

IMiD 2022

The 22nd International Meeting on Information Display
August 23-26, 2022 / BEXCO, BUSAN, KOREA

Session Title:	P1. Poster Session 1
Session Date:	August 24 (Wed.), 2022
Session Time:	13:20-14:50
Session Room:	Room 2A Hall

[P1-001] 13:20-14:50

Automatic Particle Inspection on Display Panel and Flexible Printed Circuit Bonding Pad Using Object Detection

Seung Hwan Cheong and Nam Ik Cho (Seoul Nat'l Univ., Korea)

[P1-002] 13:20-14:50

Automated Equipment Control System Using Natural Language Processing

Dongchan Seo, Jae Hyeon Cha, Heegwan Ryu, EunJi Lim, Younghoon oh, and Jueun Park (Samsung Display Co., Ltd., Korea)

[P1-003] 13:20-14:50

Energy Combining System Using Double Q-Learning

Dongchan Seo, Heegwan Ryu, Deok Jae Kim, Eun Ji Lim, Younghoon oh, and Jueun Park (Samsung Display Co., Ltd., Korea)

[P1-004] 13:20-14:50

Knowledge Distillation between Representation and Texture Features for Cover Glass Defect Classification

Gyuhyun Lee, Hye Jun Kim, Dong Woo Lim, Jong Myong Choi, and Keun Seob Choi (Samsung Display Co., Ltd., Korea)

[P1-005] 13:20-14:50

Gamma Correction AI Algorithm Using Process Parameters of Fab

Min-Weun Kim (Samsung Display Co., Ltd., Korea)

[P1-006] 13:20-14:50

A Decomposition-Based Ensemble Network for Estimation of Critical Dimension in Lithographic Process of OLED Panel

Sujin Park, Younggil Jin, and Jaewon Kim (Samsung Display Co., Ltd., Korea)

[P1-007]

13:20-14:50

Bayesian Optimization Method with Genetic Algorithm for Display Manufacturing Process Optimization

Daein Kang, Daeyong Kim, Jinsung Hwang, Jangwoo Kim, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-008]

13:20-14:50

HOP TFT IV Decoding with Asymmetric AE with Partial De-Noising

Kyongtae Park, Taeyoung Khim, Dongso Kim, Sanghoon Lim, Jungsuk Bae, Jongchan Lim, and Kyungjin Yoo (Samsung Display Co., Ltd., Korea)

[P1-009]

13:20-14:50

Display Sub-Pixel Shape Optimization Method for Maximizing Optical Properties

Bongjoon Park, Hyunyoung Choi, Sangyun Lim, Jongmin Ok, Daeyong Kim, and Jangwoo Kim (Samsung Display Co., Ltd., Korea)

[P1-010]

13:20-14:50

AI-Based Ensemble Architecture for Anomaly Detection of a Video Footage in an Evaporation Process of Manufacturing OLED Panels

Euiyoung Jeong, Eunwoo Kim, Changwook Seo, and Jaewon Kim (Samsung Display Co., Ltd., Korea)

[P1-011]

13:20-14:50

Automatic Failure Analysis of Touch Panel Displays Using XAI

Taekyung Yim, Sujin Park, Jin Jeon, and Sungho Cho (Samsung Display Co., Ltd., Korea)

[P1-012]

13:20-14:50

High Speed Transmission Line Design Using AI Technologies in Display

Hyo-Chul Lee, In-Soo Wang, Ji-Won Kim, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-013]

13:20-14:50

Layer Optimization of PCB for Display Using Simulation

Younyee Kang, Jiwon Kim, Insoo Wang, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-015]

13:20-14:50

Optimal Classification Process for Defective Images

Young Woo Choi and Hee June Yang (Samsung Display Co., Ltd., Korea)

[P1-016]

13:20-14:50

Efficient Generation of Training Data with Time Series Prediction Values

Wonjun Lee, Cholho Kim, Jiyoung Lee, Haeryeong Park, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-017]

13:20-14:50

Improvement of Fine Metal Mask Defect Classification Model Using Contrastive Supervised Learning

Sang Sik Yang and Yonghee Han (Samsung Display Co., Ltd., Korea)

[P1-018]

13:20-14:50

Development and Application of an AI Prediction Model for TADF Device Lifetime Using Intermolecular Analysis

Seran Kim, Dongsun Yoo, Gyubong Kim, Hoilim Kim, Hyosup Shin, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-019]

13:20-14:50

Implementation of Inverse Design for Optical Multi-Layer Thin Films

Inho Lee, Changdae Kim, Kyoungjae Ju, Gunhee Jun, and Gwanho Yoon (Seoul Nat'l Univ. of Science and Tech., Korea)

[P1-020]

13:20-14:50

Numerical Approach for Sound Quality Prediction of the Large-Sized OLED Panel Speaker

Hyundo Shin, Hyun Sung Park, Yudeok Seo, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-021]

13:20-14:50

Display Uniformity Risk Region Detection based on M.L

Kim yongbin, Choi hyunyoung, Yang gunwoo, Park haeryeong, and Kim yongjo (Samsung Display Co., Ltd., Korea)

[P1-022]

13:20-14:50

Triboelectric Discharging Problems in QD-OLED Manufacturing and Solutions Using Electromagnetic Analysis

Hyun Sung Park, Hyeoseok Na, Hyeondo Park, Sooyoung Park, Hyundo Shin, Yudeok Seo, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-023]

13:20-14:50

The Solution for Imbalanced Image Data Using Synthetic and Composite Images

Jung Sukbin (Samsung Display Co., Ltd., Korea)

[P1-024]

13:20-14:50

Degradation Analysis for Organic Light Emitting Diodes by TCAD Simulation and by Equivalent Circuit based on Impedance Spectroscopy

Kyungbok Choi, Sunyung Oh, Bowoon Kim, Richard James, Hyung Uk Cho, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-025]

13:20-14:50

Smart Design of Display Materials through Automated Machine Learning and Optimization with Genetic Algorithms

H. Shaun Kwak, Anand Chandrasekaran, Hadi Abroshan, Christopher T. Brown, and Mathew D. Halls (Schrödinger Inc., USA)

[P1-026]

13:20-14:50

Organic Radical Emitters: Impact of Morphology on the Nature of Excitons and Luminescence Efficiencies

Hadi Abroshan, Paul Winget, H. Shaun Kwak, Christopher T. Brown, and Mathew D. Halls (Schrödinger Inc., USA)

[P1-027]

13:20-14:50

Machine Sound Source Separation via Deep Convolutional Recurrent U-Net

Jungwon Ryu, Hankyeol Lee, Euiyeol Oh, Changgone Kim, and Yongmin Ha (LG Display Co., Ltd., Korea)

[P1-028]

13:20-14:50

Real-Time UDC Image Restoration Technology based on Synthetic Dataset

Jewon Yoo, Jaebum Cho, Daewook Kim, Hyunjoo Hwang, Sujin Choi, Dhohun Lee, Hyung Uk Cho, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-029]

13:20-14:50

Machine Learning-Based Layout Design Automation System in the Outside Circuit of the Panel

Joo-Sung Choi, Kwang Cheon Kim, Ilho Kim, Seok Woo Lee, Yong Min Ha, Soo Young Yoon, and Kiseok Chang (LG Display Co., Ltd., Korea)

[P1-030]

13:20-14:50

Angle Insensitive Metasurface Color Filters Designed by Deep Neural Network and Genetic Algorithm

Ki Won Jeong (Kyungpook Nat'l Univ., Korea), Donghwa Lee (Daegu Univ., Korea), and Yun Seon Do (Kyungpook Nat'l Univ., Korea)

[P1-031]

13:20-14:50

Backplane Design Generation Using Variational Transformer Networks

Keuk Jin Jeong, Jihoon Yang, Wongyun Kim, Min Kang, Yongwoo Lee, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-032]

13:20-14:50

Prediction Methodology for High-Performance OLED Devices based on Simulation-Assisted AI

Hyung Uk Cho, Ja Hoon Koo, Richard James, Bowoon Kim, Sun-Gyu Jung, Kyungbok Choi, Jintaek Cho, Junyoung Lee, Syunyoung Oh, Seungin Baek, Yongjo Kim, and Changhee Lee (Samsung Display Co., Ltd., Korea)

[P1-033]

13:20-14:50

Characterizing Optical Properties of Color Filters based on Reflectance and Transmittance Spectrum

Yunha Ryu, Jungmin Choi, Reayoung Kim, Younho Han, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-034]

13:20-14:50

Prediction of Optical Properties of QD-OLED Display Using Simplified Simulation Method

Sangyun Lim, Reayoung Kim, Younho Han, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-035]

13:20-14:50

Management System of Equipment Using Abnormal Detection AI Model

Gwon Gimin and Ham Youngmo (Samsung Display Co., Ltd., Korea)

[P1-038]

13:20-14:50

Numerical Calculation of the Ground-State Absorption Wavelength Shifts of CdSe/ZnSe/ZnS Quantum Dots under the Applied External Electric Field

Deokho Jang and Jungho Kim (Kyung Hee Univ., Korea)

[P1-039]

13:20-14:50

Low Grayscale Luminance Uniformity Prediction Using Transfer Learning

Seokhyun Yoon, Misuk Kim, Nayeon Hwang, Soyeong Park, Myeonghwa Kim, Jung-Suk Bae, Jeehun Seo, Dooyoul Lee, Jung-Tae Kang, and Jeong-il Yoo (Samsung Display Co., Ltd., Korea)

[P1-040]

13:20-14:50

Fire and Smoke Detection on Real Time CCTV Using Object Detection

Young Seoung Kim, Mun Jin Kim, and Jae Won Kim (Samsung Display Co., Ltd., Korea)

[P1-041]

13:20-14:50

Brain Inspired Optoelectronic Synaptic Transistor Using Polyimide and Indium-Gallium-Zinc Oxide Co-Sputtered Layer

Jong Hyuk Ahn, Min Seong Kim, Jong Bin An, Kunho Moon, Sujin Jung, and Hyun Jae Kim (Yonsei Univ., Korea)

[P1-042]

13:20-14:50

Simulation & AI Based Material Design System for OLED Applications: From OLED Devices to Materials

Hoilim Kim, Dongsun Yoo, Seran Kim, Eunkyung Koh, Hyunguk Cho, Sohae Kim, Youngmi Cho, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-043]

13:20-14:50

Unsupervised Domain Adaptation Method Using Simulation Data Set for OLED Manufacturing

Hyemin Lee, Yunyoung Kyung, Youngtae Kim, and Jaewon Kim (Samsung Display Co., Ltd., Korea)

[P1-044]

13:20-14:50

Highly Conductive Liquid Metal Thin-Film Using Evaporation

Seungseok Han and Jung-Yong Lee (KAIST, Korea)

[P1-045]

13:20-14:50

The Impact of Stretchable α -IGZO TFT Performance under Uni-Axial and Bi-Axial Mechanical Stress

Won-Bum Lee and Jin-Seong Park (Hanyang Univ., Korea)

[P1-046]

13:20-14:50

Scalable Fabrication of Stretchable and Transparent AgNWs-PDMS Touch Sensor

Soojeong Song, Jeong Dae Ha, Hyoju Shin, Nayoon Kim, and Kyung-In Jang (DGIST, Korea)

[P1-047]

13:20-14:50

Highly Stable, Deformable and Addressable Full Color MXene OLED Display: Toward Free-Form Transparent Electronic Systems

So Yeong Jeong (KAIST, Korea), Yonghee Lee (NNFC, Korea), and Kyung Cheol Choi (KAIST, Korea)

[P1-048]

13:20-14:50

Stretch-Aware Luminance Compensation for Stretchable Displays

Sung-Hoon Jung, Jung-Hyun Kim, and Suk-Ju Kang (Sogang Univ., Korea)

[P1-049]

13:20-14:50

Stretchable Organic Light-Emitting Diode Utilizing an Empty Area

Hagseon Kim and Kyung Cheol Choi (KAIST, Korea)

[P1-050]

13:20-14:50

Studies on Hump Phenomena Induced by Long-Term Mechanical Stress of Stretchable Top Gate InGaZnO Thin-Film Transistors on Wavy-Form Elastomer Substrates

Min Young Kim, Hyeong Wook Kim, and Bo Sung Kim (Korea Univ., Korea)

[P1-051]

13:20-14:50

Direct Writing of Elastic Conductors for Stretchable Displays

Byeongmoon Lee, Hyunjoon Cho, Youngpyo Ko, Heesuk Kim, and Seungjun Chung (KIST, Korea)

[P1-052]

13:20-14:50

Effect of Silane Acrylate on the Surface Properties, Adhesive Performance, and Rheological Behavior of Acrylic Pressure Sensitive Adhesives for Flexible Displays

Jun Hyeong Park, Sangkug Lee, and Ho Jun Song (KITECH, Korea)

[P1-053]

13:20-14:50

Glass-Fabric Reinforced Auxetic Substrate Platform for Omni-Directionally Stretchable Devices

Yung Lee, Junho Jang, Hyunhwan Lee, Seungwan Kim, Byung Jo Um, and Byeong-Soo Bae (KAIST, Korea)

[P1-054]

13:20-14:50

Optical Crosstalk Effect depending on Pixel Structures in High-Resolution Full-Color Organic Light-Emitting Diode Displays

Soobin Sim, Jinha Ryu (Sookmyung Women's Univ., Korea), Dae Hyun Ahn, Hyunsu Cho, Chan-mo Kang, Jin-Wook Shin, Chul Woong Joo, Gi Heon Kim, Chun-Won Byun, Nam Sung Cho (ETRI, Korea), Hyoc Min Youn, Young Jae An, Jin Sun Kim (Dongjin Semichem Co., Ltd., Korea), and Hyunkoo Lee (Sookmyung Women's Univ., Korea)

[P1-055]

13:20-14:50

Modulation of Vacancy-Ordered Double Perovskite Cs_2SnI_6 for Air-Stable Thin-Film Transistors

Ao Liu, Huihui Zhu, Youjin Reo (POSTECH, Korea), Hye Yong Chu, Jun Hyung Lim, Hyung-Jun Kim (Samsung Display Co., Ltd., Korea), and Yong-Young Noh (POSTECH, Korea)

[P1-056]

13:20-14:50

High-Performance Hysteresis-Free Perovskite Transistors through Anion Engineering

Huihui Zhu, Ao Liu, Youjin Reo (POSTECH, Korea), Hye Yong Chu, Jun Hyung Lim, Hyung-Jun Kim (Samsung Display Co., Ltd., Korea), and Yong-Young Noh (POSTECH, Korea)

[P1-057]

13:20-14:50

Impact of HfO_2 Reactant Gas on Electrical Characteristics of TFT

Kang-Min Lee (KITECH, Korea), Byeong-Kwon Ju (Korea Univ., Korea), and Sung-Hwan Choi (KITECH, Korea)

[P1-058]

13:20-14:50

Broadband Phototransistor based on n(IGTO)/p(SnSe) Heterojunction

Heesung Han, Minjae Kim, Seonwoong Bang, Taewoong Moon, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-059]

13:20-14:50

New Organic Salt p-Dopant for Sn-Based Halide Perovskite Thin Film Transistors

Ji-Young Go (POSTECH, Korea), Wenwu Li (Fudan Univ., China), and Yong-Young Noh (POSTECH, Korea)

[P1-060]

13:20-14:50

Interpretation of Channel Width-Dependent Shift in Device Characteristics of Oxide Semiconductor Thin-Film Transistors

Kihwan Kim, Su Hyun Kim, Mingoo Kim (Hanyang Univ., Korea), Joon Seok Park, Jun Hyung Lim (Samsung Display Co., Ltd., Korea), and Saeroonter Oh (Hanyang Univ., Korea)

[P1-061]

13:20-14:50

High-Performance Indium Gallium Oxide Thin-Film Transistor with Co-Sputtering

Sang Won Chung, Bang Ju Park, Gwang Bok Kim, Jeong A Lee, and Jae Kyeong Jeong
(Hangyang Univ., Korea)

[P1-062]

13:20-14:50

Enhancement in Electron Mobility through Band-Gap Engineering in Atomic-Layer-Deposited In-Ga-Zn-O Stacks

Jae Hoon Cho, Heung Jo Lee, Jeong Eun Oh, Ye Byeol An, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-063]

13:20-14:50

Control Oxygen and Hydrogen to Improve Defects and Reliability in α -IGZO Thin-Film Transistor

Kanghyun Kim (Samsung Display Co., Ltd., Korea), Min Jung Kim, Sea In Ban, Ki Seok Heo, Sang Hyeok Kim (Korea Univ., Korea), Dong Yeon Cho, Ran Kim, Soo Im Jeong, Young-Gil Park, Na Ri Ahn (Samsung Display Co., Ltd., Korea), and Jae Woo Lee (Korea Univ., Korea)

[P1-064]

13:20-14:50

Flexible Active-Matrix Devices based on Sol-Gel-Based Metal-Oxide Dielectrics and Semiconductors by O₂ Annealing

Sang-Joon Park and Tae-Jun Ha (Kwangwoon Univ., Korea)

[P1-065]

13:20-14:50

Wafer-Scale Optical Memory Array with Light Intensity-Dependent Multi-Memory States

Seongjae Kim, Juhyung Seo, Taehyun Park, and Hocheon Yoo (Gachon Univ., Korea)

[P1-066]

13:20-14:50

Pre-State-Dependent Ternary/Binary Logic Operation Obtained by Ink-Jet Printed SWCNT/InO Heterojunction Transistors

Somi Kim (Gachon Univ., Korea), Seoyeon Jung, Bongjun Kim (Sookmyung Women's Univ., Korea), and Hocheon Yoo (Gachon Univ., Korea)

[P1-067]	13:20-14:50
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Gate/Light Co-Tunable Negative Differential Resistance Behaviors from Small-Molecules Heterostructure

Yunchae Jeon, Seongjae Kim, and Hocheon Yoo (Gachon Univ., Korea)

[P1-069]	13:20-14:50
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Effects of Thermal Recovery of Off-Bias Stressed LTPS TFTs

Youngrok Kim and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P1-070]	13:20-14:50
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Analysis of LTPS TFT Defect Reduction via High Pressure Steam Annealing

Jongmin Yoo and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P1-071]	13:20-14:50
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Effects of Active Layer Thickness on the Electrical Characteristics of IGTO TFTs

Hayoung Kim, Jidong Jin, and Jaekyun Kim (Hanyang Univ., Korea)

[P1-072]	13:20-14:50
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Subthreshold Swing Engineering in α -IGZO TFT by Manipulating Oxygen Partial Pressure during RF-Magnetron Sputtering

Minsik Kong, Jimin Kang, and Soo-Yeon Lee (Seoul Nat'l Univ., Korea)

[P1-073]	13:20-14:50
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Stability Test of ITZO TFTs by RGB Illumination

Zhenyuan Xiao, Jidong Jin, Jeongho Lee, and Jaekyun Kim (Hanyang Univ., Korea)

[P1-074]	13:20-14:50
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Design of Thermally Induced Wrinkle Structure for Stretchable Display

Jeongeun Oh, Do Hyun Kim, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-075]	13:20-14:50
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Enhancement of Electrical Performance and Bias Stability for ITZO TFTs

Jidong Jin and Jaekyun Kim (Hanyang Univ., Korea)

[P1-076]

13:20-14:50

PMOS Inverters based on Inkjet Printed Carbon Nanotubes

Juhee Park, Hyung Woo Choi (Sookmyung Women's Univ., Korea), Chen Jiang (Tsinghua Univ., China), and Bongjun Kim (Sookmyung Women's Univ., Korea)

[P1-077]

13:20-14:50

Shift of Middle Logic Voltages in Ternary Inverter Circuits

Seoyeon Jung, Hyung Woo Choi (Sookmyung Women's Univ., Korea), Chen Jiang (Tsinghua Univ., China), and Bongjun Kim (Sookmyung Women's Univ., Korea)

[P1-078]

13:20-14:50

A New Approach to Compensate Threshold Voltage Variation in the Current-Driving Display Using a Ferroelectric TFT

Taewon Jin, Cheol Jun Kim, Tae Hyeon Noh, Sun Xinkai (Hanyang Univ., Korea), Jae-Hoon Han (KIST, Korea), Sanghyeon Kim (KAIST, Korea), and Younghyun Kim (Hanyang Univ., Korea)

[P1-079]

13:20-14:50

Device Simulation Reflecting Hydrogen/Oxygen Diffusion for Oxide Semiconductor Thin Film Transistor

Kihwan Kim, Myungbo Sim, Byung Taek Son, Seunghyun Jang, Tae Young Choi, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-080]

13:20-14:50

Light Illumination Effect on α -IGZO Thin-Film Transistor with SU-8 Gate Insulator

Chan Min Jeong, Jong Mo Lee, Eun Seong Yu, Seo Jin Kang, Hyuck Su Lee, Seoung Gyun Kim, Min Seong Kim, and Byung Seong Bae (Hoseo Univ., Korea)

[P1-081]

13:20-14:50

Bias Stability of α -IGZO Thin-Film Transistor Using SU-8 Gate Insulator

Min Seong Kim, Eun Seong Yu, Chan Min Jeong, Seo Jin Kang, Hyuck Soo Lee, Seoung Gyun Kim, Jong Mo Lee, and Byung Seong Bae (Hoseo Univ., Korea)

[P1-082]

13:20-14:50

High-Performance Solution-Processed WSe₂ Transistors by Molecular Doping

Taoyu Zou and Yong-Young Noh (POSTECH, Korea)

[P1-083]

13:20-14:50

Analysis on Contact Resistance in n-Type Organic Field-Effect Transistors

Hyeona Jo and Jeongkyun Roh (Pusan Nat'l Univ., Korea)

[P1-084]

13:20-14:50

Ultralow Contact Resistance ($\sim 10^{-6} \Omega \cdot \text{cm}^2$) between α -IGZO and Metal for Sub- μm Thin-Film Transistors

Hyuk Park, Juyoung Yun, Seongmin Park, Taewon Seo, and Yoonyoung Chung (POSTECH, Korea)

[P1-085]

13:20-14:50

Development of High-Performance 2D/3D Hybrid Tin Perovskite Transistors with Fluorinated Bulky Organic Cation

Wonryeol Yang and Yong-Young Noh (POSTECH, Korea)

[P1-086]

13:20-14:50

Enhancement on Three-Dimensional Formamidinium(FA) Based Tin Perovskite Transistors by Cation Substitution

Geonwoong Park and Yong-Young Noh (POSTECH, Korea)

[P1-087]

13:20-14:50

Low-Temperature Processable and Photo-Crosslinkable Polyimide Gate Dielectrics for Flexible Thin Film Transistors

Taek Ahn (Kyungsung Univ., Korea)

[P1-088]

13:20-14:50

Perfluorocyclobutane Containing Crosslinked Polyimide Gate Dielectric for Hysteresis Free Thin Film Transistor

Taek Ahn (Kyungsung Univ., Korea)

[P1-089]	13:20-14:50
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Photoresponse Characteristics of Thin-Film Transistors based on 6,13-Bis(Triisopropylsilyl)ethynyl)Pentacene: Polystyrene Blend

Hyunji Shin (Inha Univ., Korea), Jaehoon Park (Hallym Univ., Korea), and Dae Yu Kim (Inha Univ., Korea)

[P1-090]	13:20-14:50
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Abnormal Increase of Aged Off-State Current in P-Type LTPS TFT by Excessive Bias Stress

Seunghyun Jang, Kihwan Kim, Yongsoo Lee, Tae Young Choi, Seungin Baek, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P1-091]	13:20-14:50
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Effects of Hydrogen Incorporation on Electrical Performance in Top Gate Coplanar InGaZnO Thin-Film Transistors by Thermal Annealing

Hyeong Wook Kim (Korea Univ., Korea), Hyunjae Jung (ASML Korea, Korea), and Bo Sung Kim (Korea Univ., Korea)

[P1-092]	13:20-14:50
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High-K Polysilsesquioxane and Dielectric Nature in Organic Field-Effect Transistors and Logic Devices

Tae Kyu An and Yong Jin Jeong (Korea Nat'l Univ. of Transportation, Korea)

[P1-093]	13:20-14:50
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High Performance Oxide Thin-Film Transistors on the Polyethylene Naphthalate Substrate with Catalytic Layer

Yoonji Choi (KETI, Korea), Gwangbok Kim (Hanyang Univ., Korea), Yeji Kim (KETI, Korea), Jae Kyeong Jeong (Hanyang Univ., Korea), and Byungwook Yoo (KETI, Korea)

[P1-094]	13:20-14:50
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Enhanced Electrical Performance and Stability of In-Ga-Sn-O Thin-Film Transistors with Al₂O₃ Grown by Dual-Atomic Layer Deposition

Changyong Oh, Hyunjae Jang, and Bo Sung Kim (Korea Univ., Korea)

[P1-095]

13:20-14:50

Increase in On-State Current of Polymer Electrolyte-Gated Transistors by Blending a PEDOT:Tos Composite with an Insulating Polymer

Jaehee So, Donguk Kim, Taemin Kim, Jaehwan Shin, Dongyeol Seo, Songhee Oh, and Felix Sunjoo Kim (Chung-Ang Univ., Korea)

[P1-096]

13:20-14:50

355 nm Nanosecond UV Laser Annealing of Amorphous In-Ga-ZnO Thin Film Transistor

Sang Yeon Park, Dong Hyun Lee, Younggon Choi, Dong Woon Lee, Hojun Kim, Sang Jik Kwon, Hocheon Yoo, Daeho Lee, Yongmin Jeon, and Eou-Sik Cho (Gachon Univ., Korea)

[P1-097]

13:20-14:50

Photomultiplication Type Organic Phototransistors for Reduction of the Dark Current

Sanghoon Park, Dongho Choi, Haechang Lee (KAIST, Korea), Hanul Moon (Dong-A Univ., Korea), and Seunghyup Yoo (KAIST, Korea)

[P1-098]

13:20-14:50

Electrical Stability for Positive Gate Bias Stress of α -InGaZnO TFFs with Al_2O_3 Grown by O_3 -Thermal Atomic Layer Deposition as a Protection Layer

So Hee Park, Hyeong Wook Kim, and Bo Sung Kim (Korea Univ., Korea)

[P1-099]

13:20-14:50

Asymmetric Source/Drain Organic Phototransistors with Contact-Limited Operation

Dongho Choi, Haechang Lee, Sanghoon Park (KAIST, Korea), Hanul Moon (Dong-A Univ., Korea), and Seunghyup Yoo (KAIST, Korea)

[P1-100]

13:20-14:50

Ultrathin Dielectric Interlayer to Enhance the Contact between Oxide Semiconductor and Metal for High-Resolution Display

Juyoung Yun, Hyuk Park, and Yoonyoung Chung (POSTECH, Korea)

[P1-101]

13:20-14:50

Photo-Patternable High-K Polymer Gate Dielectrics for High Performance Oxide Transistors

Seong Cheol Jang, Hyun-Suk Kim, Gunoh Lee, and Kyung Jin Lee (Chungnam Nat'l Univ., Korea)

[P1-102]

13:20-14:50

Improvement of Electrical Performance of Te/TeO Thin Film Transistors Using Sputtering at Room Temperature

Seung Min Lee, Seong Cheol Jang, and Hyun-Suk Kim (Chungnam Nat'l Univ., Korea)

[P1-103]

13:20-14:50

The Omnidirectional Sound Characteristics of OLED Panel Speaker

Jang-Un Kwon and Jeong Man Lee (LG Display Co., Ltd., Korea)

[P1-104]

13:20-14:50

An AMOLED Flicker Measurement Method

Dajeong Lee, Sunyoung Park, Sanghyun Choi, Kyeongyeol Heo, Chelsoon Heo, Beomzi Kim, Kyuseok Kim, and Youngnam Youn (Samsung Display Co., Ltd., Korea)

[P1-105]

13:20-14:50

Luminance and Chromaticity Difference as a Function of f_1' of XYZ Tristimulus Colorimeters on OLED Display

Hyong Min Hahm (Incheon Nat'l Univ., Korea)

[P1-106]

13:20-14:50

Study on Micro Image Quality by Designing Dimming Zones

Hyunah Suh, Han Byul Lim, Young-Jun Seo, Yongwoo Yi, and Jaejoong Kwon (Samsung Display Co., Ltd., Korea)

[P1-107]

13:20-14:50

Image Quality Enhancement based on Multi Light Source Estimation

Ji Heon Lee and Young Kyu Hong (KETI, Korea)

[P1-108]

13:20-14:50

Wide Luminance Range Measurement Imaging Colorimeter

Hyun Seock Oh, Chang Hun Lim, Seung Jin Lee, Mu Ju Kim, Ho Chul Lee, Kwon Moo Ryu, and Hee Dong Sung (ANI Co., Ltd., Korea)

[P1-109]

13:20-14:50

Effect of Brightness on Display Flicker at a Low Frequency: Experimental Methods Comparison for Flicker Perception

Minkyung Kim, Youra Kim, Hyungsuk Hwang, Eunjung Lee, Jaejoong Kwon, and Hyosun Kim (Samsung Display Co., Ltd., Korea)

[P1-110]

13:20-14:50

Effect of Age and Brightness on Display Flicker at a Low Frequency

Youra Kim, Hyungsuk Hwang, Eunjung Lee, Dong-Yeol Yeom, Jaejoong Kwon, and Hyosun Kim (Samsung Display Co., Ltd., Korea)

[P1-111]

13:20-14:50

Viewing Angle Enhancement of Holographic Display Using Multi-Illumination and Binary Mask

Youngjin Jo, Dongheon Yoo, Minkwan Kim, and Byoungho Lee (Seoul Nat'l Univ., Korea)

[P1-112]

13:20-14:50

Three-Dimensional Display System for an Integral Imaging Microscope Using a Deep Neural Network and Augmented Reality

Shariar Md Imtiaz, Anar Khuderchuluun, Munkh-Uchral Erdenebat, Ki-Chul Kwon, Md. Biddut Hossain (Chungbuk Nat'l Univ., Korea), Hoonjong Kang (Wonkwang Univ., Korea), Jong-Rae Jeong (Suwon Science College, Korea), and Nam Kim (Chungbuk Nat'l Univ., Korea)

[P1-113]

13:20-14:50

Response Time Evaluation of Large Aerial Image Interface by 3D Motion Capture and AIRR

Mayu Adachi, Kosuke Inoue, Masaki Yasugi, Nao Ninomiya, Shiro Suyama, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P1-114]

13:20-14:50

Android Application for Remote Patient Monitoring based on AR and IoT Sensors

Rupali Shinde, Nyamsuren Darkhanbaatar, Erkhembatar Dashdavaa, Hui-Ying Wu, Chang-Won Shin (Chungbuk Nat'l Univ., Korea), Sang-Keun Gil (Suwon Univ., Korea), and Seok-Hee Jeon (Incheon Nat'l Univ., Korea), and Nam Kim (Chungbuk Nat'l Univ., Korea)

[P1-115]

13:20-14:50

Blur Width in Pop-Up Arc 3D Image Is Reduced With Observation Distance

Hiroto Oishi, Yuki Sato, Masaki Yasugi, Shiro Suyama, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P1-116]

13:20-14:50

Aerial Display That Can Be Observed From 360 Degrees Around by AIRR Using a Conical Beam Splitter

Kenta Watanabe, Daiki Kudo, Masaki Yasugi, Shiro Suyama, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P1-118]

13:20-14:50

Fast Computer-Generated Hologram Synthesis Using a Frequency Domain Information

Siwoo Lee, Dongheon Yoo, Juhyun Lee, Seung-Woo Nam, and Byoungcho Lee (Seoul Nat'l Univ., Korea)

[P1-119]

13:20-14:50

Evaluation of Depth Perception Characteristics in Plane Fog Screen

Masaki Umemoto, Haruki Mizushima, Shiro Suyama, and Kenji Yamamoto (Tokushima Univ., Japan)

[P1-120]

13:20-14:50

Appropriate Position of Sensing Device for Detecting the User Movement in Manipulating Aerial Display

Takahiro Omoto, Kengo Fujii, Masaki Yasugi, Shiro Suyama, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P1-121]

13:20-14:50

Floating Spatial-Blending Faces for Gazing Communication by Using Aerial Display

Keigo Sato, Masaki Yasugi, Shiro Suyama, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P1-122]

13:20-14:50

Relationship between Cone Shape and Perceived Image in Cone-Shaped arc 3D Display

Akua Kawakami, Haruki Mizushima (Tokushima Univ., Japan), Shiro Suyama (Utsunomiya Univ., Japan), and Kenji Yamamoto (Tokushima Univ., Japan)

[P1-123]

13:20-14:50

Effects of Motion Parallax and Shooting Distance for Reducing Cardboard Effect in Stereo Images

Kosuke Takahashi, Haruki Mizushima (Tokushima Univ., Japan), Shiro Suyama, and Kenji Yamamoto (Tokushima Univ., Japan)

[P1-124]

13:20-14:50

Optical Light Control Patterns for the Immersive and Seamless VR Application

Bokwang Song, Kwang Soo Bae, Minjong Oh, Gun Hee Kim, Sang Hwan Cho, and Sung-Chang Jo (Samsung Display Co., Ltd., Korea)

[P1-125]

13:20-14:50

A Study on the Relation between Camera Aperture and Measured Optical Characteristics in the Near Eye Display System

Jin Seo, Hayoung Lee, Aree Song, Ojun Kwon, Eunjung Lee, and Jaejoong Kwon (Samsung Display Co., Ltd., Korea)

[P1-126]

13:20-14:50

Interpupillary Distance Measurement Method with an Eye Tracker in a VR Headset

Yu-Seong Joung, Jeong-Sik Kim, and Seung-Woo Lee (Kyung Hee Univ., Korea)

[P1-127]

13:20-14:50

Spatial or Angular Resolution Enhancement Scheme by Virtual Moving Operation of Switchable Lens Array in Autostereoscopic Super-Multi-View Three-Dimensional Display

Jung-Yeop Shin, Tae-Hyun Lee, Jae-Won Lee, Jun-Kai Wang (Kyungpook Nat'l Univ., Korea), Min-Kyu Park, Kyung-Il Joo (KOPTI, Korea), Yang-Su Kim, Gwang-Soon Lee (ETRI, Korea), Hyeon-Taek Lee, Hee-Jin Choi (Sejong Univ., Korea), and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

[P1-128]

13:20-14:50

Dual-Depth Augmented Reality Head-Up Display based on Scheimpflug Principle

Beomsoo Kim, Daerak Heo, Seongju Lee, and Joonku Hahn (Kyungpook Nat'l Univ., Korea)

[P1-129]

13:20-14:50

Size Compensation of Aerial Images Using Head Tracking in Aerial Display with a Uniaxial Retroreflective Mirror Array

Shoma Yada, Kakeru Miyazaki (Hosei Univ., Japan), Yasushi Onishi (OPTCERAMICS, Japan), and Takafumi Koike (Hosei Univ., Japan)

[P1-130]

13:20-14:50

Waveguide-Based Binocular Maxwellian Near-Eye Display Using a Single Microdisplay and Polarization Grating

Myeong-Ho Choi and Jae-Hyeung Park (Inha Univ., Korea)

[P1-131]

13:20-14:50

Hinge Development Trend of Foldable Device, Product Review

Insun Hwang (AUFLEX, Korea) and Yeoung Jin Chang (Gachon Univ., Korea)

[P1-132]

13:20-14:50

Novel Pixel Design for Low Reflectance of Polarizer-Free OLED

Min Oh Choi, Kwang Soo Bae, Minjong Oh, Dae Young Lee, Gun Hee Kim, Sang Hwan Cho, and Sung-Chang Jo (Samsung Display Co., Ltd., Korea)

[P1-133]

13:20-14:50

Novel AMOLED Pixel Circuit Compensating for Variations in Sub-Threshold Swing and Threshold Voltage of α -IGZO Thin-Film Transistors

Hyunwoo Kim, Yongchan Kim, and Hojin Lee (Soongsil Univ., Korea)

[P1-134]

13:20-14:50

Phase Shift Enhancement of Substrate Integrated Waveguide Phase Shifter Using Liquid Crystal

Hyunji Shin, Jinyoung Choi, Junseok Ma, and Wooksung Kim (POSTECH, Korea)

[P1-135]

13:20-14:50

Improved Optical Transmittance Control of Dye-Doped Liquid Crystals Using Polarization-Independent Molecular Rotation

Jaewook Lee, Seungmin Nam, and Su Seok Choi (POSTECH, Korea)

[P1-136]

13:20-14:50

Study of Circular Polarization Change in Chiral Liquid Crystal Elastomer Under Uniaxial Stretching

Chaehyun Kwon, Seungmin Nam, and Su Seok Choi (POSTECH, Korea)

[P1-137]

13:20-14:50

Fast Switching of Vertically-Aligned Liquid Crystal Smart Window for Privacy Application

Chan-Hee Han and Seung-Won Oh (Kangwon Nat'l Univ., Korea)

[P1-138]

13:20-14:50

Visual Indicator for Toxic Chemicals Using Refractive Index Responsive Chiral Photonic Liquid Crystal Films

Avinash Kumar Rella, Subhangi Subedi, Suhyun Kim, Vineet Kumar, and Shin-Woong Kang (Jeonbuk Nat'l Univ., Korea)

[P1-139]

13:20-14:50

A Smart Window based on Uniform Lying Helix Liquid Crystal for Energy Saving

Chan-Heon An and Seung-Won Oh (Kangwon Nat'l Univ., Korea)

[P1-140]

13:20-14:50

Flexible OLED Light Extraction Using MLA Patterned PDLC Substrate

Seong-Min Lim (Hanbat Nat'l Univ., Korea), Akpeko Gasonoo (Univ. of Calgary, Canada), Hyeon-Sik Ahn, Min-Sang Kim, Na-Kyung Lee, Ji-Hyeon Kwon, and Yoon-Seuk Choi (Hanbat Nat'l Univ., Korea)

[P1-141]

13:20-14:50

Molecular Engineering of Liquid Crystal Elastomers Comprising Dynamic Covalent Thiourea Bonds for Muscle-Like Actuators

Jin-Hyeong Lee (Pusan Nat'l Univ., Korea), Dong-Gyun Kim (KRICT, Korea), and Suk-kyun Ahn (Pusan Nat'l Univ., Korea)

[P1-142]

13:20-14:50

Efficiency Enhancement of Organic Light Emitting Diode by Blending Quantum Dots to Mesogenic Luminophores

Kyeong-Kyu Min, Min-Young Park, Jae-Hoon Kim, and Chang-Jae Yu (Hanyang Univ., Korea)

[P1-143]

13:20-14:50

Fabrication of Color Glass with High Light Transmittance by Pearlescent Pigments and Optical Adhesive

Hyeon-Sik Ahn (Hanbat Nat'l Univ., Korea), Akpeko Gasonoo (Univ. of Calgary., Canada), Seong-Min Lim, Jae-Hyun Lee, and Yoonseuk Choi (Hanbat Nat'l Univ., Korea)

[P1-144]

13:20-14:50

A Study on Circularly Polarized Emission from Mesogenic Luminophore via Thermal Annealing Process

So-Young Sim, Chan-Woo Jung, Jae-Hoon Kim, and Chang-Jae Yu (Hanyang Univ., Korea)

[P1-145]

13:20-14:50

Reprogrammable and Reprocessable Liquid Crystal Elastomers with Photocontrolled Motions

Jaehee Bae, Jin-Hyeong Lee (Pusan Nat'l Univ., Korea), Dong-Gyun Kim (KRICT, Korea), and Suk-kyun Ahn (Pusan Nat'l Univ., Korea)

[P1-146]

13:20-14:50

Liquid Crystal Elastomers with Slidable Crosslinks for Mechanical Damping

Subi Choi (Pusan Nat'l Univ., Korea), Ji-hun Seo (Korea Univ., Korea), Suk-kyun Ahn (Pusan Nat'l Univ., Korea)

[P1-147]

13:20-14:50

Determination of Liquid Crystal Topological Charge in Various Patterned Electrodes

Jae Sun Kim, Jae Hoon Lee, Jun-Yong Lee, Jeong-Seon Yu, and Jong-Hyun Kim (Chungnam Nat'l Univ., Korea)

[P1-148]

13:20-14:50

Optically Isotropic Liquid Crystal-Polymer Composite with Poly (Hexyl Methacrylate) for Slippery Interface

Eun Ji Kim, Minu Ju, Tae Hyung Kim, Min Su Kim, and Seung Hee Lee (Jeonbuk Nat'l Univ., Korea)

[P1-149]

13:20-14:50

Carbon Nanotube-Doped Normally Transparent Polymer Networked Liquid Crystal Light Shutter for Enhanced Electro-Optic Performance

Minji Kang, Hyun Soo Jeon, Da Yeon Lee, Han Byeol Park, Young Jin Lim, Min Su Kim, and Seung Hee Lee (Jeonbuk Nat'l Univ., Korea)

[P1-150]

13:20-14:50

Direct-Ink-Writing of Dual-Responsive Liquid Crystal Elastomers

Keumbee Kim and Suk-kyun Ahn (Pusan Nat'l Univ., Korea)

[P1-151]

13:20-14:50

A Viewing Angle Controllable Liquid Crystal Cell for Automotive Display

Jae-Hwan Lee, Chan-Heon An, Gi-Ho Lee, and Seung-Won Oh (Kangwon Nat'l Univ., Korea)

[P1-152]

13:20-14:50

A Highly Transparent Optical Window Film with Improved Mechanical Properties and Folding Reliability by Intensification of Mismatched Charge Transfer Complex

Pyong Hwa Hong, Lee Yea-Jin, and Sung Woo Hong (KITECH, Korea)

[P1-153]

13:20-14:50

Trench Structured Aluminium-Doped Indium-Tin-Zinc Oxide Thin-Film Transistor with High Mobility

Do Hyung Kim, Kwang-Heum Lee, and Sang-Hee Ko Park (KAIST, Korea)

[P1-154]

13:20-14:50

Light Stress Test of Flexible and Transparent Carbon Nanotube Thin-Film Transistors for Daylight Application

Hyunjun Yoo, Jewook Ha, and Yongtaek Hong (Seoul Nat'l Univ., Korea)

[P1-156]

13:20-14:50

High Bias Stability and High-Performance α -ITZO TFTs Enabled by Patternable Passivation Process

Yuhao Shi, Yu-Shien Shiah, Kihyung Sim, Junghwan Kim, and Hideo Hosono (Tokyo Inst. of Tech., Japan)

[P1-157]

13:20-14:50

Low Voltage Operating Organic Nanowire Field-Effect Transistors with High-k Oxide Gate Dielectrics Layers

Keon Joo Park, Chae Won Kim, Seongbeom Kim, Sam Nyung Yi, Hyung Soo Ahn, Kyoung Hwa Kim, and Young Tea Chun (Korea Maritime and Ocean Univ., Korea)

[P1-158]

13:20-14:50

Polymer Nanowire Parallel Arrays for Controlling Current of Field Effect Transistors

Chae Won Kim, Keon Joo Park, Seongbeom Kim, Sam Nyung Yi, Hyung Soo Ahn, Kyoung Hwa Kim, and Young Tea Chun (Korea Maritime and Ocean Univ., Korea)

[P1-159]

13:20-14:50

Luminance Characteristics and Visual Assessment of RGBW OLED Displays

Woojae Jung, Youngshin Kwak (UNIST, Korea), Kyung Jin Kang, and Myong Young Lee (LG Electronics Inc., Korea)

[P1-160]

13:20-14:50

Effect of Surround Condition on Display Contrast Sensitivity

Soonhyeng An and Youngshin Kwak (UNIST, Korea)

[P1-161]

13:20-14:50

Brightness Compensation of Outpainted Image for Stretchable Display

Ji-Hyun Kim and Suk-Ju Kang (Sogang Univ., Korea)

[P1-162]

13:20-14:50

Electrically Tunable Liquid Crystal Lens based on Phosphate Colloid

P. A. N. S. Priyadharshana, Ju-Young Park, Seung-Ho Hong, and Jang-Kun Song (Sungkyunkwan Univ., Korea)