC(Near Field Communication) Coil integrated in OLED display Panel and MFPC(Main Flexible Printed Circuit) (15:20-15:40)**

Wang Wei (王伟), Chengdu BOE Optoelectronics Technology Co., LTD

**25.2 High Detectivity Perovskite-IGZO Phototransistor with Tunable Photoconductive Gain (15:40-16:00)**

Hang Zhou, Peking University Shenzhen Graduate School

**25.3 Integrated Self-Capacitance Touch Panel for Flexible OLED Display (16:00-16:20)**

Feng Lu, Shanghai Tianma Microelectronics Co., Ltd.

**25.4 Effects of Different Input Devices on Performance and Fatigue (16:20-16:40)**

Ying Li, CNIS

**Session 26: Flexible Electronics & Materials (E-Paper and Flexible Displays)**

**Monday, July 18/15:20-16:40/ Meeting Room 306**

**Chair: Xidu Wang (王喜杜), Foshan ESLEET technologies Co., Ltd**

**26.1 *Invited Paper*: Organic TFTs for Biaxially formed Active Surfaces (15:20-15:40, Online)**

Michael Banach, FlexEnable

**26.2 *Invited Paper*: Computational chemistry study of an aggregation-induced delayed fluorescence material: synthesis and properties (15:40-16:00)**

Yue Zhang(张悦), Qingdao University of Technology

**26.3 Synchronously micro-patterning and nano-welding silver nanowires for high-performance transparent electrodes (16:00-16:20)**

Ting Wang, Sun Yat-sen University

**26.4 Force-induced Tunable Lens for Dark-zone Compensation in Stretchable Display (16:20-16:40)**

Zi-yi Wu, Sun Yat-sen University

**Session 27: Mini-LED Backlight (Display System)**

**Monday, July 18/15:20-17:00/ Meeting Room 307**

**Chair: Honglei Ji (季洪雷), TCL**

**27.1 POB Technology Applied in Mini LED Backlight (15:20-15:40)**

Honglei Ji (季洪雷), TCL

**27.2 Ultra-thin mini-LED backlight using a light coupling structure (15:40-16:00)**

Zibin Lin, Fuzhou University

**27.3 A Novel Hybrid Driving Method for Mini/Micro LED Display (16:00-16:20)**

Limin Wang, China Star Optoelectronics Semiconductor Display Technology Co., Ltd.

**27.4 Design of Double Freeform Lens for Mini-LED Backlight Modules (16:20-16:40)**

Ling Yang, Hefei University of Technology

**27.5 Adaptive Driving Algorithm for Field Sequential Color LCDs with mini-LED Backlight Based on Deep Learning (16:40-17:00)**

Guowei Zou, SUN YAT-SEN UNIVERSITY

**Session 28: Materials for Printed Displays (Printed Display)**

**Monday, July 18/15:20-16:20/ Meeting Room 315**

**Chair: Junbiao Peng (彭俊彪), South China University of Technology**

**28.1 *Invited Paper*: Development of Low-temperature Cross-linked Hole Transport Layer for High Efficient QLEDs (15:20-15:40)**

Wenming Su (苏文明), SINANO, CAS

**28.2 *Invited Paper*: Blue OLED Materials Design and Device Architecture Development (15:40-16:00)**

Jingyao Song (宋晶尧), Guangzhou ChinaRay optoelectronic materials co., LTD

**28.3 *Invited Paper*: Latest Development of Soluble OLED Materials and its Application to Mid-to Large-sized Panel Production (16:00-16:20, Online)**

Daisuke Fukushima, Sumitomo Chemical

**Session 29: Display Panels and Materials (Display Application)**

Tuesday, July 19/8:30-10:10/ Meeting Room 206

Chair: Zhifu Li (李治福), TCL CSOT

**29.1 *Invited Paper*: The key technology of professional BD cell Monitor (8:30-8:50)**

Kai Diao (刁凯), BOE Technology Group Co., Ltd

**29.2 *Invited Paper*: A Brief Introduction to Advantages of LTPS Technology in High-end Notebook (8:50-9:10)**

Jingfeng Xue (薛景峰), Wuhan China Star Optoelectronics Technology Co., Ltd

**29.3 Perovskite-Oxide Heteronanocrystals for Light Emitting Application (9:10-9:30)**

Shu Xu, Hebei University of Technology

**29.4 An Advanced LCD with ultra-wide frame rate by using hybrid TFTs array technology (9:30-9:50)**

Chengzhi Luo, Wuhan China Star Optoelectronic Technology Co. Ltd

**29.5 Enhanced depth of field of integral imaging display using bifocal microlens array fabricated by two-step lithography (9:50-10:10)**

Wenwen Wang, Fuzhou University

**Session 30: Oxide TFT -Modeling, Performance & Reliability (Active-Matrix Devices)**

Tuesday, July 19/8:30-9:30/ Meeting Room 202

Chair: Bowen Zhu (朱博文), Westlake University

**30.1 *Invited Paper*: High performance optoelectronic devices based on IGZO thin-film-transistors (8:30-8:50, Online)**

Sung Kyu Park, Chung-Ang University

**30.2 *Invited Paper*: Device Physics and Compact Modeling of Metal Oxide Thin-Film Transistors (8:50-9:10)**

Wanling Deng (邓婉玲), Jinan University

**30.3 *Invited Paper*: Analytical Extraction Method of Density of States (DOS) for Metal Oxide Thin Film Transistors (9:10-9:30)**

Weijing Wu (吴为敬), South China University of Technology

**Session 31: Quantum Dot Electroluminescence 2 (EMQ(QL))**

Tuesday, July 19/8:30-9:30/ Meeting Room 203

Chair: Bo Qiao (乔泊), Beijing Jiaotong University

**31.1 *Invited Paper*: Highly Efficient Light-emitting Devices Based on Quantum dots/Perovskites (8:30-8:50)**

Xuyong Yang (杨绪勇), Shanghai University

**31.2 *Invited Paper*: High-Efficiency Blue Cadmium-Free Quantum Dot Light-Emitting Diodes (8:50-9:10)**

Kai Wang (王恺), Southern University of Science and Technology

**31.3 *Invited Paper*: Top-Emission Quantum-Dot Light-Emitting Diodes with High Operational Stability and Brightness (9:10-9:30, Online)**

Jeonghun Kwak, Seoul National University

**Session 32: Recent Materials Advances (OLEDs)**

Tuesday, July 19/8:30-9:50/ Meeting Room 208-209

Chair: Junyou Pan (潘君友), Guangzhou East-Crown Intelligent Technology Co., Ltd

**32.1 *Invited Paper*: Ultrapure and highly efficient blue organic light-emitting diodes (8:30-8:50, Online)**

Jun Yeob Lee, Sungkyunkwan University

**32.2 *Invited Paper*: Next Generation OLEDs (8:50-9:10, Online)**

Mike Weaver, UDC

**32.3 *Invited Paper*: Advanced Merck OLED materials: latest innovation (9:10-9:30)**

Xin-Yang Wang (王忻扬), Merck Display

**32.4 *Invited Paper*: Constructing Charge-Transfer Excited States for Narrowband Electroluminescence Materials with High Color Purity and Efficiency (9:30-9:50)**

Yue Wang (王悦), Jihua Lab

**Session 33: LC Beyond Display (LCT)**

Tuesday, July 19/8:30-9:50/ Meeting Room 306

Chair: Qi-Huo Wei (韦齐和), Southern University of Science and Technology

**33.1 *Invited Paper*: Our recently development on nonmechanical optical beam steering using liquid crystal antenna (8:30-8:50)**

Xiangru Wang(汪相如), University of Electronic Science and Technology of China

**33.2 *Invited Paper*: Tunable liquid crystal lens using 2D nano colloid (8:50-9:10, Online)**

Jang-Kun Song, Sungkyunkwan University

**33.3 *Invited Paper*: Polarization dependent light-driven liquid crystal elastomer actuators based on photothermal effect (9:10-9:30)**

Dan Luo (罗丹), Southern University of Science and Technology

**33.4 A Tunable Filter with Single Layer Twist Structure Liquid Crystals (9:30-9:50)**

Yao Gao, Shanghai Jiao Tong University

**Session 34: Fabrication of Display Panels (Display Manufacturing)**

Tuesday, July 19/8:30-10:10/ Meeting Room 307

Chair: Xiaolian Li (李晓莲), Dalian University of Technology

**34.1 *Invited Paper*: Multi - Color Tungsten Oxide Reflection Electrochromic Device for Display (8:30-8:50)**

Honglong Ning (宁洪龙), South China University of Technology

**34.2 *Invited Paper*: High Image Quality ADS PRO TV Comparable to OLED (8:50-9:10)**

Dongchuan Chen (陈东川), BOE TECHNOLOGY GROUP CO.,LTD

**34.3 High Resolution and High Speed Inspection Equipment for Mini-LED Substrates (9:10-9:30)**

Ryan Ge, Shenzhen Nanovision Corporation

**34.4 3-inch, 3000-ppi Silicon Nitride Masks for Direct Patterning of OLED Micro displays (9:30-9:50, Online)**

Shoucheng Dong, Hong Kong University of Science and Technology

**34.5 Study on different matching of sealant, liquid crystal and lamp for LCD (9:50-10:10)**

Xintong Wang, Shenzhen China Star Optoelectronics Technology Co., Ltd

**Session 35: Vehicle Display: Standards and Methods (Vehicle Display)**

Tuesday, July 19/8:30-9:30/ Meeting Room 315

Chair: Zong Qin(秦宗), Sun Yat-Sen University

**35.1 *Invited Paper*: The Development Trend of Vehicle Display Technology (8:30-8:50)**

Pengtao Li (李鹏涛), BOE

**35.2 *Invited Paper*: The latest published VDE test standard for the durability and functionality testing of display (8:50-9:10)**

Wolfgang P. Weinhold, Institute for Surface and Product Analysis - ISPA

**35.3 Study on Technology to Enhance the Strength of Display Module for Vehicle (9:10-9:30)**

Liang Huang, Tianma Micro-electronics

**Session 36: Display Effect Improvement Algorithm (Display Application)**

Tuesday, July 19/10:20-11:40/ Meeting Room 206

Chair: Shu Xu (徐庶), Hebei University of Technology

**36.1 *Invited Paper*: White-balanced Healthy Displays based on Quantum-dot Color Conversion (10:20-10:40)**

Sheng Xu (徐胜), Fuzhou University

**36.2 A New Driving Method for Improving the Image Quality of Viewing Angle Controllable Display (10:40-11:00)**

Limei Jiang, InfoVision Optoelectronics (Kunshan) Co.,LTD

**36.3 A Dynamic Contrast Enhancement Method for TV Picture Quality Improvement (11:00-11:20)**

Qichong Tian, TCL

**36.4 A Comprehensive Quality Assessment of Video Super-Resolution for Ultra High-Resolution Application (11:20-11:40)**

Danni Deng, Southeast University

**Session 37: Oxide TFT - Process & Structure (Active-Matrix Devices)**

Tuesday, July 19/9:40-11:20/ Meeting Room 202

Chair: Weijing Wu (吴为敬), South China University of Technology

**37.1 *Invited Paper*: LTPO TFT Technologies for Advanced AMOLED Displays (9:40-10:00, Online)**

Jin Jang, KHU, Korea

**37.2 *Invited Paper*: Nanosheet High Mobility SnO<sub>2</sub>-SnO Complementary TFTs for System-on-Display and Monolithic Three-Dimensional Integrated Circuit (10:00-10:20, Online)**

Albert Chin, National Yang Ming Chiao Tung University

**37.3 Development of High Performance Oxide TFTs Using Back-Channel-Etch Structure With Copper Electrodes (10:20-10:40)**

Zijie He, TCL China Star Optoelectronics Technology Co., Ltd

**37.4 Self-Aligned Top-Gate Amorphous ZnSnO Thin-Film Transistor with Thermal-Stable Al Reaction-Doped Source/Drain (10:40-11:00)**

Huan Yang, Peking University

**37.5 Solution-Processed Metal Oxide Semiconductors Thin-Film Transistors for Dynamic Sensor Arrays (11:00-11:20)**

Bowen Zhu, Westlake University

**Session 38: Quantum Dot Photoluminescence (EMQ(QL))**

**Tuesday, July 19/9:40-11:00/ Meeting Room 203**

**Chair: Kai Wang (王楷), Southern University of Science and Technology**

**38.1 Invited Paper: Air-stable quantum dots for barrierless applications (9:40-10:00, Online)**

ZhongSheng Luo, Nanosys

**38.2 Invited Paper: Enabling High Resolution Photopatternable Quantum Dot Downconverters (10:00-10:20, Online)**

Yu Kambe, NanoPattern

**38.3 Invited Paper: CdSe/CdSeS nanoplatelets with continuously tunable emission and high PLQYs (10:20-10:40)**

Yunan Gao (高宇南), Peking University

**38.4 Synthesis of Highly Luminescent InP-based Core/shell/shell Colloidal Quantum Dots (10:40-11:00)**

Xueqing Xu, Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences

**Session 39: Phosphorescent Materials (OLEDs)**

**Tuesday, July 19/10:00-11:00/ Meeting Room 208-209**

**Chair: Xin-Yang Wang (王忻扬), Merck Display**

**39.1 Invited Paper: High Performance Red and Green Phosphorescent Emitters Suitable for BT.2020 Color Gamut (10:00-10:20)**

Huiqing Pang (庞惠卿), Beijing Summer Sprout Technology

**39.2 Low Efficiency Roll-off Blue Phosphorescent OLEDs at High Brightness Based on [3+2+1] Coordinated Iridium (III) Complexes (10:20-10:40, Online)**

Guodan Wei, Tsinghua University

**39.3 Highly Efficient Near-Infrared Phosphorescent OLEDs (10:40-11:00, Online)**

Zhiqiang Ji, Universal Display Corporation

**Session 40: LC Phase Modulator (LCT)**

**Tuesday, July 19/10:00-11:40/ Meeting Room 306**

**Chair: Dan Luo (罗丹), Southern University of Science and Technology**

**40.1 Invited Paper: Energy Manipulation of Liquid Crystal Phase Modulators (10:00-10:20)**

Jiangang Lu (陆建钢), Shanghai Jiao Tong University

**40.2 Invited Paper: Flat Liquid Crystal Optics for AR/VR Applications (10:20-10:40)**

Qi-Huo Wei (韦齐和), Southern University of Science and Technology

**40.3 Invited Paper: 2D/3D compatible display based on liquid crystal lens array (10:40-11:00)**

Qionghua Wang (王琼华), Beihang University

**40.4 A polarization-independent liquid crystal device with large phase retardation (11:00-11:20)**

Yumeng Zhang, Shanghai Jiao Tong University

**40.5 Fast Fringe-field-effect Free Continuous  $2.25\pi$  Phase Modulation Based on Non-linear Kerr Effect of Vertical Aligned Deformed Helix Ferroelectric Liquid Crystal (11:20-11:40, Online)**

Zhengnan Yuan, HKUST

#### **Session 41: Display Materials Processing (Display Manufacturing)**

**Tuesday, July 19/10:20-11:40/ Meeting Room 307**

**Chair: Honglong Ning (宁洪龙), South China University of Technology**

**41.1 Invited Paper: On Production of a Fine Metal Mask for AMOLED: Opportunities & Challenges (10:20-10:40, Online)**

Dean Chen (陈鼎国), Magic Star Technology (Ningbo) Co., Ltd.

**41.2 Invited Paper: Preparation and Optic-Property of Dichroic Dyes Doped Thin PDLC Films (10:40-11:00)**

Xiaolian Li (李晓莲), Dalian University of Technology

**41.3 Invited Paper: Molybdenum Titanium based Sputter Targets for TFT Application (11:00-11:20)**

Hendrik Hotz, Plansee

**41.4 Novel Photolithography using Near Infrared Exposure and its Photoresist including Black Photoresist (11:20-11:40, Online)**

Akihiko Igawa, eChem Solutions Japan

#### **Session 42: Flexible Printed Electronics (OE-A Joint Session)**

**Tuesday, July 19/9:40-10:40/ Meeting Room 315**

**Chair: Zhe Liu (刘哲), LinkZill**

**42.1 Invited Paper: 31" FHD Flexible Printed OLED TV Display Technology (9:40-10:00, Online)**

Jueng Gil (James) Lee, Guangdong Juhua Printing

**42.2 Invited Paper: Universal TFT platform for high-throughput and low-cost optical/pressure/bio sensors (10:00-10:20)**

Zhe Liu (刘哲), LinkZill

**42.3 Invited Paper: Wearable Healthcare Devices Powered by Soft Battery (10:20-10:40)**

Xiachang Zhang (张霞昌), Enfucell Flexible Electronics

#### **Session 43: Oxide TFT – Application (Active-Matrix Devices)**

**Tuesday, July 19/13:30-15:10/ Meeting Room 202**

**Chair: Xuehuan Feng (冯雪欢), Hefei BOE Joint Technology Co.**

**43.1 Invited Paper: Newly structured Oxide TFT for the implementation of metaverse (13:30-13:50, Online)**

Sang-Hee Ko Park, KAIST

**43.2 Invited Paper: Active-Matrix Digital Microfluidics Platform based on TFT Array (13:50-14:10)**

Hanbin Ma (马汉彬), Suzhou Institute of Biomedical Engineering and Technology



**43.3 Invited Paper: Large-Area Imagers using Metal Halide Perovskites (14:10-14:30, Online)**

Gerwin Gelinck, TNO/Holst Centre

**43.4 Metal-Oxide Thin-Film Transistors for Driving High-Resolution Active-Matrix Ferroelectric Liquid-Crystal Displays (14:30-14:50, Online)**

Sisi Wang, HKUST

**43.5 Temperature Sensor Based on a Pseudo-E Inverter Built with Metal-Oxide Thin-Film Transistors (14:50-15:10, Online)**

Runxiao Shi, Hong Kong University of Science and Technology

**Session 44: Quantum Dot Electroluminescence 3 (EMQ(QL))**

Tuesday, July 19/13:30-14:50/ Meeting Room 203

Chair: Yu Chen (陈煜), Soochow University

**44.1 Invited Paper: Carbon Dots as Versatile Auxiliary Components of Perovskite-Based Light-Emitting Devices (13:30-13:50)**

Xiaoyu Zhang (张晓宇), Jinlin University

**44.2 Invited Paper: Solution Processed Light Emitting Diodes based on Organic, Inorganic and Nanostructured Materials (13:50-14:10)**

Zugang Liu (刘祖刚), China Jiliang University

**44.3 Invited Paper: Single Component White-emitting ZnTeSe Quantum Dots for Electroluminescence QD-LED application (14:10-14:30, Online)**

Armin Wedel, Functional Material and Devices, Fraunhofer Institute for Applied Polymer Research IAP

**44.4 Invited Paper: Quantum Dot Infrared Image Sensors for the Future Display Interfaces (14:30-14:50, Online)**

Pawel Malinowski, IMEC

**Session 45: TADF and Hyper-fluorescent Materials (OLEDs)**

Tuesday, July 19/13:30-14:50/ Meeting Room 208-209

Chair: Huiqing Pang (庞惠卿), Beijing Summer Sprout Technology

**45.1 Invited Paper: OLED materials and devices based on TADF-sensitized fluorescence emission (13:30-13:50)**

Dongdong Zhang(张东东), Tsinghua University

**45.2 Invited Paper: Design of High Performance Organic Thermally Activated Delayed Fluorescence Dendrimer Emitters for Solution-Processed Organic Light-Emitting Diodes (13:50-14:10, Online)**

Eli Zysman-Colman, University of St Andrews

**45.3 Improving Lifetime of High-Efficiency Blue OLED Based on Thermally Activated Sensitized Fluorescence (14:10-14:30)**

LICHANG ZENG, Beijing Eternal Materials Technology

**45.4 The Architecture of Hyper-fluorescent Emitter via Proper Management of Molecular Aggregation (14:30-14:50, Online)**

Ezhakudiyar Ravindran, Department of Information Display, Kyung Hee University

**Session 46: Micro-LED Displays (EMQ(Micro-LED))**

**Tuesday, July 19/13:30-15:30/ Meeting Room 210-211**

**Chair: Jie Sun (孙捷), Fuzhou University**

**46.1 Invited Paper: MicroLED Technology and Applications by PixeLED Solutions (13:30-13:50, Online)**

Falcon Liu (刘应苍), PlayNitride Display Co., Ltd.

**46.2 Invited Paper: 4.82-inch LTPS TFT Micro-LED Display for Tiled Display Modules (13:50-14:10)**

Xuan Cao (曹轩), Vistar Corporation

**46.3 Invited Paper: 7.1-inch Full Color Flexible Micro-LED Display Based on Topgate IGZO Backplane (14:10-14:30)**

Limei Zeng (曾丽媚), TCL Shenzhen China Star Optoelectronics Technology Co., Ltd

**46.4 Invited Paper: Image quality improvement technology for mini/micro LED (14:30-14:50)**

Guojing He (何国经), NovaStar

**46.5 Laser Processes for MicroLED Display Manufacturing (14:50-15:10)**

Stephen Li, Coherent Laser Systems GmbH&Co.KG

**46.6 A Study on Micro-LED ACF Bonding Technology: Requirement and Challenges (15:10-15:30)**

Saisai Han(韩赛赛), Chengdu Vistar Display Company

**Session 47: High Perceptive LCDs (LCT)**

**Tuesday, July 19/13:30-14:50/ Meeting Room 306**

**Chair: Jiangang Lu (陆建钢), Shanghai Jiao Tong University**

**47.1 Invited Paper: Color Gamut Larger than 115%NTSC in LCD With YAG Backlight Using Polarization Interference Filter (13:30-13:50)**

Yubao Sun(孙玉宝), Hebei University of Technology

**47.2 A 15.6 FHD LTPS Product Display With Wide Refresh Rate from 5Hz to 480Hz (13:50-14:10)**

Jian Tao, Wuhan China Star Optoelectronics Technology

**47.3 A New Generation of LCD's Based on Ferroelectric Liquid Crystals Showing Uniform and Stable Orientation (14:10-14:30, Online)**

Valeri Lapanik , Institute of Applied Physical Problems

**47.4 Ultra Wide Color Gamut and High Luminous Efficiency LCD by Environment-friendly Organic Material without Cadmium (14:30-14:50)**

Jie Liu, BOE Technology Group Co., Ltd

**Session 48: Fabrication of TFT Backplanes (Display Manufacturing)**

**Tuesday, July 19/13:30-14:50/ Meeting Room 307**

**Chair: Ryan Ge (葛仁彦), Shenzhen Nanovision Corporation**

**48.1 Invited Paper: Development of TFT-Based Driving Circuit for mobile AM-uLED displays (13:30-13:50, Online)**

Yong-Sang Kim, Sungkyunkwan Univ.

**48.2 Inline Low Temperature Polycrystalline Silicon Roughness and Grain Size Metrology Enabled by Electron Beam Review for a Better Process Control of Excimer Laser Annealing (13:50-14:10)**

Lin Meng, Applied Materials China

**48.3 Formation of potential barriers at grain boundaries in multicomponent ZnO-based transparent thin films (14:10-14:30, Online)**

Victor Belyaev, Moscow Region State Univ

**48.4 Variable Top Gate Oxide TFT Structures for Premium High-end Display with Process Simplicity and Device Stability (14:30-14:50, online)**

Hyun-Sik Seo, TCL China Star Optoelectronics Display Technology Co. Ltd

**Session 49: Flexible Printed Electronics (OE-A Joint Session)**

**Tuesday, July 19/13:30-14:50/ Meeting Room 315**

**Chair: Fushan Li (李福山), Fuzhou University**

**49.1 Invited Paper: Functional Inkjet Printing Factors, Applications, and Markets (13:30-13:50, Online)**

Lou Dadok, FUJIFILM Dimatix

**49.2 Invited Paper: Printing conductive copper traces for sustainable production of Displays and PCBs: Shifting from Etching to printing (13:50-14:10, Online)**

Ofer Shochet, Copprint

**49.3 Invited Paper: Flexible touch display innovations with new conductive polymer solutions (14:10-14:30, Online)**

Armin Sautter, Heraeus

**49.4 Invited Paper: High-volume Production of Flexible Printed Electronics (14:30-14:50, Online)**

Florian Ullrich, Innovation Lab

**Session 50: TFT Device and Circuit (Active-Matrix Devices)**

**Tuesday, July 19/15:20-17:00/ Meeting Room 202**

**Chair: Hanbin Ma (马汉彬), Suzhou Institute of Biomedical Engineering and Technology**

**50.1 Invited Paper: A ultra-thin channel oxide-TFT for next-generation inverter circuit (15:20-15:40, Online)**

Kenji Nomura, UCSD

**50.2 Invited Paper: Ultralow Power Stretchable TFTs and Circuits (15:40-16:00, Online)**

Arokia Nathan, Chen Jiang(蒋琛), Darwin College, University of Cambridge, UK

**50.3 Invited Paper: Contact-controlled transistors: critical design parameters (16:00-16:20, Online)**

Radu Sporea, University of Surrey

**50.4 Invited Paper: A new MoS<sub>2</sub>-HZO neuromimetic transistor for intelligent display (16:20-16:40)**

Miao Zhao (赵妙), Institute of Microelectronics of the Chinese Academy of Sciences

**50.5 MPRT Enhancement Gate Driver Circuit Employing IGZO TFTs for Image-Quality Improvement (16:40-17:00)**

Xuehuan Feng, Hefei BOE Joint Technology Co.

**Session 51: Perovskite (EMQ(QL))**

**Tuesday, July 19/15:00-16:20/ Meeting Room 203**

**Chair: Yunan Gao (高宇南), Peking University**

**51.1 Invited Paper: Interfacial Regulation for Emissive Materials (15:00-15:20)**

Yu Chen (陈煜), Soochow University

**51.2 Invited Paper: The inorganic lead halide perovskite nanocrystals: the materials control and stability approach (15:20-15:40)**

Bo Qiao (乔泊), Beijing Jiaotong University

**51.3 *Invited Paper*: How perovskite quantum dots are supporting the rise of mini-LED based LCD displays Norman (15:40-16:00, Online)**

Lüchinger, Avantama AG

**51.4 *In-situ* Fluorescence Monitoring Technique for Highly Reproducible Perovskite Light-emitting Diodes (16:00-16:20)**

Huibo Yan, Shenzhen University

**Session 52: Degradation and Lifetime (OLEDs)**

Tuesday, July 19/15:00-16:20/ Meeting Room 208-209

Chair: Zunxian Yang (杨尊先), Fuzhou University

**52.1 *Invited Paper*: Analysis of TADF-OLED degradation induced by extrinsic impurities (15:00-15:20, Online)**

Kentaro Harada, Opera Solutions

**52.2 *Invited Paper*: Digital Twins for OLED Lifetime Predictions (15:20-15:40)**

Feilong Liu (刘飞龙), South China Normal University, Simbeyond B.V.

**52.3 Mechanism of Perforated Encapsulation Failure in Reliability Test of Foldable Display (15:40-16:00)**

Xi-Ping Li, CHENGDU BOE OPTOELECTRONICS TECHNOLOGY CO.,LTD

**52.4 Suppression of Initial Degradation for High-Efficiency Solution-Processed Organic Light Emitting Diodes (16:00-16:20, Online)**

Thi Na Le, Kyung Hee University

**Session 53: Micro-LED Device & Process-2 (EMQ(Micro-LED))**

Tuesday, July 19/15:40-17:20/ Meeting Room 210-211

Chair: Guojing He (何国经), NovaStarshort

**53.1 *Invited Paper*: Process optimization of passive matrix GaN micro-LED displays (15:40-16:00)**

Jie Sun (孙捷), Fuzhou University

**53.2 *Invited Paper*: High Resolution UPD Technology for MicroLED Microbonding based on High Viscosity Paste (16:00-16:20, Online)**

Filip Granek, XTPL S.A.

**53.3 Atomic-scale sidewall passivation for microLED devices (16:20-16:40, Online)**

Jouko Lång, Comptek Solutions Oy

**53.4 Quantum Dot Micro-LED Display Research (16:40-17:00)**

Jing Chen, Chongqing Konka Optoelectronics Technology Research Institute Co., Ltd., CHONG QING, China

**53.5 Low IR Drop 480×540RGB Mini-LED Display Based on High Mobility Ln-IZO TFT (17:00-17:20)**

Lei Zhou, Guangzhou New Vision Opto-electronic Technology

**Session 54: New Materials and Alignment Technology (LCT)**

Tuesday, July 19/15:00-17:00/ Meeting Room 306

Chair: Enguo Chen (陈恩果), Fuzhou University

**54.1 *Invited Paper*: Highly efficient Quantum Rods LEDs for LCD backlights (15:00-15:20, Online)**

Abhishek Srivastava, HKUST

**54.2 *Invited Paper*: Flat Liquid Crystal Microlens Based on Spatially-variant Photoalignment (15:20-15:40)**

Huapeng Ye (叶华朋), South China Normal University

**54.3 *Invited Paper*: Surface control of LC Alignment for Creation of Liquid crystal Lenses Arrays (15:40-16:00, Online)**

Alexander Muravsky, Institute of Chemistry of New Materials NAS Belarus

**54.4 *Invited Paper*: Photoaligned ferroelectric liquid crystals for displays and photonics: what next (16:00-16:20, Online)**

Vladimir G. Chigrinov, Moscow Region State University

**54.5 *Novel*, Liquid Crystal Formula to Overcome LTPS LCD Image Sticking Without Adjustment of Gamma Code, Optical, VHR and IS Evaluation (16:20-16:40)**

Bo-Cheng Tao, AU Optronics(Shanghai)Co., Ltd. Shenzhen Branch

**54.6 *An original approach to creating liquid crystals and anisotropic materials with a wide range of practical application (16:40-17:00, Online)***

Vladimir Bezborodov, Belarusian State Technological University

**Session 55: Fabrication of Electrodes (Display Manufacturing)**

Tuesday, July 19/15:00-16:00/ Meeting Room 307

Chair: Xiongtu Zhou (周雄图), Fuzhou University

**55.1 *Invited Paper*: Thin Metallic Nano-Patterned Transparent Electrodes for Optoelectronic Applications (15:00-15:20, Online)**

A. Hubarevich, Y. Mukha and Alex Smirnov, Belarusian State University

**55.2 *Low Resistive Metallization and High Adhesion Layer of Ni Alloy in Stretchable Display Backplane (15:20-15:40, Online)***

Jong Hyun Seo, Korea Aerospace University

**55.3 *Deposition of Conductive and Insulating Features at Micrometer Scale for Flexible Electronics and Printed Displays (15:40-16:00, Online)***

Aneta Wiatrowska, XTPL SA

**Session 56: Vehicle Display: Local dimming & AMOLED (Vehicle Display)**

Tuesday, July 19/15:00-16:40/ Meeting Room 315

Chair: Fan Tian (田凡), Tianma Microelectronics Co., Ltd.

**56.1 *Invited Paper*: The challenge of mini LED backlit application in automotive display (15:00-15:20)**

Ronghua Li (李荣华), Tianma Microelectronics

**56.2 *Invited Paper*: Novel Bistable Liquid Crystal Materials for AR/VR Technology, Vehicle and Flexible Display (15:20-15:40, Online)**

Valeri Lapanik, Institute of Applied Physical Problems

**56.3 *Invited Paper*: Exterior Displays for Autonomous Cars: Technologies, Icons, Evaluation (15:40-16:00, Online)**

Karlheinz Blankenbach, Pforzheim University

**56.4 *Invited Paper*: Optimized Algorithm and BLU for Local Dimming of Automotive Displays (16:00-16:20, Online)**

Chihao Xu, Saarland University

**56.5 High Temperature Operation Stability Optimization for Flexible Automotive AMOLED by Rational Design (16:20-16:40)**

Xin Mou, BOE

## Poster Session

### P 1. AMD

#### **P 1.1 Co-sputtering-deposited Hf-doped ITO Thin Films for Thin Film Transistors Application (Online)**

Jingye Xie, Beijing Information Science and Technology University

#### **P 1.2 Improvement of Mobility and Reliability of a-IGZO TFTs by Dual-Gate Driving**

Chuanbao Luo, TCL China Star Optoelectronics Technology Co., Ltd

#### **P 1.3 The Improve of Pixel Design and Circuit Signal on Short Time Image Sticking for Flexible AMOLED**

Xia Tang, Chengdu BOE Optoelectronics Technology CO., LTD

#### **P 1.4 Analysis of the Hump Characteristics in Poly-Si Thin Film Transistor & Process a Method to Suppress Hump Effect**

Yiyu Guo, Wuhan China Star Optoelectronics Technology Co. Ltd., Wuhan, Hubei, China

#### **P 1.5 Dynamic Current Stress-Induced Instabilities of a-InGaZnO TFTs**

Fayang Liu, Peking University

#### **P 1.6 Proximity Pattern Identification Using an Artificial Compound Eye with Monolithically Integrated Amplifiers and Photodetectors (Online)**

Zhichao Zhou, Hong Kong University of science and technology

#### **P 1.7 The Mechanisms and a Solution for Drain Current Drop in Amorphous InGaZnO Thin-Film Transistors**

Guowei Chen, Sun Yat-sun University

#### **P 1.8 A New n<sup>+</sup>-Formation Process by NH<sub>3</sub> Plasma Treatment for Top Gate Coplanar IGZO Thin-film Transistors**

Chuanke Chen, Institute of Microelectronics of The Chinese Academy of Science

#### **P 1.9 Effect of Wavelength on Photoresponse Characteristics of Amorphous InZnO Thin Film Transistors**

Hao Liu, Peking University

#### **P 1.10 The Effects of Annealing Atmosphere on Dual Gate Dielectric ITO TFTs (Online)**

Guangchen Zhang, Beijing Institute of Technology

#### **P 1.11 High-mobility ZnO Thin-film Transistors with HfO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> Bilayer Dielectric**

Qi Li, Peking University

#### **P 1.12 Vacuum Annealing Treatment on High-Performance AlZnO Thin Film Transistors**

Dengqin Xu, Peking University

#### **P 1.13 A 10.1-inch-high Stability 120Hz Metal Oxide in-Cell Touch LCD Display**

Yuhuai Chen(陈宇怀), Mantix Display Technology

#### **P 1.14 Optimizing the Electric Characteristics of Oxide ESD Device by Employing Novel Device Design and Modified Process.**

Yi Zhang, Guangzhou China Star Optoelectronics Semiconductor Display Technology Co., Ltd.

#### **P 1.15 TFT-based Addressing and Readout Circuits for Hybrid LAE-CMOS Interfacing**

Zhongyi Zhou, Sun Yet-Sen University

#### **P 1.16 Frontend Amplifier with Unipolar Oxide TFTs for Heart Rate Measurement**

Yukming Tsui, South China University of Technology

#### **P 1.17 Ultraviolet Light Response of Amorphous Oxide Thin-Film Transistors with Double-Stacked Channel Layers**

Zenghui Fan, Shanghai Jiao Tong University

**P 1.18 Comparison of the Short-Channel Effects in Source-Gated Transistors and Conventional Thin Film Transistors**

Jiawei Zhang, Shandong University

**P 1.19 10000PPI Active-Matrix Micro-LED Driver Circuit Design**

Yuxin Li, Southern University of Science and Technology

**P 1.20 Solution-Processed Hybrid Light-Emitting Field-Effect Transistors**

Penghui He, Hunan University

**P 2. AR&VR**

**P 2.1 Resolution-tripled Integral Imaging Light Field Displays by Recombining Subpixels with Zero Sampling Error**

Wenchao Yang, Sun Yat-Sen University

**P 2.2 Rapid Generation of Pinhole-type Holographic Stereogram in Near-eye Display**

Xu Zhang, Hefei University of Technology

**P 2.3 The development of virtual reality technology and the origin of metaverse**

Chuang Wang, North China University of Technology

**P 2.4 Development and Prospect of Medical Action Recognition Technology for Virtual Reality (VR)**

Jianwen Song, North China University of Technology

**P 2.5 Overview and Prospect of the Application of Immersive VR in Simulating Emergency Response**

Hao Wang, North China University of Technology

**P 2.6 Based on the Status Quo of Virtual Reality and Prospects for Future Development**

Yaohui Hou, North China University of Technology

**P 2.7 Optimization of Field of View in a Full-color Waveguide Display Based on Polarization Volume Grating**

Yuchen Gu, Southeast University

**P 2.8 Research on Multi-user Interaction Design in Augmented Reality**

Sensen Zhao, North China University of Technology

**P 2.9 The Research of Multi-user Cooperative Interaction Model in Augmented Reality**

Jingliang Wang, North China University of Technology

**P 2.10 Design of a Freeform Surface Lens Based on the Optimization Target Illumination Distribution**

Le Zhang, Hefei University of Technology

**P 2.11 Research on Virtual Reality Key Optoelectronic Parameters**

Xu Hao, SUN YAT-SEN UNIVERSITY

**P 2.12 Application Status and Prospect of Mixed Reality in Medical Surgery**

Sensen Zhao, North China University of Technology

**P 2.13 Full-color Augmented Reality Using Quantum-dot Color Conversion Film**

Ziping Zhou, Fuzhou University

**P 2.14 Application of Virtual Reality in Primary School English Teaching**

Dong Wang, School of Advanced Manufacturing, Fuzhou University



### **P 3. Display Application**

#### **P 3.1 Convolutional Neural Network based Image Segmentation Algorithm for Dual-Layer LCDs**

Kai Su, Hefei University of Technology

#### **P 3.2 Research on the Structure and Optical Performance of Reflective Liquid Crystal Display**

Kun Ma, Wuhan China Star Optoelectronics Technology Co., Ltd.,

#### **P 3.3 A HDR Image Layering Method Based on Improved Guided Filter**

Wenxuan Nie, Shanghai University

#### **P 3.4 Strategies to Improve the Photoelectric Performance of a-Si: H pin Ambient Light Sensor**

Jiyue Song, Wuhan China Star Optoelectronics Technology Co., Ltd

#### **P 3.5 Multi-period Folding Risk Analysis of Foldable AMOLED Display Module**

Wenxin Zhang, Hebei University of Science & Technology

#### **P 3.6 Local Compensation in 3D Light Field Display**

Yiyi Pu, Shenzhen Yinglun Technology Ltd

#### **P 3.7 An Improved Dehazing Algorithm for Fog Image at Night**

Xue Nan, Shanghai University

#### **P 3.8 Research on Improving Blueness Around QD + Edge-in Blue LED Architecture Modules**

Yuan Jia, BOE Technology Group Co., Ltd.

#### **P 3.9 An Approximating Natural Light LCD Technology**

Yu Zhang, Beijing BOE Display Technology Co., Ltd, Beijing, China

#### **P 3.10 Mini LED Technology Trend and Innovative Application**

Sha Liu, Beijing BOE Display Technology Co., Ltd., China

#### **P 3.11 An Improved Compression Method of HDR Image Dynamic Range**

Qinyi Yang, Shanghai University

#### **P 3.12 An Improved Color Restoration Method for High Dynamic Range Images**

Yang Ruilin, Shanghai University

#### **P 3.13 A Polarization Modulated Directional Backlight Autostereoscopic Display**

Yunjia Fan, Sun Yat-sen University

#### **P 3.14 Development of Thin Film Design based on IGZO-TFT Displays for Transmittance and Picture Quality Improvement**

Wang Hang, TCL China Star Optoelectronics Technology Co., LTD

#### **P 3.15 Verification and Analysis on Display In-folding Droplet-like Morphology and Influencing Factors**

Lijuan Zhao, Lu Liu, Shiming Shi, BOE Technology Group Co., LTD.

#### **P 3.16 A Novel Lens with Hybrid Structure for Ultra-thin Backlight Units**

Qiyu sun, Hefei University of Technology

#### **P 3.17 Programmable Virtual Illuminance Modulation in Directional Backlight Autostereoscopy**

Zhanhong Li, State Key Laboratory of Optoelectronic Materials & Technology, School of Physics, Sun Yat-sen University, Guangzhou, China

#### **P 3.18 Design of Microstructure Optical Film for Ultra-thin MiniLED Backlight Module**

Huili Xiao, Hefei University of Technology

#### **P 3.19 Demonstration of Underwater Wireless Optical Communication System Using a Green Micro-LED and FPGA-based PPM Modulation**

Rui Chen, Southern University of Science and Technology

#### **P 3.20 A Novel Algorithm for Nighttime Image Dehazing**

Zhenjie Jin, Shanghai University

**P 3.21 Chromodot: Non-electrical Color Changeable Pixel Dots for Board/Window Signage Display Using Light Control and Color Generating Technologies (Online)**

Kunio Sakamoto, Konan University

**P 3.22 One-way Observable Aero Signage Display Using Optical Prisms Doped with Dye and Pigments Which Enable to Make Transparent from Back Side (Online)**

Kunio Sakamoto, Konan University

**P 3.23 Multiple Regional-iteration Algorithm for Holographic Projection with Suppressed Speckle Noise**

Min Guo, Hefei University of Technology

**P 3.24 A Content-adaptive Filtering Algorithm based on Dual-cell LCDs (Online)**

Xiangjun Peng, BOE Technology Group Co., LTD, Beijing, China

**P 4. Display Electronics**

**P 4.1 Dual-Gate Indium-Gallium-Zinc Oxide Thin-Film Transistor with an Inserted Top Gate (Online)**

Yuqi WANG, HKUST

**P 4.2 De-Mura Processing Integrated in Display Drivers for AMOLED Display**

Jian Cai, Peking University

**P 4.3 Research on the effect of V<sub>gh</sub> on LCD screen luminosity**

Tengfei Ding, BOE

**P 4.4 Multifunctional Laminated Organic Passivation Layer on InSnZnO Thin-Film Transistors for Enhanced Reliability**

Delang Lin, the School of Microelectronics, South China University of Technology

**P 4.5 TFT characteristic Improvement of Amorphous Silicon by Design of Experiments**

Ming Wang, BOE Technology Group Co., Ltd

**P 4.6 High-efficiency and High-power 660 nm Laser Diode**

Yehua Xie, Shenzhen Raybow Optoelectronics Incorporation

**P 5. Display Manufacturing**

**P 5.1 FPC Bending Simulation and Analysis for Wearable Products**

Yaxin sun, Beijing BOE Optoelectronics Technology Co., Ltd

**P 5.2 Study of Air Sampling and Database Analysis on Mask Haze in TFT Manufacturing**

Yannan Gao, L&K Engineering (Suzhou) Ltd. Co.

**P 5.3 Customization of Metal Wire Taper Specifications**

Chunliu Yang, TCL

**P 5.4 The Improvement of Wet Stripping Residuals in Cu Process**

Jiawei He, InfoVision Optoelectronics Co., Ltd., Kunshan

**P 5.5 Research of Laser Cleaning Technique Application for Mini/micro-Led**

Sha Feng, BOE MLED Technology Co., Ltd.

**P 5.6 Analysis of ITO Residue in 4mask process applied in Extra large-size FFS LCDs**

Wei Wu, TCL CSOT

**P 5.7 Selective Laser Lift-off of GaN Micro-LED from a Sapphire Substrate Using 266-nm Solid-state Laser**

Junchao Yuan, Southern University of Science and Technology

**P 5.8 Improving Cross Line Defects of Ultra Narrow Bezel Displays**

Xintong Wang, Shenzhen China Star Optoelectronics Technology Co., Ltd

**P 5.9 Realize the High Resolution of BM by adjusting the Process, Equipment and Material Composition**

Hongshan Yin, CSOT

**P 5.10 Mini-LED Circuit Scratch in Process**

Tenggang Lou, Shanghai Tianma MICRO-ELECTRONICS Co., Ltd.

**P 5.11 Research and Improvement of PFA Peeling of TFT-LCD Display**

Lanyan Li, TCL China Star Optoelectronics Technology CO., LTD

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