

# IMiD 2023

The 23rd International Meeting on Information Display  
August 22-25, 2023 / BEXCO, BUSAN, KOREA

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<b>Session Title:</b>	01. Oxide TFT I
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	09:00-10:20
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Chuan Liu (Sun Yat-Sen Univ., China)

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[A01-1] [Invited] 09:00-09:25

**Recent Development of Functional Devices Using Amorphous Gallium Oxide Semiconductor**

Keisuke Ide, Hideo Hosono, and Toshio Kamiya (Tokyo Inst. of Tech., Japan)

[A01-2] 09:25-09:40

**Sub 50 nm Channel Length Oxide Semiconductor Thin-Film Transistor with Self-Aligned Nanogap Patterning**

Chihun Sung, Jeho Na, Sooji Nam, and Sung Haeng Cho (ETRI, Korea)

[A01-3] 09:40-09:55

**Search of Optimal Deposition Conditions and Regression Model of  $\alpha$ -In-Ga-Zn-O by Machine Learning**

Atsushi Shimizu, Keisuke Ide, Takayoshi Katase, Hidenori Hiramatsu, Hideo Hosono, and Toshio Kamiya (Tokyo Inst. of Tech., Japan)

[A01-4] [Invited] 09:55-10:20

**Laser Annealing-Boosted Mobility of Fluorinated InZnO Thin-Film Transistors**

Chen Hua, Xiao Li, and Lei Lu (Peking Univ., China)

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<b>Session Title:</b>	<b>02. High-Quality Display Driving</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>09:00-10:15</b>
<b>Session Room:</b>	<b>Room B (214~215)</b>
<b>Session Chair(s):</b>	<b>Dr. Hwarim Im (Sungkyunkwan Univ., Korea) Prof. Hyongsik Nam (Kyung Hee Univ., Korea)</b>

[B02-1] [Invited]

09:00-09:25

**Operation Method of Changing Data Rate for High-Speed Signal Transmission on Display System**

Chien-Hao Li, Jen-Chieh Hu, Syang-Yun Tzeng, Chu-Ya Hsiao, Yen-Chung Lin, and Wei-Da Guo (Novatek Microelectronics Corp., Taiwan)

[B02-2] [Invited]

09:25-09:50

**Low Power Technologies for Mobile and Wearable Displays**

Seung-Woo Lee, Jae-Hee Jo, Jeong-Sik Kim, and Won-Been Jeong (Kyung Hee Univ., Korea)

[B02-3] [Invited]

09:50-10:15

**A New Single X-Wire Active Matrix Mini-LED Backlight for Large Size High Image-Quality LCD TVs**

Hansai Ji, Wanming Wu (Chinese Academy of Sciences, China), Youngjin Lim, Chenghui Yan (Xianxin Tech., China), and Di Geng (Chinese Academy of Sciences, China)

# iMID 2023

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<b>Session Title:</b>	<b>03. Light-Emitting Materials and Application I</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>09:00-10:20</b>
<b>Session Room:</b>	<b>Room C (216)</b>
<b>Session Chair(s):</b>	<b>Dr. Gang Yeol Yoo (KETI, Korea) Dr. Juan Qiao (Tsinghua Univ., China)</b>

[C03-1] [Invited] 09:00-09:25

## Full Color GaN for Micro-LED Applications

Liyang Zhang, Kai Liu, Weihua Liu, Hao Xu, Jianya Liao, and Kai Cheng (Enkris Semiconductor Inc., China)

[C03-2] [Invited] 09:25-09:50

## Chipscale RGB InGaN Microdisplays Using Strain-Relaxed Nanosphere-Defined Nanopillars

H.W. Choi, B. Lu, and W.Y. Fu (Univ. of Hong Kong, Hong Kong)

[C03-3] 09:50-10:05

## Efficient Narrow Blue Emission of Nano Perovskite $\text{CsCaCl}_3\text{:Eu}^{2+}$ Synthesized by a Water-Assisted Solid-State Reaction Method

Kenji Toda, Suzuka Hasegawa, Yusuke Abe (Niigata Univ., Japan), and Dae-ho Yoon (Sungkyunkwan Univ., Korea)

[C03-4] 10:05-10:20

## Highly Stable and Luminescent Perovskite Nanocrystals-Siloxane Hybrids Enabling Reliable Color-Converted Organic Light-Emitting Diodes

Yongmin Shin (KAIST, Korea), Byoung-Hwa Kwon (ETRI, Korea), Junho Jang, and Byeong-Soo Bae (KAIST, Korea)

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<b>Session Title:</b>	<b>04. OLED Materials I</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>09:00-10:35</b>
<b>Session Room:</b>	<b>Room D (217~218)</b>
<b>Session Chair(s):</b>	<b>Prof. Yafei Wang (Changzhou Univ., China) Dr. Jae-Min Kim (Sungkyunkwan Univ., Korea)</b>

**[D04-1] [Featured Invited] 09:00-09:30**

**Beyond Visible Boundaries: Efficient True-Blue and Near Infrared Phosphors**

Yun Chi (City Univ. of Hong Kong, Hong Kong)

**[D04-2] [Invited] 09:30-09:55**

**Molecular Dipole Orientation of Hole Transporting and Emissive Materials for Highly Efficient OLEDs**

Heui-Dong Lee (LG Display Co., Ltd., Korea), Ho Jin Jang (Sungkyunkwan Univ., Korea), Ji Ho Baek, Kwon-Shik Park, Hyun Chul Choi, SooYoung Yoon (LG Display Co., Ltd., Korea), Jae-Min Kim, and Jun Yeob Lee (Sungkyunkwan Univ., Korea)

**[D04-3] [Invited] 09:55-10:20**

**High-Efficiency Organic Light-Emitting Materials with Narrowband Emission**

Futong Liu and Ping Lu (Jilin Univ., China)

**[D04-4] 10:20-10:35**

**Highly Stable and Efficient Deep Blue Phosphorescent Organic Light-Emitting Diodes Based on Tetradentate Pt(II) Complexes with Bulky Fused Cycloalkyl Unit**

Kiun Cheong, Unhyeok Jo (Sungkyunkwan Univ., Korea), Wan Pyo Hong (Gachon Univ., Korea), and Jun Yeob Lee (Sungkyunkwan Univ., Korea)

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<b>Session Title:</b>	05. InGaN Red Micro-LEDs
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	09:00-10:35
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Dr. Gi-Dong Sa (KOPTI, Korea) Prof. Inhwan Lee (Korea Univ., Korea)

[E05-1] [Featured Invited] 09:00-09:30

## InGaN-Based Red Micro-LEDs via Strain-Controlled Epitaxy

Kazuhiro Ohkawa (KAUST, Saudi Arabia)

[E05-2] 09:30-09:45

## Submicron Narrow-Band Phosphors for MicroLED Displays

James Murphy, Derrick Brewer, Sam Camardello, Daniel DePuccio, Kathleen Maleski, James Presley, Anant Setlur, Oltea Siclovan, Paul Smigelski, Justin Welch, and Aharon Yakimov (GE Research, USA)

[E05-3] [Invited] 09:45-10:10

## Freestanding Nanomembranes for Future Electronics

Sang-Hoon Bae (Washington Univ., USA)

[E05-4] [Invited] 10:10-10:35

## InGaN-Based Red Emitters Fabricated on Lattice-Matched ScAlMgO<sub>4</sub> Substrates

Mitsuru Funato, Yoshinobu Matsuda, and Yoichi Kawakami (Kyoto Univ., Japan)

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<b>Session Title:</b>	<b>06. Soft Sensors and Actuators for Interactive Display I</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>09:00-10:35</b>
<b>Session Room:</b>	<b>Room F (313)</b>
<b>Session Chair(s):</b>	<b>Prof. Tae-il Kim (Sungkyunkwan Univ., Korea) Prof. Unyong Jeong (POSTECH, Korea)</b>

**[F06-1] [Featured Invited]** 09:00-09:30

**Liquid Metals for Soft Sensors and Actuators**

Michael D. Dickey (NC State Univ., USA)

**[F06-2] [Invited]** 09:30-09:55

**From Electronic Skins and Triboelectric Nanogenerators to Autonomous Wearables and Soft Robots**

Ying-Chih Lai (Nat'l Chung Hsing Univ., Taiwan)

**[F06-3] [Invited]** 09:55-10:20

**Ultrasound Transducers for Sensing and Actuating on Plate**

Epimitheas Georgitzikis, Pieter Gijsenbergh, Christopher Chare, Dominika Wysocka, Jeremy Segers, John Viaene, Robert Ukropec, Chloe Halbach, Florian De Roose, Raf Appeltans, Pawel E. Malinowski, Veronique Rochus, Xavier Rottenberg, Paul Heremans, Erwin Hijzen, and David Cheyns (IMEC, Belgium)

**[F06-4]** 10:20-10:35

**Sound-Visual Integration and Sound Improvement Using Film Exciter in OLED Panel**

Dae-Su Kim, YongWoo Lee, SooYoun Kim, HwaYeol Lee, UiHyeon Jeong, Kwon-Shik Park, and JounHo Lee (LG Display Co., Ltd., Korea)

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<b>Session Title:</b>	07. Printing Technology
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	09:00-10:30
<b>Session Room:</b>	Room G (314~315)
<b>Session Chair(s):</b>	Dr. Myung Soo Huh (Samsung Display Co., Ltd., Korea) Prof. Byung Doo Chin (Dankook Univ., Korea)

[G07-1] [Invited] 09:00-09:25

Toward a Facile OLED/QD Inkjet Printing with an Optimization of Solution Formulation and Wetting Phenomena

Yoon-Jeong Choi, Song Hee Kang, and Byung Doo Chin (Dankook Univ., Korea)

[G07-2] [Invited] 09:25-09:50

Ink-Jetted Droplet Monitoring Using Ultra-Short Pulsed Strobe Lights for Display Applications

Dong-Youn Shin (Pukyong Nat'l Univ., Korea)

[G07-3] [Invited] 09:50-10:15

High-Resolution Reverse-Offset Printing-Based Patterning of Thin Films for Metal Oxide TFTs

Asko Sneek, Fei Liu, Kim Eiroma, Henri Ailas, Olli Halonen, Ari Alastalo, and Jaakko Leppaniemi (VTT Tech. Research Centre of Finland, Ltd., Finland)

[G07-4] 10:15-10:30

Vacuum Drying Process for Fabrication of Uniform Films for High-Performance Inkjet-Printed OLEDs

Youngwook Noh, Jun Young Hwang, Sang Youn Lee, and Kwan Hyun Cho (KITECH, Korea)

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<b>Session Title:</b>	<b>08. Flexible Electronic Systems</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>09:00-09:55</b>
<b>Session Room:</b>	<b>Room H (316~317)</b>
<b>Session Chair(s):</b>	<b>Prof. Hyunkoo Lee (Sookmyung Women's Univ., Korea) Prof. Jeongkyun Roh (Pusan Nat'l Univ., Korea)</b>

[H08-1] [Invited] 09:00-09:25

## Large Scale Integration of Stretchable Oxide TFTs

Himchan Oh, Ji-Young Oh, Chan Woo Park, Jae-Eun Pi, Jong-Heon Yang, and Chi-Sun Hwang (ETRI, Korea)

[H08-2] 09:25-09:40

## Enhancing Hydrogen Barrier Performance of Flexible Organic-Inorganic Hybrid Films via Oxygen Plasma Treatment of Atomic/Molecular Layer Deposited Alucone

Gi-Beom Park, Tae-yeon Kim, GeonHo Baek, and Jin-Seong Park (Hanyang Univ., Korea)

[H08-3] 09:40-09:55

## Sensors to Complex Structural Surfaces with Reduced Graphene Oxide and Poly (Diallyldimethylammonium Chloride) (PDADMAC) Complex

Hanyung Jung (Korea Polytechnics, Korea) and Hyunkoo Lee (Sookmyung Women's Univ., Korea)



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<b>Session Title:</b>	09. Oxide TFT II
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	10:50-12:10
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Keisuke Ide (Tokyo Inst. of Tech., Japan) Dr. Chihun Sung (ETRI, Korea)

[A09-1] [Invited] 10:50-11:15

## Recent Research of Oxide TFTs for High Performance Display

Won-Sang Ryu, Chan-Yong Jeong, Jiyong Noh, Kwon-Shik Park, and SooYoung Yoon (LG Display Co., Ltd., Korea)

[A09-2] 11:15-11:30

## Mobility Analysis for Polycrystalline and Amorphous Oxide Semiconductors Using Seto Model Combined with In-Grain Scattering Factors

Keisuke Ide, Tasuke Kadono, Shimizu Atsushi (Tokyo Inst. of Tech., Japan), Koji Yamaguchi, Emi Kawashima, Yuki Tsuruma (Idemitsu Kosan Co., Ltd., Japan), Takayoshi Katase (Tokyo Inst. of Tech., Japan), Hidenori Hiramatsu (Idemitsu Kosan Co., Ltd., Japan), Hideo Hosono, and Toshio Kamiya (Tokyo Inst. of Tech., Japan)

[A09-3] 11:30-11:45

## Achieving Highly Reliable, High Mobility Spinel Single Phase IZTO Thin-Film Transistors at a Low Temperature of 300°C

Gwang-Bok Kim, Sangwon Chung, Byoungwoo Kim, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[A09-4] [Invited] 11:45-12:10

## Stable ITO Based TFTs and Pixel Circuit

Jiawei Zhang (Shandong Univ., China), Josh Wilson (The Univ. of Manchester, UK), and Aimin Song (Shandong Univ., China)

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<b>Session Title:</b>	10. Innovative TFT Circuits
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	10:50-12:25
<b>Session Room:</b>	Room B (214~215)
<b>Session Chair(s):</b>	Prof. Jong-Seok Kim (Hanyang Univ., Korea) Dr. Hong Jae Shin (LG Display Co., Ltd., Korea)

[B10-1] [Invited] 10:50-11:15

## Understanding Display Driving Non-Idealities through Inter-Hierarchy Simulation

Xiaojun Guo and Wei Tang (Shanghai Jiao Tong Univ., China)

[B10-2] 11:15-11:30

## Memory Integrated Scan Driver Circuit for Selective Driving

Won-Been Jeong (Kyung Hee Univ., Korea), Hoon-Ju Chung (Kumoh Nat'l Inst. of Tech., Korea),  
and Seung-Woo Lee (Kyung Hee Univ., Korea)

[B10-3] 11:30-11:45

## 7T2C Oxide-TFT AMOLED Pixel Circuit to Improve the Influence of Capacitor Variation

Sara Hong, Eun Kyo Jung, Eunho Kim, Hwarim Im (Sungkyunkwan Univ., Korea), Kook Chul Moon (Gachon Univ., Korea), and Yong-Sang Kim (Sungkyunkwan Univ., Korea)

[B10-4] 11:45-12:00

## $\alpha$ -InGaZnO TFT Scan Driver for Extra Period Function with Compensating Depletion-Mode

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

[B10-5] [Invited] 12:00-12:25

## LTPO TFTs Integrated Pixel Circuits for AM MicroLED Displays

Congwei Liao, Yunfei Liu, Que Shan, and Shengdong Zhang (Peking Univ., China)

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<b>Session Title:</b>	<b>11. Light-Emitting Materials and Application II</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>10:50-12:05</b>
<b>Session Room:</b>	<b>Room C (216)</b>
<b>Session Chair(s):</b>	<b>Prof. Kenji Toda (Niigata Univ., Japan)</b>

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**[C11-1] [Invited]** 10:50-11:15

## **Synergetic Interface Engineering on Flexible Perovskite LEDs**

Yanqing Li (East China Normal Univ., China), Yang Shen, and Jianxin Tang (Soochow Univ., China)

**[C11-2] [Invited]** 11:15-11:40

## **Interplay between Intramolecular and Intermolecular Charge Transfer for High-Efficiency Near-Infrared Organic Light-emitting Materials**

Jingyi Xu, Yu Dai, and Juan Qiao (Tsinghua Univ., China)

**[C11-3] [Invited]** 11:40-12:05

## **Materials Design and Synthesis for Efficient Hole Transporting Layer Utilizing Strongly Correlated Oxides**

Kimoon Lee (Kunsan Nat'l Univ., Korea)

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<b>Session Title:</b>	12. OLED Devices I
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	10:50-12:45
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Dr. Heui-Dong Lee (LG Display Co., Ltd., Korea) Prof. Ping Lu (Jilin Univ., China)

[D12-1] [Invited] 10:50-11:15

Highly Efficient Solution Processable Organic Light-Emitting Diodes via Both TADF and “Hot Excitons” Channels

Songkun Zeng, Chen Xiao, Peng Fan, and Yafei Wang (Changzhou Univ., China)

[D12-2] 11:15-11:30

Critical Molecular Parameters for Material Stability and Device Lifetime of Blue Organic Emitters Employing Thermally Activated Delayed Fluorescence

Qing-yu Meng and Juan Qiao (Tsinghua Univ., China)

[D12-3] [Invited] 11:30-11:55

Pure Delayed Fluorescence Organic Light-Emitting Diodes Featuring Low Driving Voltage and High Efficiency

Feng-Ming Xie (Soochow Univ., China), Yanqing Li (East China Normal Univ., China), and Jianxin Tang (Soochow Univ., China)

[D12-4] [Invited] 11:55-12:20

Efficient and Stable Hole Injection into Organic Light-Emitting Diodes by Controlling Charged States of Acceptor Molecules

Hirohiko Fukagawa, Taku Oono, Takuya Okada, Tsubasa Sasaki, and Takahisa Shimizu (NHK Science and Tech. Research Laboratories, Japan)

[D12-5] [Invited] 12:20-12:45

Idemitsu Advanced Materials Korea Company Overview and Activities in Korea

Yoshiaki Izawa (Idemitsu Kosan, Japan)

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<b>Session Title:</b>	<b>13. High Resolution Micro-LED Display</b>
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	10:50-12:35
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Dr. Ja-Yeon Kim (KOPTI, Korea) Dr. Yong-Ho Ra (Jeonbuk Nat'l Univ., Korea)

[E13-1] [Featured Invited] 10:50-11:20

**Full-Color LEDs on One Chip as A Key Technology to Realize Small, Ultrahigh-Definition Micro-LED Displays**

Yasufumi Fujiwara (Osaka Univ., Japan)

[E13-2] [Invited] 11:20-11:45

**Ultra-Small Size InGaN Micro-LEDs for AR Display Applications**

Luming Yu, Zhibiao Hao, Yi Luo, and Lai Wang (Tsinghua Univ., China)

[E13-3] [Invited] 11:45-12:10

**Vertical Stack R/G/B Micro-LED Architecture Fabricated by Unconventional Epitaxy**

Young Joon Hong (Sejong Univ., Korea)

[E13-4] [Invited] 12:10-12:35

**Heteroepitaxy of InGaN-Based RGB LEDs on Si for Micro-LED Display**

Qian Sun (Chinese Academy of Sciences, China)

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<b>Session Title:</b>	<b>14. Soft Sensors and Actuators for Interactive Display II</b>
<b>Session Date:</b>	August 23 (Wed.), 2023
<b>Session Time:</b>	10:50-12:25
<b>Session Room:</b>	Room F (313)
<b>Session Chair(s):</b>	Prof. Hyunhyub Ko (UNIST, Korea) Prof. Sunghoon Lee (The Univ. of Tokyo, Japan)

[F14-1] [Featured Invited] 10:50-11:20

Soft Wearable Electronic Devices for Visuo-Haptics Applications

Doowon Park and Unyong Jeong (POSTECH, Korea)

[F14-2] [Invited] 11:20-11:45

Skin Electronics for Healthcare Monitoring and Mixed Reality

Xinge Yu (City Univ. of Hong Kong, China)

[F14-3] [Invited] 11:45-12:10

Mechanochromic Photonic Crystals for Colorimetric Strain Sensing

Hwan-Young Lee and Shin-Hyun Kim (KAIST, Korea)

[F14-4] 12:10-12:25

Uniform Switching Control of Electrically Stretchable Structural Color

Jun Hyuk Shin, Seungmin Nam, Sang Hyun Han, Ji Yoon Park, Chaehyun Kwon, and Su Seok Choi (POSTECH, Korea)

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<b>Session Title:</b>	<b>15. TFT Manufacturing</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>10:50-12:15</b>
<b>Session Room:</b>	<b>Room G (314~315)</b>
<b>Session Chair(s):</b>	<b>Prof. Jeong Hyun Kwon (Sunmoon Univ., Korea)</b>

[G15-1] [Invited] 10:50-11:15

**Processes and Circuit Designs for Co-Fabricated Enhancement and Depletion IGZO Thin Film Transistors**

Norbert Fruehauf, Yannick Schellander, Hanghang Li, and Florian Kleber (Univ. of Stuttgart, Germany)

[G15-2] 11:15-11:30

**Enhanced Electrical Characteristics and Stability of IGZO Using LWD Passivation Layer Deposited by EHD Jet Printing**

Young Wook Kim, Min Seong Kim, Jong Hyuk Ahn, Sujin Lee, and Hyun Jae Kim (Yonsei Univ., Korea)

[G15-3] 11:30-11:45

**High Performance  $\text{In}_2\text{O}_3$  Thin Film Transistor on Polyimide Substrate via Atmospheric Pressure Spatial ALD**

Kwang Su Yoo, Chi-Hoon Lee, Dong-Gyu Kim, and Jin-Seong Park (Hanyang Univ., Korea)

[G15-4] 11:45-12:00

**Indium-Gallium-Zinc Oxide Thin-Film Transistor with High Subthreshold Slope by Gradual UV Treatment for Driving Transistor**

Sujin Lee, Jusung Chung, Hyung Tae Kim, Jae Seong Han, and Hyun Jae Kim (Yonsei Univ., Korea)

[G15-5] 12:00-12:15

**Effect of UV/Ozone Treatment on Threshold Voltage Modulation in Sol-Gel Indium-Gallium-Zinc Oxide (IGZO) Thin-Film Transistors**

Wonsik Kim (Ajou Univ., Korea), Won-June Lee, Taehyun Kwak (GIST, Korea), Seokhyeon Baek (Ajou Univ., Korea), Seung-Hoon Lee (KRICT, Korea), and Sungjun Park (Ajou Univ., Korea)

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<b>Session Title:</b>	<b>16. Freeform Display</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>10:50-12:10</b>
<b>Session Room:</b>	<b>Room H (316~317)</b>
<b>Session Chair(s):</b>	<b>Prof. Jung hwa Seo (Univ. of Seoul, Korea) Dr. Taewoong Kim (Samsung Display Co., Ltd., Korea)</b>

[H16-1] [Invited] 10:50-11:15

## Soft Skin-Integrated Sensors and Displays

Naoji Matsuhisa, Tokihiko Shimura, and Taizo Tominaga (The Univ. of Tokyo, Japan)

[H16-2] 11:15-11:30

## Mechanical Metamaterial-Based Strain-Programmable Elastomer Substrate for Image-Distortion-Free Stretchable Displays

Jun-Chan Choi, Hoon Yeub Jeong, Jae-Hong Sun (KIST, Korea), Seunghyun Lee (Seoul Nat'l Univ., Korea), and Seungjun Chung (KIST, Korea)

[H16-3] 11:30-11:45

## Fabric-Based Bottom Emission Organic Light Emitting Device for Wearable Photomedicine Using Ultra-Thin Adhesive Planarization Method

Youjin Cho, Youngwoo Kim, Dongwoon Lee, Yeji Shin, Eousik Cho, Sangjik Kwon, and Yongmin Jeon (Gachon Univ., Korea)

[H16-4] [Invited] 11:45-12:10

## The Use of Shape Memory Polymers for Micro-LED Transfer

Seok Kim (POSTECH, Korea)



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<b>Session Title:</b>	17. Oxide TFT III
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	09:00-10:20
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Hyunseong Kum (Yonsei Univ., Korea) Dr. Jae Hoon Jung (APS Research, Korea)

[A17-1] [Invited] 09:00-09:25

Field-Effect Emission or Field-Effect Detection Enabled by Oxide Transistor Hybrid Integration

Chuan Liu (Sun Yat-sen Univ., China)

[A17-2] 09:25-09:40

Vertical Oxide Channel Thin-Film Transistors for High Density OLED Pixel Array

Jong-Heon Yang, Yong-Hae Kim, Jae-Eun Pi, Hee-Ok Kim, Chan-mo Kang, Hyunsu Cho, Kang Me Lee, Jaehyun Moon, Seung-Youl Kang (ETRI, Korea), Nak-Jin Seong, Young Ha Kwon, Kyu-Jeong Choi (NCD Co., Ltd., Korea), and Chi-Sun Hwang (ETRI, Korea)

[A17-3] 09:40-09:55

Performance Analysis of Indium-Tin-Zinc-Oxide-Based 2T0C DRAM with Low Leakage Current for Improved Retention Time

Seong Ui An, Yo Seop Chi, Taewon Jin (Hanyang Univ., Korea), Dae-Hwan Ahn, Jae-hoon Han (KIST, Korea), and Younghyun Kim (Hanyang Univ., Korea)

[A17-4] [Invited] 09:55-10:20

High-Mobility Thin-Film Transistors with Polycrystalline  $\text{In}_2\text{O}_3:\text{H}$  Channel Deposited by Pulsed Laser Deposition under High-Base Pressure

Yusaku Magari and Hiromichi Ohta (Hokkaido Univ., Japan)

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<b>Session Title:</b>	<b>18. Advanced Display Systems</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>09:00-10:20</b>
<b>Session Room:</b>	<b>Room B (214~215)</b>
<b>Session Chair(s):</b>	<b>Prof. Hojin Lee (Soongsil Univ., Korea)</b>

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[B18-1] [Invited] 09:00-09:25

**Improving Durability and Reliability of Foldable Displays Using XAI-Enabled Physical Property Measurement and Analysis**

Kyongtae Park, Hansol Kang (Samsung Display Co., Ltd., Korea)

[B18-2] 09:25-09:40

**LTPO-Based Micro Light-Emitting Diode Pixel Circuit Using Stepwise Control Signal**

Hwarim Im, Eun Kyo Jung, and Yong-Sang Kim (Sungkyunkwan Univ., Korea)

[B18-3] 09:40-09:55

**Local Dimming Algorithm for High Quality Head Up Displays in Automotive Vehicles: A Low Complexity Approach**

Ji Hoon Kim, Yun Jang Pyun (Kyung Hee Univ., Korea), Jae Ho Oh, Ki Hyuk Song, Yoo Na Kim, Jeong Ho Cho, Myung Rae Lee, Chan Young Yoon, Young Hoon Han (Hyundai Mobis Co., Ltd., Korea), and Hyongsik Nam (Kyung Hee Univ., Korea)

[B18-4] [Invited] 09:55-10:20

**Captioning-Based Extensive Painting for Image Completion**

Seong-Hun Jeong and Kyeongbo Kong (Pukyong Nat'l Univ., Korea)

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<b>Session Title:</b>	19. Young Leaders Conference I
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	09:00-10:30
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Prof. Jeong-Hwan Lee (Inha Univ., Korea)

[C19-1] 09:00-09:15

## Droplet Level Monitoring of Aerosol Jet Printing to Enable Printed Display Elements

Joseph Andrews (Univ. of Wisconsin-Madison, USA)

[C19-2] 09:15-09:30

## Why do the on-Silicon Displays Require Small-Area Driving Circuits?

Jong-Seok Kim (Hanyang Univ., Korea)

[C19-3] 09:30-09:45

## Development of a 2D Diffractive Liquid Crystal Smart Window with Single-Sided Patterned Electrode Substrat

Jae-Won Huh and Hong Yoon (Corning Tech. Center Korea, Korea)

[C19-4] 09:45-10:00

## Skin-Integrated Stretchable Haptic Displays

Beomhee Park, Jun Hee Lee, Jaeman Lim, Sun Hong Kim, and Yei Hwan Jung (Hanyang Univ., Korea)

[C19-5] 10:00-10:15

## High-Resolution Organic Light-Emitting Diode Microdisplays and Improving Color Gamut Using Quantum Dots

Sukyung Choi, Hyunsu Cho, Chan-Mo Kang, Jin-Wook Shin, Byoung-Hwa Kwon, Chul Woong Joo, Kukjoo Kim, Dae Hyun Ahn, Joo Yeon Kim, Nam Sung Cho, and Chun-Won Byun (ETRI, Korea)

[C19-6] [Kim Yong-Bae Award-Grand Prize] 10:15-10:30

## Charge-Interactive Surface of Quantum Dots in Electroluminescent Devices

Hyeonjun Lee (KAIST, Korea), Yong Woo Kwon (Sungkyunkwan Univ, Korea), Hyunjin Cho (KAIST, Korea), Byeong Guk Jeong (Pusan Nat'l Univ., Korea), Jaehoon Lim (Sungkyunkwan Univ, Korea), and Doh C. Lee (KAIST, Korea)

# IMiD 2023

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<b>Session Title:</b>	20. OLED Materials II
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	09:00-10:30
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Prof. Wan Pyo Hong (Gacheon Univ., Korea) Dr. Jeong Won Kim (KRISS, Korea)

[D20-1] [Invited] 09:00-09:25

TADF Sensitized Fluorescent (TSF) OLEDs with Improved Stability

Lian Duan (Tsinghua Univ., China)

[D20-2] 09:25-09:40

Thermally Activated Delayed Fluorescent Emitter with  $\pi$ -Extended Boron-Type Acceptor for Blue Organic Light-Emitting Diodes

Jeong-Yeol Yoo, Seung Wan Kang, Chil Won Lee, and Byung Doo Chin (Dankook Univ., Korea)

[D20-3] [Invited] 09:40-10:05

Boron-Based TADF Material for High-Performance Blue Organic LightEmitting Diodes with Narrow Emission

Hanrui Su, Yaxiong Wang, and Lei Wang (Huazhong Univ. of Science and Tech., China)

[D20-4] [Invited] 10:05-10:30

Highly Efficient and Stable Deep-Blue Organic Light-Emitting Diode Using Phosphor-Sensitised Thermally Activated Delayed Fluorescence

Eungdo Kim, Junha Park, Mieun Jun, Hyosup Shin, Jangyeol Baek, Taeil Kim, Seran Kim, Jiyoung Lee, Heechoon Ahn, Jinwon Sun, Soo-Byung Ko, Seok-Hwan Hwang, Changwoong Chu, and Sunghan Kim (Samsung Display Co., Ltd., Korea)

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<b>Session Title:</b>	21. Manufacturing Application III
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	09:00-10:25
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Prof. Young Joon Hong (Sejong Univ., Korea) Prof. Sang Hyeon Kim (KAIST, Korea)

[E21-1] [Featured Invited] 09:00-09:30

## Opportunities and Challenges of MicroLED Display Technology

Ying-Tsang Liu and Yun-Li (Charles) Li (PlayNitride Inc., Taiwan)

[E21-2] 09:30-09:45

## Femtosecond Pulsed Laser-Induced Forward Transfer of Micro-LED Chips

Seunghwoi Han, Jaeseung Lim (Chonnam Nat'l Univ., Korea), Sumin Kang, Seongheum Han, Ah-Young Park, Jae-Hak Lee, Jun-Yeob Song, and Seungman Kim (KIMM, Korea)

[E21-3] 09:45-10:00

## Selective and Mass MicroLED Transfer

Hossein Zamani, Ehsan Fathi, and Reza Chaji (VueReal Inc., Canada)

[E21-4] [Invited] 10:00-10:25

## High-Resolution Optical Inspection and Characterization of Nanorod LEDs-Based Display

Quang Trung Le, Byeong-U Bak, Youngwook Shin, Jun Seok Hwang, and Jaekyun Kim (Hanyang Univ., Korea)

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<b>Session Title:</b>	22. Soft Sensors and Actuators for Interactive Display III
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	09:00-10:35
<b>Session Room:</b>	Room F (313)
<b>Session Chair(s):</b>	Prof. Ki Jun Yu (Yonsei Univ., Korea)

[F22-1] [Invited] 09:00-09:25

Ultrasoft Nanomesh Sensors for on-Skin Applications

Sunghoon Lee (The Univ. of Tokyo, Japan)

[F22-2] 09:25-09:40

An Artificial Sensory Neuron System based on Ionic-Gated Synaptic Transistors with Suspended Porous Ion Gel

Yun Goo Ro, Dahun Lim, Cheolhong Park, Youngoh Lee, Youngsu Lee, Jae June Kim, and Hyunhyub Ko (UNIST, Korea)

[F22-3] 09:40-09:55

Two-Dimensional Arrays of Surface-Swelling Actuator for Shape Displays

Moon-Young Choi (Chungnam Nat'l Univ., Korea), Se-Um Kim (Seoul Nat'l Univ., Korea), Hogyong Kim, Kitae Kim, and Jun-Hee Na (Chungnam Nat'l Univ., Korea)

[F22-4] 09:55-10:10

Wearable Touch Sensor Using Transparent Dielectric Film Made by Cu@TiO<sub>2</sub> Nanowire/Poly(Dimethylsiloxane) Composite

Nguyen-Hung Tran and Ji-Hoon Lee (Jeonbuk Nat'l Univ., Korea)

[F22-5] [Invited] 10:10-10:35

Organic Neuromorphic Electronics for Computing, Robotics, Bioelectronics, and Displays

Tae-Woo Lee (Seoul Nat'l Univ., Korea)

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<b>Session Title:</b>	23. Advanced Manufacturing I
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	09:00-10:25
<b>Session Room:</b>	Room G (314~315)
<b>Session Chair(s):</b>	Dr. Seong Jun Lee (Samsung Display Co., Ltd., Korea) Dr. KwanHyun Cho (KITECH, Korea)

[G23-1] [Invited] 09:00-09:25

## Manufacturing Equipment Technology for Advanced Devices

Junya Kiyota, Ryoya Kitazawa, Tatsunori Isobe, and Masaki Takei (ULVAC Inc., Japan)

[G23-2] 09:25-09:40

## Copper Thin Film Dry Etching Equipment via ECR Plasma Source

Jin Nyoung Jang, Jong Hwa Lee, Jae Hoon Jung, Kiro Jung (APS Holdings Corp., Korea), Sangheon Lee, Donghoon Kim, Mun-Pyo Hong (Korea Univ., Korea), Sang-Gab Kim (Samsung Display Co., Ltd., Korea), Soo Ouk Jang (KFE, Korea), and Chiwoo Kim (APS Holdings Corp., Korea)

[G23-3] 09:40-09:55

## Dual Step FMM Evaporation Technology for the 10,000ppi RGB Micro-OLED

Changhun Chriss Hwang, Sung Su Kim, Myunghee Kim, and Hag-won Lee (OLEDON, Dankook Univ., Korea)

[G23-4] 09:55-10:10

## Self-Trapped Exciton Effect in Laser-Glass Interaction for High Precision Processes

Kisang Lee, Hyungsik Kim (Samsung Display Co., Ltd., Korea), Juil Hwang, Kwanggeol Lee (Hanyang Univ., Korea), Woohyun Jung, Mishchik Konstantin, Jekil Ryu, Seongho Jung, and Cheollae Roh (Samsung Display Co., Ltd., Korea)

[G23-5] 10:10-10:25

## Micro LED Transfer System Technology based on Ultra Short Pulse Laser

Seungman Kim, Seongheum Han (KIMM, Korea), Seunghwoi Han (Chonnam Nat'l Univ., Korea), Jae Seung Lim, Sumin Kang, Jae-Hak Lee, Ah-Young Park, Jun-Yeob Song (KIMM, Korea), Geunsik Ahn, Moosup Shim, Daehyeon Kim (PROTEC, Korea), and Ji-Won Park (JB Lab Corp., Korea)

# iMiD 2023

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<b>Session Title:</b>	24. Applied Vision/Human Factors II
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	09:00-10:20
<b>Session Room:</b>	Room H (316~317)
<b>Session Chair(s):</b>	Prof. Youngshin Kwak (UNIST, Korea) Dr. Jang Jin Yoo (LG Display Co., Ltd., Korea)

[H24-1] [Invited] 09:00-09:25

## VR/AR Device and the User with the Bad Eyesight

Hyunki Hong (Seoul Nat'l Univ. of Science and Tech., Korea)

[H24-2] [Invited] 09:25-09:50

## Requirements of See-Through Quality for Transparent Displays

Hyeok-Jun Kwon, Sang-Bin Lee, Min-Chul Byun, Sung-Jin Kim, Kyongho Lim, Dong-Woo Kang, WoongGi Jun, and SooYoung Yoon (LG Display Co., Ltd., Korea)

[H24-3] 09:50-10:05

## White Point in the Virtual Reality Display

Seonyoung Yoon and Youngshin Kwak (UNIST, Korea)

[H24-4] 10:05-10:20

## Melanopsin Input to Pupillary Light Reflex and Brightness Perception

Nianfang Zhu, Yan Tu, Lili Wang, Xiaoyang Zhu, and Yunyang Shi (Southeast Univ., China)



# IMiD 2023

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<b>Session Title:</b>	25. QD-Based Color Conversion Technology
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	11:00-12:30
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Moon Sung Kang (Sogang Univ., Korea) Prof. Seong-Yong Cho (Hanyang Univ., Korea)

[A25-1] [Invited] 11:00-11:25

Progress of QD Technology in Display: InP-Based Quantum Dots toward Efficient Color Conversion Pixels

Tae-Gon Kim, Nayoun Won, Taekhoon Kim, Sanghyeon Park, and Shinae Jun (Samsung Advanced Inst. of Tech., Korea)

[A25-2] [Invited] 11:25-11:50

Recent Progress in InP-Based Quantum Dots for Display Application

Takafumi Moriyama, Makoto Kido, and Hirokazu Sasaki (Shoei Chemical Inc., Japan)

[A25-3] 11:50-12:05

Color Converter based on Giant Shell Quantum Dots and Their Composites

Soeren Becker, Hendrik Schlick, and Jan S. Niehaus (Fraunhofer IAP-CAN, Germany)

[A25-4] [Invited] 12:05-12:30

Quantum Dot Colour Conversion Inks for MicroLED: The Route to a Stable and Cd-Free Solution

Kim De Nolf, Alasdair Brown, Igor Nakonechnyi, and Willem Walravens (QustomDot BV, Belgium)

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<b>Session Title:</b>	26. Solution TFT I
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	11:00-12:20
<b>Session Room:</b>	Room B (214~215)
<b>Session Chair(s):</b>	Prof. Aimin Song (Univ. of Manchester, UK) Dr. Jong-Heon Yang (ETRI, Korea)

[B26-1] [Invited] 11:00-11:25

Surface Modification of Printable Carbon Nanotube Thin-Film Transistors for Increased Functionality for Active-Matrix Sensing

Joseph Andrews (Univ. of Wisconsin-Madison, USA)

[B26-2] 11:25-11:40

Post-Treatments as Electrode Functionalization of Fully-Solution Processed Amorphous InZnO ( $\alpha$ -IZO) Thin-Film Transistors

Umu Hanifah, Juan Paolo Bermundo, Nu Myat Thazin, Hidenori Kawanishi (Nara Inst. of Science and Tech., Japan), Johannes Richter, Sebastian Geburt (INNOVAVENT GmbH, Germany), and Yukiharu Uraoka (Nara Inst. of Science and Tech., Japan)

[B26-3] 11:40-11:55

Solution Processed Alkali Metal Doped p-Type Copper Oxide Thin Film Transistors

Seokhyeon Baek, Jeongyeon Na, Wonsik Kim, Chuljin Hwang, and Sungjun Park (Ajou Univ., Korea)

[B26-4] [Invited] 11:55-12:20

Vacancy Engineering of Solution Processable Copper Iodide for High Performance p-Type Transistors

Ick-Joon Park (Joongbu Univ., Korea)

# IMI D 2023

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<b>Session Title:</b>	27. Young Leaders Conference II
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	11:00-12:15
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Prof. Sung In Cho (Dongguk Univ., Korea)

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[C27-1] 11:00-11:15

**Quantitative Determination of Trap-Assisted and Langevin Recombination in Phosphorescent Organic Light-Emitting Diodes Using Experimental Method**

Kyung Hyung Lee, Jae-Min Kim, and Jun Yeob Lee (Sungkyunkwan Univ., Korea)

[C27-2] 11:15-11:30

**3D Multi-Fold Structure OLED towards High Fill Factor Stretchable Display**

Jaehyeock Chang, Hagseon Kim, and Kyung Cheol Choi (KAIST, Korea)

[C27-3] 11:30-11:45

**Textile-Based Stretchable OLED with Kirigami Structure: Toward Attachable and Wearable Photomedicine Applications**

Yeji Shin, DongWoon Lee, Young Woo Kim, Minseong Park, Eou-Sik Cho, Sang Jik Kwon, and Yongmin Jeon (Gachon Univ., Korea)

[C27-4] 11:45-12:00

**Facile and Biocompatible Scattering Layer based on DNA for Light Extraction in Organic Light-Emitting Diodes**

Hye Jeong Yeon, Juri Kim, Yongjin Park, Dong Ki Yoon, and Kyung Cheol Choi (KAIST, Korea)

[C27-5] 12:00-12:15

**Facile Patterning of Inkjet-Printed Electrodes via Long-Term Stable Surface Treatment with ZnO Nanoparticles**

Jong Ho Park, Jinsu Yoon, Minkyun Kang, Hwaeun Park, Yiseul Kim, Hyungsoo Yoon, and Yongtaek Hong (Seoul Nat'l Univ., Korea)

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<b>Session Title:</b>	28. OLED Devices II
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	11:00-12:30
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Prof. Lei Wang (Huazhong Univ. of Science and Tech., China) Prof. Lian Duan (Tsinghua Univ., China)

[D28-1] [Invited] 11:00-11:25

**Solution-Processed OLEDs with High Efficiency and Improved Operational Stability: The Significance of Interface Control**

Thi Na Le and Min Chul Suh (Kyung Hee Univ., Korea)

[D28-2] 11:25-11:40

**Comprehensive Understanding of Spin-Flip Processes in Charge-Transfer Molecule**

Hyung Suk Kim, Sang Hoon Lee (Kyushu Univ., Japan), Seunghyup Yoo (KAIST, Korea), and Chihaya Adachi (Kyushu Univ., Japan)

[D28-3] [Invited] 11:40-12:05

**Multi-Resonant Thermally Activated Delayed Fluorescence (MR-TADF) Emitters based on Non-Boron Materials**

Soon Ok Jeon (Samsung Electronics Co., Ltd., Korea)

[D28-4] [Invited] 12:05-12:30

**Various P-Dopants and Their Applications in OLED Device Optimization**

Huiqing Pang, Menglan Xie, Jing Wang, Hualong Ding, Renjie Zheng, Zhihao Cui, Ray Kwong, and Sean Xia (Beijing Summer Sprout Tech. Co., Ltd., China)

# IMiD 2023

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<b>Session Title:</b>	29. Manufacturing Application II
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	11:00-12:10
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Prof. Jin-Seong Park (Hanyang Univ., Korea) Dr. YongHo Ra (Jeonbuk Nat'l Univ., Korea)

[E29-1] [Invited]

11:00-11:25

**Monolithic 3D Integration of High-Resolution MicroLED Pixels on CMOS Backplane and Re-Consideration of the Epitaxial Structure of LEDs**

Sanghyeon Kim, Juhyuk Park, Woojin Baek, Hyunsoo Kim (KAIST, Korea), and Daemyeong Geum (Chungbuk Nat'l Univ., Korea)

[E29-2]

11:25-11:40

**Highly Reliable Mini-LED Display Module using Simultaneous Transfer and Bonding (SITRAB) Technology**

Jiho Joo, Gwang-Mun Choi, Chanmi Lee, Jeong-Ho Shin, Yong-Sung Eom, Ki-Seok Jang, Yoon-Hwan Moon, Jin-hyuk Oh, and Kwang-Seong Choi (ETRI, Korea)

[E29-3]

11:40-11:55

**Monolithically Integrated Device of LED with Two Transistors Fabricated on the GaN LED Epi Wafer for Micro-LED Display**

Boseong Son, Huijin Kim, Young-Woong Lee, and Si-Hyun Park (Yeungnam Univ., Korea)

[E29-4]

11:55-12:10

**Comparison Study of III-Nitride-Based Blue and Red Micro-Light-Emitting Diode**

Jeong-Hwan Park, Markus Pristovsek, Wentao Cai, Heajeong Cheong (Nagoya Univ., Japan), Chang-Mo Kang (KPTI, Korea), Dong-Seon Lee (GIST, Korea), Tae-Yeon Seong (Korea Univ., Korea), and Hiroshi Amano (Nagoya Univ., Japan)

# IMI D 2023

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<b>Session Title:</b>	<b>31. [Joint Session 1] Immersive Media and Display Technology for Metaverse</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>11:00-12:40</b>
<b>Session Room:</b>	<b>Room G (314~315)</b>
<b>Session Chair(s):</b>	<b>Prof. Jae-Hyeung Park (Inha Univ., Korea) Dr. Soon-gi Park (LetinAR, Korea)</b>

**[31-1] [Invited]** 11:00-11:20

**Trends and Importance of Global Metaverse Standardization Activities**

Kyoungro Yoon (Konkuk Univ., Korea)

**[31-2] [Invited]** 11:20-11:40

**Transformation of Human Interaction by AI -Driven Future Display**

Sunghee Ahn and Hongpyo Kim (Hongik Univ., Korea)

**[31-3] [Invited]** 11:40-12:00

**Verification of MPEG Immersive Video Coding Technology for Real and Virtual 3D Scene**

Gwangsoon Lee, Jun-Young Jeong, and Hyon-Gon Choo (ETRI, Korea)

**[31-4] [Invited]** 12:00-12:20

**Perceptually Realistic 2D, 3D Holographic Displays**

Dongyeon Kim, Seung-Woo Nam, Jong-Mo Seo, ByoungHo Lee, and Yoonchan Jeong (Seoul Nat'l Univ., Korea)

**[31-5] [Invited]** 12:20-12:40

**Enhancing Methods for Reconstruction of Floating 3D Images in the Brain**

Shiro Suyama, Hirotsugu Yamamoto (Utsunomiya Univ., Japan), and Haruki Mizushima (Tokushima Univ., Japan)

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<b>Session Title:</b>	<b>32. Applied Vision/Human Factors I</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>11:00-12:35</b>
<b>Session Room:</b>	<b>Room H (316~317)</b>
<b>Session Chair(s):</b>	<b>Dr. Don Gyou Lee (Meta, Korea) Dr. Jae Joong Kwon (Samsung Display Co., Ltd., Korea)</b>

**[H32-1] [Invited] 11:00-11:25**

## **Characterization of Microdisplays Using Imaging Luminance Measurement Devices with High Magnification Lenses**

Ingo Rotscholl (TechnoTeam Bildverarbeitung GmbH, Germany), Shin Myung Choi (IS-Soft Co., Ltd., Korea), Stefan Schramm, and Udo Krüger (TechnoTeam Bildverarbeitung GmbH, Germany)

**[H32-2] [Invited] 11:25-11:50**

## **Need for Improved Metric for Measuring Aperiodic Flickering of VRR Displays**

Frank Seto, Luke Hellwig, and Dale Stoltzka (Samsung Display Co., Ltd., USA)

**[H32-3] 11:50-12:05**

## **Evaluation of Visual Fatigue and Display Performance for Gaming Monitors**

Karlheinz Blankenbach and Faraz Bhatti (Pforzheim Univ., Germany)

**[H32-4] 12:05-12:20**

## **Analyzing the Effect of Reflection Components on Perceptual Reflection Characteristics in Gaming Displays**

JungHyun Ham, SeonMee Lee, Se Ri Oh, Kyongho Lim, and Dong Woo Kang (LG Display Co., Ltd., Korea)

**[H32-5] 12:20-12:35**

## **Study on Observer Metamerism Characteristics of Wide Color Gamut Displays with Various RGB Primaries**

Junwoo Jang and JangJin Yoo (LG Display Co., Ltd., Korea)

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<b>Session Title:</b>	<b>33. QD Patterning Technology</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>16:00-17:30</b>
<b>Session Room:</b>	<b>Room A (211~213)</b>
<b>Session Chair(s):</b>	<b>Prof. Soong Ju Oh (Korea Univ., Korea) Prof. Jeongkyun Roh (Pusan Nat'l Univ., Korea)</b>

[A33-1] [Invited] 16:00-16:25

## Progress in Lighting Materials and Devices Using Quantum Dots

Armin Wedel, Yohan Kim, Jiyong Kim, and Manuel Gensler (Fraunhofer Inst. for Applied Polymer Research, Germany)

[A33-2] [Invited] 16:25-16:50

## Nondestructive Photopatterning of Quantum Dots via Ligand Crosslinking

Moon Sung Kang (Sogang Univ., Korea)

[A33-3] [Invited] 16:50-17:15

## Optically Patternable Intensely Luminescent All-Inorganic Nanocrystals

Pengwei Xiao, Zhoufan Zhang, and Yuanyuan Wang (Nanjing Univ., China)

[A33-4] 17:15-17:30

## High-Resolution Multicolor Patterning of InP Quantum Dot Films by Atomic Layer Deposition of ZnO

Joon Yup Lee (Myongji Univ., Korea) and Seong-Yong Cho (Hanyang Univ., Korea)



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<b>Session Title:</b>	<b>34. High Resolution TFT</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>16:00-17:20</b>
<b>Session Room:</b>	<b>Room B (214~215)</b>
<b>Session Chair(s):</b>	<b>Prof. Joseph Andrews (Univ. of Wisconsin-Madison, USA)</b>

**[B34-1] [Invited] 16:00-16:25**

## **Vertical Full-Color Micro-LEDs via 2D Materials-Based Layer Transfer**

Hyun S. Kum (Yonsei Univ., Korea), Jiho Shin (Massachusetts Inst. of Tech., USA), Hyunseok Kim (Yonsei Univ., Korea), Suresh Sundara (Georgia Tech-Lorraine., France), Junseok Jeong (Yonsei Univ., Korea), Kyusang Lee (Univ. of Virginia, USA), Kwanghun Chung (Massachusetts Inst. of Tech., USA), Young Joon Hong (Sejong Univ., Korea), Abdallah Ougazzaden (Massachusetts Inst. of Tech., USA), and Jeehwan Kim (Yonsei Univ., Korea)

**[B34-2] 16:25-16:40**

## **In-Situ ALD-Assisted Subthreshold Swing Control in IGZO/Al<sub>2</sub>O<sub>3</sub> Multi Channel Structured TFT**

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

**[B34-3] 16:40-16:55**

## **Low-Temperature Processed $\alpha$ -IGZO Thin Film Transistors for Thermally Controlled Flexible PET Fibers**

Jiseong Lee, Chan Young Kim, Yong Ha Hwang, Seong Uk Kong, and Kyung Cheol Choi (KAIST, Korea)

**[B34-4] [Invited] 16:55-17:20**

## **RGB Direct Patterned 3,000ppi OLED Micro-Display for AR/VR**

Jae Hoon Jung, Myong Hwan Choi, Jong Woon Moon, Sooho Nam, and Kiro Jung (APS Research Corp., Korea)

# IMI D 2023

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<b>Session Title:</b>	35. LC Applications
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	16:00-18:00
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Prof. Ji-Hoon Lee (Jeonbuk Nat'l Univ., Korea)

[C35-1] [Invited] 16:00-16:25

## Active Reconfigurable Intelligent Surface Utilizing Liquid Crystal for 5G Communication

Boyoung Kang, Hyengcheul Choi, Changhyeong Lee, Jaewon Huh, Byoungwan Kang (Corning Tech. Center Korea, Korea), Youngno Youn, and Wonbin Hong (POSTECH, Korea)

[C35-2] 16:25-16:40

## Colorimetric Detection of Various Chemicals Using Refractive Index-Adaptive Nanoporous Photonic Crystal Films

Avinash Kumar Rella, Suhyun Kim, Maibam Tarachand, Afiya Issac Kazi, Shrikant Murkute, Vineet Kumar, and Shin-Woong Kang (Jeonbuk Nat'l Univ., Korea)

[C35-3] 16:40-16:55

## High Electrical Performance in Water-Borne Fluorinated Polyimide-Gated Organic Thin-Film Transistor

Dongkyu Kim, Yujin So, Hyunjin Park, Jongmin Park, Jinsoo Kim (KRICT, Korea), Hee-Tae Jung (KAIST, Korea), Jong Chan Won, and Yun Ho Kim (KRICT, Korea)

[C35-4] 16:55-17:10

## Response Speed Improvement of Liquid Crystal Phase Shifter Using Twisted Nematic Configuration

Dowon Kim, Kitae Kim, and Jun-Hee Na (Chungnam Nat'l Univ., Korea)

[C35-5] [Invited] 17:10-17:35

## Stretchable and Tunable Photonics Properties of Chiral Liquid Crystals

Su Seok Choi (POSTECH, Korea)

[C35-6] [Invited] 17:35-18:00

## Advanced Liquid Crystal Technologies to Control Millimeter Wave Propagation Path for Next-generation Wireless Communication

Hideo Fujikake, Tomoya Haneda, Yosei Shibata, Masakazu Nakatani, and Takahiro Ishinabe (Tohoku Univ., Japan)

# IMiD 2023

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<b>Session Title:</b>	<b>36. [Joint Session II] System on Chip Technology for Display</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>16:00-17:40</b>
<b>Session Room:</b>	<b>Room D (217~218)</b>
<b>Session Chair(s):</b>	<b>Prof. Jang-Yeon Kwon (Yonsei Univ., Korea) Prof. Myung-Gil Kim (Sungkyunkwan Univ., Korea)</b>

**[D36-1] [Invited] 16:00-16:20**

**AI SoCs for AR/VR User-Interaction**

Hoi-Jun Yo (KAIST, Korea)

**[D36-2] [Invited] 16:20-16:40**

**Silicon Backplane and SoC Considerations for Microdisplay**

Bo-Eun Kim, Dongsoon Jeong, Hokwon Kim, Eun-Su Kim, Jeong Hwan Lee, Wook Hong, Joon Goo Lee, Kwang-Soo Lee, Min-Seok Kim, and Minsu Jeong (RAONTECH, Korea)

**[D36-3] [Invited] 16:40-17:00**

**Overview of a Visually Lossless Compression for Cutting-Edge Displays**

Hee-Tak Kim, Young-Jong Jang, and Byung-Soo Kim (KETI, Korea)

**[D36-4] [Invited] 17:00-17:20**

**Energy-Efficient Fast-Driving Buffer Amplifier Designs for Fast Frame-Rate and High-Resolution Displays**

Hyun-Sik Kim (KAIST, Korea)

**[D36-5] [Invited] 17:20-17:40**

**High-k Polymer Gate Dielectrics for Thin-Film Transistor Applications**

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

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<b>Session Title:</b>	<b>37. Manufacturing Application I</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>16:00-17:45</b>
<b>Session Room:</b>	<b>Room E (311~312)</b>
<b>Session Chair(s):</b>	<b>Prof. Sang Hyeon Kim (KAIST, Korea) Dr. Ja-Yeon Kim (KOPTI, Korea)</b>

[E37-1] [Invited]

16:00-16:25

**Introduction to High-Speed Visible Light Communication Using Yellow-Green and Red Micro-LEDs**

Wei-Ta Huang, Tzu-Yi Lee (Nat'l Yang Ming Chiao Tung Univ., Taiwan), Wen-Chien Miao (Hon Hai Research Inst., Taiwan), Chi-Wai Chow (Nat'l Yang Ming Chiao Tung Univ., Taiwan), Chien-Chung Lin (Nat'l Taiwan Univ., Taiwan), Shu-Wei Chang, and Hao-Chung Kuo (Nat'l Yang Ming Chiao Tung Univ., Taiwan)

[E37-2]

16:25-16:40

**Micro LED Total Repair Solutions for Display Application: EHD Inkjet Printing, 1-by-1 Transfer, and Functional Nano-Ink Material**

Vu Dat Nguyen, Hyungdong Lee, Kwangsun Jeon, Wonil Son, Jaewoo Joung, and Doyoung Byun (ENJET Co., Ltd., Korea)

[E37-3] [Invited]

16:40-17:05

**Scalable MicroLED Mass Transfer Technology Using Photonic Die Transfer**

Vikram Turkani, Vahid Akhavan, Michelle Lee (PulseForge Inc., USA), Pranav P. Gavirneni, and William S. Wong (Univ. of Waterloo, Canada)

[E37-4]

17:05-17:20

**Fluidic Self-Assembly of MicroLED Chips for Display Module Fabrication**

C. W. Park, S. H. Noh, J. H. Kim, Y. J. Lee (Chung-Ang Univ., Korea), S. J. Lee (Kook-Min Univ., Korea), B. K. Jang (KIMM, Korea), Y. R. Do (Kook-Min Univ., Korea), and J. S. Yoo (Chung-Ang Univ., Korea)

[E37-5] [Invited]

17:20-17:45

**Defect Engineering of Metal-Halide Perovskites for Next-Generation Optoelectronic Devices**

Hobeom Kim (GIST, Korea)

# iMiD 2023

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<b>Session Title:</b>	<b>38. Medical/Bio-Integrated Optoelectronics I</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>16:00-17:30</b>
<b>Session Room:</b>	<b>Room F (313)</b>
<b>Session Chair(s):</b>	<b>Prof. Donghee Son (Sungkyunkwan Univ., Korea)</b>

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**[F38-1] [Invited]** 16:00-16:25

## Light-Gated Polymer Transistors

Ulrike Kraft (Max Planck Inst. for Polymer Research, Germany)

**[F38-2] [Invited]** 16:25-16:50

## Artificial Sensorimotor Nerves

Wentao Xu (Nankai Univ., China)

**[F38-3] [Invited]** 16:50-17:15

## Soft Electronics for Neural and Skin Interfaced Technology

Jang Hoon Jou and Sang Min Won (Sungkyunkwan Univ., Korea)

**[F38-4]** 17:15-17:30

## Laser-Patterned Transparent Stretchable Thermal Patch for Attachable Thermotherapy

Seojin Kim, Yuhwa Bak, Yeji Shin, Youngwoo Kim, Dongwoon Lee, Minjun Choi, Eousik Cho, Sangjik Kwon, and Yongmin Jeon (Gachon Univ., Korea)

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<b>Session Title:</b>	<b>39. Advanced Manufacturing II</b>
<b>Session Date:</b>	<b>August 24 (Thu.), 2023</b>
<b>Session Time:</b>	<b>16:00-17:10</b>
<b>Session Room:</b>	<b>Room G (314~315)</b>
<b>Session Chair(s):</b>	<b>Prof. Doyoung Byun (Sungkyunkwan Univ., Korea) Prof. Heeyeop Chae (Sungkyunkwan Univ., Korea)</b>

**[G39-1] [Invited] 16:00-16:25**

**Development and Mechanical Analysis of Multi-Functional Encapsulation for Reliable Next-Generation OLED Displays**

Hyeongjun Lee, Hyeunwoo Kim (Sun Moon Univ., Korea), Seung Jin Oh, Sun-Woo Lee, Taek-Soo Kim (KAIST, Korea), and Jeong Hyun Kwon (Sun Moon Univ., Korea)

**[G39-2] 16:25-16:40**

**Machine Learning Assisted High-Precision Drop-on-Demand Patterning of Charged Droplets for 3D Printing Applications**

Shaheer Mohiuddin Khalil, Vu Dat Nguyen, Jaewoo Jeong, Diva Pradhan, and Doyoung Byun (ENJET Co., Ltd., Korea)

**[G39-3] 16:40-16:55**

**Concept and Process for a Patterned Quantum Dot Film with 30um Pixel Pitch**

Yeongbeom Lee, Youngji Lim, Jeongno Lee, Gang Yeol Yoo, Kyoungwon Park, and Chul Jong Han (KETI, Korea)

**[G39-4] 16:55-17:10**

**Defect Image Augmentation Method for Effective Deep-Learning in Display Panel Inspection**

Sanghoon Cho and Daekeun Shin (Samsung Display Co., Ltd., Korea)

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<b>Session Title:</b>	40. Go beyond limits in AR/VR: Merck Science Connect
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	16:00-17:30
<b>Session Room:</b>	Room H (316~317)
<b>Session Chair(s):</b>	Prof. Jeong-hun Kwak (Seoul Nat'l Univ., Korea)

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[H40-1] [Invited] 16:00-16:20

Market Differentiation of AR/VR Display

Jerry Kang (Omdia, Korea)

[H40-2] [Invited] 16:20-16:40

Optical Techniques Toward Hyper-Realistic AR and MR Glasses

Jae-Hyeung Park (Inha Univ., Korea)

[H40-3] 16:40-17:00

Next Generation Material for AR/VR Technology

Dong-Mee Song (Merck, Korea)

[H40-4] [Invited] [Merck Award] 17:00-17:30

Progress, Challenge and Opportunities in Oxide TFTs for Application from Display Backplane to AR/VR/Semiconductor Chips

Jae-Kyeong Jeong (Hanyang Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	41. Chemistry and Physics of QDs
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	09:00-10:20
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Byeong Guk Jeong (Pusan Nat'l Univ., Korea) Prof. Jaehoon Lim (Sungkyunkwan Univ., Korea)

[A41-1] [Invited] 09:00-09:25

## Surface-Initiated Heteroepitaxy of Zinc Chalcogenides on InP Nanocrystals

Yeongho Choi, Donghyo Hahm, Wan Ki Bae, and Jaehoon Lim (Sungkyunkwan Univ., Korea)

[A41-2] 09:25-09:40

## Direct Assessment of Charged States of Quantum Dots

Hak June Lee, Dongju Jung, Jeong Woo Park, Doyoon Shin, Jaemin Lim, Ka Hyung Kim, Seongbin Im, Se Jong Min, Jin Su Park, Jun Yeol Im, Jae Seung Lee (Sungkyunkwan Univ., Korea), Kookheon Char (Seoul Nat'l Univ., Korea), and Wan Ki Bae (Sungkyunkwan Univ., Korea)

[A41-3] 09:40-09:55

## Multidentate Zinc Thiolate Ligand for Preservable Aqueous Phase Transfer of Quantum Dots

Jisu Han, Yeongho Choi (Sungkyunkwan Univ., Korea), Hyeonjun Lee (KAIST, Korea), and Jaehoon Lim (Sungkyunkwan Univ., Korea)

[A41-4] [Invited] 09:55-10:20

## Surface Engineering of Quantum Dots with Adamantane-Based Ligands for High-Performance QLEDs

Gyeongju Kim (Hannam Univ., Korea), Jaeyoul Kim (Seoul Nat'l Univ., Korea), Prem Prabhakaran (Hannam Univ., Korea), Jeonghun Kwak (Seoul Nat'l Univ., Korea), and Dong Ryeol Whang (Hannam Univ., Korea)



# IMiD 2023

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<b>Session Title:</b>	42. Oxide TFT IV
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	09:00-10:30
<b>Session Room:</b>	Room B (214~215)
<b>Session Chair(s):</b>	Prof. Takashi Noguchi (Univ. of the Ryukyus, Japan) Prof. Hyun Suk Kim (Chungnam Nat'l Univ., Korea)

[B42-1] [Invited] 09:00-09:25

**Material Design and Strategies for Thermally Stable Oxide Semiconductor toward Three-Dimensional Integrated Device Application**

Takanori Takahashi and Yukiharu Uraoka (Nara Inst. of Science and Tech., Japan)

[B42-2] 09:25-09:40

**Indium Gallium Zinc Oxide Phototransistor with Porous Silica Layer for Visible Light Detection**

Jae Seong Han, Kyungmoon Kwak, Kyungho Park, Jong Bin An, Youjin Seo, and Hyun Jae Kim (Yonsei Univ., Korea)

[B42-3] [Invited] 09:40-10:05

**Analysis of Defect / Interface States for Oxide TFTs Utilizing HAX-PES**

Junghwan Kim, Xuejian Zhang (UNIST, Korea), Kihyung Sim (Tokyo Inst. of Tech., Japan), Hyun-woo Park (LG Display Co. Ltd., Korea), Kwun-Bum Chung (Dongguk Univ., Korea), and Hideo Hosono (Tokyo Inst. of Tech., Japan)

[B42-4] [Invited] 10:05-10:30

**All-Sputter-Deposited  $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$  Double-Gate Ferroelectric Thin-Film Transistor with Amorphous Indium-Gallium-Zinc Oxide Channel**

Soi Jeong (Inha Univ., Korea), Changhyeon Han, and Daewoong Kwon (Hanyang Univ., Korea)

# IMI D 2023

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<b>Session Title:</b>	43. LC Phenomena
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	09:00-10:20
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Prof. Young-ki Kim (POSTECH, Korea)

[C43-1] [Invited] 09:00-09:25

## The Ferroelectric Nematic Phase: Structure-Property Relationships

Ewan Cruickshank (Univ. of Aberdeen, UK), Damian Pocięcha (Univ. of Warsaw, Poland), Rebecca Walker (Univ. of Aberdeen, UK), Ewa Gorecka (Univ. of Warsaw, Poland), John MD Storey, and Corrie T Imrie (Univ. of Aberdeen, UK)

[C43-2] 09:25-09:40

## Liquid Crystal-Based Electro-Optic Device with Organic Rubrene Dispersion

Rab Nawaz, Pravinraj Selvaraj, Che-Ju Hsu, and Chi-Yen Huang (Nat'l Changhua Univ. of Education, Taiwan)

[C43-3] 09:40-09:55

## Analysis for the Risk of Image-Sticking between AFFF and HFFS

Sangmin Shin and Dong-Wan Kang (LinkGlobal21 Co., Ltd., Korea)

[C43-4] [Invited] 09:55-10:20

## A Significant Milestone in LC Research-Ferroelectric Nematic/Smectic LCs-: Fundamental and Practical Studies

Hiroya Nishikawa (RIKEN, Japan) and Hirotsugu Kikuchi (Kyushu Univ., Japan)

# IMiD 2023

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<b>Session Title:</b>	44. OLED Materials III
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	09:00-10:30
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Dr. Anna Hayer (Merck KGaA, Germany) Dr. Soon Ok Jeon (SAIT, Korea)

[D44-1] [Invited] 09:00-09:25

## Electroluminescent Clusters: Filling the Gap

Jianan Sun, Nan Zhang, and Hui Xu (Heilongjiang Univ., China)

[D44-2] 09:25-09:40

## Control of the Horizontal Emitting Dipole Ratio and Emission Color of Tetradentate Pt(II) Complexes for Highly Efficient Deep Blue OLEDs

Jin-Suk Huh (Seoul Nat'l Univ., Korea), Min Jae Sung, Soon-Ki Kwon, Da Yeon Lee, Yun-Hi Kim (Gyeongsang Nat'l Univ., Korea), and Jang-Joo Kim (Seoul Nat'l Univ., Korea)

[D44-3] [Invited] 09:40-10:05

## Exploring Highly Efficient Blue Thermally Activated Delayed Fluorescence Materials with Record-Breaking Electroluminescence Efficiencies

Yan Fu, Hao Liu, and Zujin Zhao (South China Univ. of Tech., China)

[D44-4] [Invited] 10:05-10:30

## Efficient Organic and Copper(I) TADF Emitters for OLEDs

Shaolong Gong (Wuhan Univ., China)

# IMiD 2023

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<b>Session Title:</b>	<b>45. Metaverse and XR Technologies</b>
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	09:00-10:30
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Dr. Jae Bum Cho (Samsung Display Co., Ltd., Korea) Dr. Keehoon Hong (ETRI, Korea)

**[E45-1] [Featured Invited]** 09:00-09:30

## Metaverse and XR Technologies

Hiroshi Mukawa (Sony Semiconductor Solutions Corp., Japan)

**[E45-2]** 09:30-09:45

## Self-Aligned Microdisplay Architecture for AR/VR Applications

Ehsan Fathi and Reza Chaji (VueReal Inc., Canada)

**[E45-3]** 09:45-10:00

## Power Saving and Memory Size Reduction Methods of Digital Burn-In Compensation for Virtual Reality Display

Byung Geun Jun, Jeong-Keun Ahn, Jim Zhuang, and Jacob Choi (Meta Platforms Inc., USA)

**[E45-4]** 10:00-10:15

## Simulation Study of Micro-Lens Array for Improving the Optical Properties of Virtual Reality System

Kilbock Lee, Donghee Nam, Jim Zhuang, and Jacob Choi (Meta Platforms Inc., USA)

**[E45-5]** 10:15-10:30

## Optimization for Micro-Lens and Color-Filter in AR-VR Applications

Sangmin Shin and Dong-Wan Kang (LinkGlobal21 Co., Ltd., Korea)

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<b>Session Title:</b>	<b>46. Medical/Bio-Integrated Optoelectronics II</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>09:00-10:30</b>
<b>Session Room:</b>	<b>Room F (313)</b>
<b>Session Chair(s):</b>	<b>Prof. Dongchan Kim (Gachon Univ., Korea)</b>

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**[F46-1] [Invited]** 09:00-09:25

**Bio-Inspired Artificial Cameras with Novel Imaging Characteristics**

Gil Ju Lee (Pusan Nat'l Univ., Korea) and Young Min Song (GIST, Korea)

**[F46-2] [Invited]** 09:25-09:50

**Solution-Based Processing of Optoelectronic Materials**

Joocheon Kang (Sungkyunkwan Univ., Korea)

**[F46-3] [Invited]** 09:50-10:15

**Designed 3D Nanostructure for High Performance Visible Light Photodetector**

Min-Ho Seo (Pusan Nat'l Univ., Korea)

**[F46-4]** 10:15-10:30

**Beyond Mobile Phone Displays: Leveraging Flat Panel Display Technology for Biomedical Applications**

Alfredo Mameli, Frennie Bens, Imke van der Schoor, Auke Jisk Kronemeijer, Evita van de Steeg, and Albert J.J.M. van Breemen (TNO, The Netherlands)

# iMID 2023

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<b>Session Title:</b>	47. Panel & Module Design with AI & Simulation I
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	09:00-10:20
<b>Session Room:</b>	Room G (314~315)
<b>Session Chair(s):</b>	Dr. Hyung Uk Cho (Samsung Display Co., Ltd., Korea) Dr. Yudeok Seo (Samsung Display Co., Ltd., Korea)

[G47-1] [Invited]

09:00-09:25

## Generative Design Technology for Improving Display R&D Efficiency

Il-Ho Kim, Youn-Yeol Yu, Na-Yong Kim, Kiseok Chang, Chang-Seung Woo, Seok-Woo Lee, Joon-Young Yang (LG Display Co., Ltd., Korea), Euntai Kim (Yonsei Univ., Korea), and Soo-Young Yoon (LG Display Co., Ltd., Korea)

[G47-2]

09:25-09:40

## Physics-Added Neural Networks for Predicting Evaporation Process of Fluid Droplets

Jun Seong Kim, Soon Wook Kwon, Hee Min Lee, and Joon Sang Lee (Yonsei Univ., Korea)

[G47-3]

09:40-09:55

## Numerally Investigate the Electrode Design to Increase the Particle Velocity for the Application of E-Paper Display

Wei Liu and Mohammad Khorsand Ahmadi (Eindhoven Univ. of Tech., The Netherlands)

[G47-4] [Invited]

09:55-10:20

## Deep Blue, Highly Efficient Eu(II) Complexes Ready for OLED

Carsten Rothe, Volodymyr Senkovskyy, and Jan-Michael Mewes (beeOLED GmbH, Germany)

# IMiD 2023

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<b>Session Title:</b>	<b>48. Perovskite Materials &amp; Their Applications</b>
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	09:00-10:25
<b>Session Room:</b>	Room H (316~317)
<b>Session Chair(s):</b>	Dr. Yuljae Cho (Shanghai Jiao Tong Univ., China) Dr. Jong Hyun Park (LG Display Co., Ltd., Korea)

[H48-1] [Invited] 09:00-09:25

Passivation Strategies for Mitigating Defect Challenges in Halide Perovskite Nanocrystal Light-Emitting Diodes

Bo Ram Lee (Pukyong Nat'l Univ., Korea)

[H48-2] 09:25-09:40

Development of Novel Anion-Exchange Precursor for Red Perovskite QD-LEDs Exceeding 21% of EQE

Seungmin Baek, Hyeon Woo Jeong, Hyejin Na, Sungho Choi, Seon Joo Lee, and Jaemin Lee (KRICT, Korea)

[H48-3] 09:40-09:55

Electronic Doping through van der Waals Contact Enhances Photoluminescence Quantum Yield in Two-Dimensional Tin Halide Perovskite

Jun-Ho Park, You-jin Reo, Ju-Hyun Jung, Taehyun Kim, Taiho Park, Yong-Young Noh, and Cheol-Joo Kim (POSTECH, Korea)

[H48-4] 09:55-10:10

Multi-Spectral Patterning of Inorganic Perovskites by Photo-Induced Anion Substitution

Hyewon Shim, Geonwoong Park, Yong-Young Noh, and Cheol-joo Kim (POSTECH, Korea)

[H48-5] 10:10-10:25

Anion Vacancy Defect Passivation of 2D-Layered Tin-Based Perovskite Thin-Film Transistor with Sulfur Doping

Jae-Hyeok Cho (Sungkyunkwan Univ., Korea), Ji-Young Go (POSTECH, Korea), Tan Tan Bui, Seunguk Mun, Yunseok Kim, Kyunghan Ahn (Sungkyunkwan Univ., Korea), Yong-Young Noh (POSTECH, Korea), and Myung-Gil Kim (Sungkyunkwan Univ., Korea)

# IMI D 2023

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<b>Session Title:</b>	49. QD Electroluminescence I
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	10:40-12:10
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Hyunho Lee (Kwangwoon Univ., Korea) Prof. Seong-Yong Cho (Hanyang Univ., Korea)

[A49-1] [Invited] 10:40-11:05

## Full Color QLED via Light Manipulation of Metasurface

Taikang Ye and Kai Wang (Southern Univ. of Science and Tech., China)

[A49-2] [Invited] 11:05-11:30

## Quantum-Dot Light-Emitting Diodes with Pure Color Electroluminescence Using Ag-In-Ga-S Quantum Dots

Genichi Motomura, Satoru Ohisa (NHK, Japan), Taro Uematsu, Susumu Kuwabata (Osaka Univ., Japan), Tatsuya Kameyama, Tsukasa Torimoto (Nagoya Univ., Japan), and Yoshihide Fujisaki (NHK, Japan)

[A49-3] 11:30-11:45

## Efficient and Stable All-Inorganic Quantum Dot Light Emitting Diodes

Woon Ho Jung, Byong Jae Kim, Mahnmin Choi, Hyeonjun Lee (Sungkyunkwan Univ., Korea), Hyunjin Cho (KAIST, Korea), Kwon Yong Woo, Yeongho Choi (Sungkyunkwan Univ., Korea), Hyo Geun Lee, Seong-Yong Cho (Hanyang Univ., Korea), Doh Chang Lee (KAIST, Korea), Sohee Jeong, and Jaehoon Lim (Sungkyunkwan Univ., Korea)

[A49-4] [Invited] 11:45-12:10

## Full Color Active-Matrix QD-LED Display with All Inkjet-Printing Technology

Myoungjin Park, Jaekook Ha, Yun Ku Jung, Sehun Kim, Seung Uk Noh, Youngmo Koo, Donghoon Kwak, Yeo Geon Yoon, and Changhee Lee (Samsung Display Co., Ltd., Korea)



# IMiD 2023

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<b>Session Title:</b>	50. Solution TFT II
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	10:40-12:00
<b>Session Room:</b>	Room B (214~215)
<b>Session Chair(s):</b>	Prof. Yukiharu Uraoka (Nara Inst. of Science and Tech., Japan)

[B50-1] [Invited] 10:40-11:05

**Solution-Processed Organic-Inorganic Hybrid Phototransistors for Optoelectronic Applications**

Dingwei Li, Yingjie Tang, Yan Wang, Fanfan Li, Yitong Chen, Huihui Ren (Zhejiang Univ., China), and Bowen Zhu (Westlake Univ., China)

[B50-2] 11:05-11:20

**Drop-on-Demand Patterning of 2D MoS<sub>2</sub> from Solution Precursors Using Electrohydrodynamic Jet for TFT Application**

Thi Thu Thuy Can and Woon-Seop Choi (Hoseo Univ., Korea)

[B50-3] 11:20-11:35

**Precursor Solution Aging: A Universal Strategy Modulating Crystallization of Two-Dimensional Tin-Halide Perovskites**

Youjin Reo, Taesu Choi, Ji-Young Go (POSTECH, Korea), Seungju Jeon, Bogyu Lim (KRICT, Korea), Huihui Zhu, Ao Liu, and Yong-Young Noh (POSTECH, Korea)

[B50-4] [Invited] 11:35-12:00

**Solution-Processed Thin-Film Transistors for Ferroelectric and Charge Trap Multibit Memory Applications**

Min-Hoi Kim and Amos Amoako Boampong (Hanbat Nat'l Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	51. LC Elastomers
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	10:40-12:00
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Prof. Jeong Jae Wie (Hanyang Univ., Korea) Prof. Jun-Hee Na (Chungnam Nat'l Univ., Korea)

[C51-1] [Invited] 10:40-11:05

Liquid Crystalline Elastomers for Actuation and Energy Dissipation Applications

Mohand Saed (Univ. of Cambridge, UK)

[C51-2] [Invited] 11:05-11:30

Self-Assembly of Liquid Crystal Structures from Block Copolymer Mixture by Hydrogen Bonding

Shiao-Wei Kuo (Nat'l Sun Yat Sen Univ., Taiwan)

[C51-3] 11:30-11:45

Pupil-Scalable, Light-Regulating Artificial Iris Using Gradiently Photo-Patterned Polymer Networks for Switching-Triggered Photochromic Effect

Asad Nauman, Young-Min Cho, Jae-Won Lee, and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

[C51-4] 11:45-12:00

Stretchable Multi-Color Separations Using Structural Colors of Chiral Liquid Crystal Elastomer

Seungmin Nam, Dahee Wang, Chaehyun Kwon, Sang Hyun Han, and Su Seok Choi (POSTECH, Korea)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	52. OLED Materials IV
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	10:40-12:10
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Prof. Shaolong Gong (Wuhan Univ., China)

[D52-1] [Invited] 10:40-11:05

## Beyond Single Material Performance: Shaping the Emissive Layer by Tailored Hosts for Green Phosphorescent OLEDs

Anna Hayer, Christian Eickhoff, Stephanie Ganss, Falk May, Martin Kraska, Jonas Kroeber, Amir Parham, Sebastian Stolz, and Joachim Kaiser (Merck KGaH, Germany)

[D52-2] 11:05-11:20

## Advances in Solution-Processed OLEDs with Boron-Based Emissive Units and Impact of Charge Balance on Efficiency Roll-off

Bonghoon Cha, Seungju Ok, Thi Na Le (Kyung Hee Univ., Korea), Yunhi Kim (Gyeongsang Nat'l Univ., Korea), and Minchul Suh (Kyung Hee Univ., Korea)

[D52-3] [Invited] 11:20-11:45

## High-Performance Ultraviolet and Deep-Blue Organic Light-Emitting Diode Enabled by Long-Short Axis Strategy

Baoxi Li, Xin He, Han Zhang, and Zhiming Wang (South China Univ. of Tech., China)

[D52-4] [Invited] 11:45-12:10

## Probing the Orientation of Individual Emitter Molecules for Higher OLED Efficiency

Francisco Tenopala-Carmona, Dirk Hertel, Sabina Hillebrandt, Andreas Mischok (Univ. of Cologne, Germany), Arko Graf (Univ. of St Andrews, UK), Klaus Meerholz, and Malte C. Gather (Univ. of Cologne, Germany)

# IMI D 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	53. Optics for AR/VR/MR/3D
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	10:40-12:05
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Mr. Hiroshi Mukawa (Sony Semiconductor Solutions Corp., Japan) Dr. Jisoo Hong (KETI, Korea)

[E53-1] [Invited] 10:40-11:05

Wide Viewing Zone Autostereoscopic Display Using High-Aperture-Ratio Parallax Barrier

Goro Hamagishi, Kayo Yoshimoto, and Hideya Takahashi (Osaka Metropolitan Univ., Japan)

[E53-2] 11:05-11:20

Three-Dimensional Waveguide-Based Augmented Reality Display

NaiQin Zhao, JiaSheng Xiao, PeiXin Weng, and Hao Zhang (Tsinghua Univ., China)

[E53-3] 11:20-11:35

Aberration Analysis in Large Numerical Aperture Concave Mirror Holographic Optical Elements

Seongju Lee, Hosung Jeon, Woonchan Moon, and Joonku Hahn (Kyungpook Nat'l Univ., Korea)

[E53-4] 11:35-11:50

Increasing Vection Strength by Adding Expanding Grating at Periphery of Visual Field

Kosuke Nakanishi, Haruki Mizushina, and Kenji Yamamoto (Tokushima Univ., Japan)

[E53-5] 11:50-12:05

Binocular Disparity of the Aerial Image Reconstructed Behind the Observer

Hiroki Takatsuka (Utsunomiya Univ., Japan), Munekazu Date, Ayumi Matsumoto, Masaki Kitahara (NTT Corp., Japan), Masaki Yasugi, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

# IMiD 2023

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<b>Session Title:</b>	<b>54. Medical/Bio-Integrated Optoelectronics III</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>10:40-11:55</b>
<b>Session Room:</b>	<b>Room F (313)</b>
<b>Session Chair(s):</b>	<b>Dr. Yong-Sang Ryu (KIST, Korea)</b>

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[F54-1] [Invited] 10:40-11:05

**Novel Encapsulation Technology: Lubricant-Infused Fluoropolymer Multilayers**

Jungmok Seo (Yonsei Univ., Korea)

[F54-2] [Invited] 11:05-11:30

**Tissue-Adhesive Hydrogel Biointerfaces for Sutureless Implantable Electronics**

Mikyung Shin (Sungkyunkwan Univ., Korea)

[F54-3] [Invited] 11:30-11:55

**Modular Halide Perovskite-Based Optoelectronics via Self-Healing Polymer Encapsulation**

In Soo Kim (KIST, Korea)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	<b>55. Material Design with AI &amp; Simulation</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>10:40-12:20</b>
<b>Session Room:</b>	<b>Room G (314~315)</b>
<b>Session Chair(s):</b>	<b>Dr. Shaun Kwak (Schrodinger, USA) Mr. Hoilim Kim (Samsung Display Co., Ltd., Korea)</b>

[G55-1] [Invited]

10:40-11:05

**Experimental and Quantum-Chemical Study of the Exciton Binding Energy in Disordered Organic Semiconductors**

R. Coehoorn, B. Baumeier, G. Tirimbo, C.H.L. Weijtens, H. Tomita, P.A. Bobbert (Eindhoven Univ. of Tech., The Netherlands), and S. Gottardi (Simbeyond B.V., The Netherlands)

[G55-2] [Invited]

11:05-11:30

**AI-Driven Exploration of Organic Molecules for n-Charge Generation Layers**

Seungwu Han (Seoul Nat'l Univ., Korea)

[G55-3] [Invited]

11:30-11:55

**Smart Design of Display Materials Powered by Augmented Intelligence: A New Strategy in the Era of Digital Chemistry**

H. Shaun Kwak, Hadi Abroshan, Anand Chandrasekaran, Paul Winget, David J. Giesen, Thomas J. Mustard, Yun Liu, and Mathew D. Halls (Schrodinger Inc., USA)

[G55-4] [Invited]

11:55-12:20

**Digital Discovery and Development of Organic Electronic Materials**

Tobias Neumann, Artem Fediai, Timo Strunk, and Franz Symalla (Nanomatch GmbH, Germany)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	<b>56. Metamaterials for Display</b>
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	10:40-12:00
<b>Session Room:</b>	Room H (316~317)
<b>Session Chair(s):</b>	Prof. Inki Kim (Sungkunkwan Univ., Korea) Dr. Sunghoon Hong (ETRI, Korea)

[H56-1] [Invited] 10:40-11:05

## Radiation-Based Thermal Management for Flexible/Wearable Devices

Young Min Song (GIST, Korea) and Gil Ju Lee (Pusan Nat'l Univ., Korea)

[H56-2] [Invited] 11:05-11:30

## New Generation of Nanophotonic Systems for Emerging Light-Enabled Technologies

Jung-Hwan Song (Stanford Univ., USA), Jorik van de Groep (Univ. of Amsterdam, The Netherlands), Qitong Li, Fenghao Xu, and Mark L. Brongersma (Stanford Univ., USA)

[H56-3] 11:30-11:45

## Simultaneous Spatial and Spectral Tunable Metasurface Using Inverse Design and Oblique Helicoidal Cholesterics

Joohoon Kim, Junhyung Im, Sunae So, Youngki Kim, and Junsuk Rho (POSTECH, Korea)

[H56-4] 11:45-12:00

## Artificial Intelligence Assisted Discovery of Luminous Materials

Surjeet Kumar, Subhajit Dutta, Junghyeon Yoo, Kotiba Hamad, and Daeho Yoon (Sungkyunkwan Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	57. QD Electroluminescence II
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	13:10-14:40
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Jaehoon Kim (Dong-A Univ., Korea) Dr. Myoungjin Park (Samsung Display Co., Ltd., Korea)

[A57-1] [Invited] 13:10-13:35

Managing the Charge Dynamics in Quantum-Dot Light-Emitting Diodes

Yizheng Jin (Zhejiang Univ., China)

[A57-2] [Invited] 13:35-14:00

Toward Ultrahigh-Resolution Full-Color Electroluminescent Display by Direct Quantum Dot Photolithograph

Chaoyu Xiang (Qianwan Inst. of CNITECH, China)

[A57-3] 14:00-14:15

Enhanced Light Extraction in Top-Emission Quantum Dot Light-Emitting Diodes

Taeso Lee and Jeonghun Kwak (Seoul Nat'l Univ., Korea)

[A57-4] [Invited] 14:15-14:40

Efficient Charge Transport and Light Emission in Perovskite Optoelectronics

Changsoon Cho (POSTECH, Korea)



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<b>Session Title:</b>	<b>58. Application of TFTs I</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>13:10-14:30</b>
<b>Session Room:</b>	<b>Room B (214~215)</b>
<b>Session Chair(s):</b>	<b>Prof. Min-Hoi Kim (Hanbat Nat'l Univ., Korea)</b>

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[B58-1] [Invited] 13:10-13:35

**Ultraflexible Active-Matrix Sensor System and Low-Noise Circuits for Biosignal Monitoring**

Takafumi Uemura and Tsuyoshi Sekitani (Osaka Univ., Japan)

[B58-2] 13:35-13:50

**Modulation of Synaptic Weight in Oxide Semiconductor-Based Synaptic Transistors by Controlling Charge Trapping**

Seok Gyu Hong, Won Kyung Min, Jusung Chung, Dong Hyun Choi, Hyung Tae Kim, Moon Ho Lee, and Hyun Jae Kim (Yonsei Univ., Korea)

[B58-3] 13:50-14:05

**Ni-Doped CuCrO<sub>2</sub> Photodetector with Voltage-Tunable Broadband Photodetection and Its Application in Optoelectronic Logic**

Yunchae Jeon, Taehyun Park, and Hocheon Yoo (Gachon Univ., Korea)

[B58-4] [Invited] 14:05-14:30

**Active Pixel Sensors Enabling Large Area Imaging with High Resolution and Wide Dynamic Range**

Kai Wang (Sun Yat-sen Univ., China)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	59. Topological Defects
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	13:10-14:30
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Dr. Hyun Kim (KRICT, Korea) Dr. Kyung-Il Joo (KOPTI, Korea)

[C59-1] [Invited] 13:10-13:35

**Visual Texture Created with Topological Defects in Liquid Crystal: How to Create the Watery, Powdery, or Glittering Looks?**

Ya Zi Wang, Sheng Kai Yao, Jing Kai Chou, Chin Chun Wang, Cheng En Li, and Jieh Wen Tsung (Nat'l Yang Ming Chiao Tung Univ., Taiwan)

[C59-2] 13:35-13:50

**Control of Liquid Crystal Director and Defects Behavior with Pulse-Train Electric Field**

Vitaly P. Panov, Yong Woo Park, Sun Kuk Kim, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[C59-3] 13:50-14:05

**Opto-Physical Unclonable Function with Surface Random Wrinkles**

Kitae Kim, Dowon Kim, Moon-Young Choi, and Jun-Hee Na (Chungnam Nat'l Univ., Korea)

[C59-4] [Invited] 14:05-14:30

**Predesigned and Generation of Topological Defects in Nematic Liquid Crystals**

Chao Zhou (Southern Univ. of Science and Tech., China), Yubing Guo (Beijing Inst. of Tech., China), Miao jiang, Zhongjie Ma, Shengzhu Yi, and Qi-Huo Wei (Southern Univ. of Science and Tech., China)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	60. OLED Manufacturing I
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	13:10-14:30
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Dr. Chan Young Park (Samsung Display Co., Ltd., Korea)

[D60-1] [Invited] 13:10-13:35

Energy Level Alignment and Charge Transfer Dynamics Depending on Molecular Orientation  
Jeong Won Kim (KRISS, Korea)

[D60-2] 13:35-13:50

Stacked QD-OLED Panel Applying Inkjet Printing Process with Industrial Compatibility

Byoung-Hwa Kwon, Jin-Wook Shin, Chan-Mo Kang, Hyunsu Cho, Chul Woong Joo, Sukyung Choi, Hyungwoo Suh, Yoonsung Yoo, Nam Sung Cho, Chun-Won Byun, Dasol Kim (ETRI, Korea), Chang Min Lee (DUKSAN Neolux Co., Ltd., Korea), Dong-Kyun Shin, Jaeryul Yu (Gosantech, Korea), Chun Sakong (ChemE Inc., Korea), Yeon Soo Lee, and Hyun Sang Cho (DUKSAN Neolux Co., Ltd., Korea)

[D60-3] 13:50-14:05

Improvement of Low Gray Color Expression and Black Quality on Large Sized White OLED with Black Bank

Jang-mi Lee, Youn-Seung Choi, Ban-Suck Kang, Chung-Sun Lim, Sang-min Lee, Tae-Rim Lee, Han-Seop Kim, and Hyeon-woo Lee (LG Display Co., Ltd., Korea)

[D60-4] [Invited] 14:05-14:30

Plasmon-Induced Amplification of Near-Field Effect with Au Nanosphere Pattern Arrays for Efficient Light Harvesting Properties

Jung Kyu Kim (Sungkyunkwan Univ., Korea)

# IMI D 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	61. Holography for AR/VR/MR/3D
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	13:10-14:45
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Dr. Christophe Martinez (CEA Leti, France) Dr. Jinsoo Jeong (KETI, Korea)

[E61-1] [Invited] 13:10-13:35

**Dynamic Behavior of Unconventional Analog Holographic Displays for Integrated Near Eye Display Concepts**

Christophe Martinez, Matthias Colard, and Fabian Rainouard (Grenoble Alpes Univ., France)

[E61-2] 13:35-13:50

**Holographic Maxwellian Near-Eye Display with Continuous Eyebox Replication**

Shijie Zhang, Zhiqi Zhang, and Juan Liu (Beijing Inst. of Tech., China)

[E61-3] 13:50-14:05

**Accurate Monocular Depth Estimation for Hologram Generation Using Data Augmentation based on an Object-Copy-Paste Method**

Sehwan Lim, Yoonmo Yang, Kwang-Soon Choi (KETI, Korea), Chulhee Lee (Yonsei Univ., Korea), and Jiwoon Yeom (KETI, Korea)

[E61-4] 14:05-14:20

**4K Diffraction Model-Driven Network for Phase-Only Hologram Generation**

Kexuan Liu, Jiachen Wu, Zehao He, and Liangcai Cao (Tsinghua Univ., China)

[E61-5] [Invited] 14:20-14:45

**Design and Development of Lightweight Holographic Projection Module for Augmented Reality**

Jinsoo Jeong, Jiwoon Yeom, and Byounghyo Lee (KETI, Korea)

# IMiD 2023

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<b>Session Title:</b>	<b>62. Medical/Bio-Integrated Optoelectronics IV</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>13:10-14:40</b>
<b>Session Room:</b>	<b>Room F (313)</b>
<b>Session Chair(s):</b>	<b>Prof. Jungmok Seo (Yonsei Univ., Korea)</b>

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[F62-1] [Invited] 13:10-13:35

**Omnidirectional Printing of Intrinsically Soft Interconnects for Bio/Medical Applications**

Seungjun Chung (KIST, Korea)

[F62-2] [Invited] 13:35-14:00

**Metal-Insulator-Metal device for Molecular Sensor and Their Optical Application**

Jongsu Lee, Yusin Pak (KIST, Korea), and Yong-Sang Ryu (Korea Univ., Korea)

[F62-3] [Invited] 14:00-14:25

**Wearable Biosensors and Bio-Fueled Electrochromic Displays**

Jayoung Kim (Yonsei Univ., Korea)

[F62-4] 14:25-14:40

**Skin-Attachable Hydrocolloid OLED Patch for Advanced Phototherapeutics**

Seohyun Kim, Yujin Kwak, Youngwoo Kim, DongWoon Lee, Yeji Shin, Eou-Sik Cho, Sang Jik Kwon (Gachon Univ., Korea), HyungSoon Youn, JinHong Jeong (T&L Company, Korea), and Yongmin Jeon (Gachon Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	63. Panel & Module Design with AI & Simulation II
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	13:10-14:30
<b>Session Room:</b>	Room G (314~315)
<b>Session Chair(s):</b>	Prof. Seung-Yeol Lee (Kyungpook Nat'l Univ., Korea) Dr. Kiseok Chang (LG Display Co., Ltd., Korea)

[G63-1] [Invited] 13:10-13:35

Digital Hologram Transformation, Interpolation, and Optimization Using Light Field to Hologram Pattern Conversion

Seung-Yeol Lee (Kyungpook Nat'l Univ., Korea)

[G63-2] [Invited] 13:35-14:00

DRAFT: Illumination Modeling and AI Optimization for Displays

William Cassarly (Synopsys Inc., USA)

[G63-3] 14:00-14:15

High-Fidelity Model-Driven Deep Neural Networks for Phase-Only Computer-Generated Holography

Kexuan Liu, Jiachen Wu, Zehao He, and Liangcai Cao (Tsinghua Univ., China)

[G63-4] 14:15-14:30

Enhancement of Computer-Generated Hologram from Phase Propagation Method Using Transformer Based U-Net Architecture

F M Fahmid Hossain, Tuvshinjargal Amgalan, Shariar Md Imtiaz, Hui-Ying Wu, Md. Biddut Hossain (Chungbuk Nat'l Univ., Korea), Seok Hee Jeon (Incheon Nat'l Univ., Korea), and Nam Kim (Chungbuk Nat'l Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	<b>64. Display Components/Systems for Next Generation Display</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>13:10-14:35</b>
<b>Session Room:</b>	<b>Room H (316~317)</b>
<b>Session Chair(s):</b>	<b>Dr. Jaemin Lee (KRICT, Korea)</b>

**[H64-1] [Invited] 13:10-13:35**

**Pilot Researches about the Applications of Carbon Nanotube and Related Materials in Display**

Peng Liu, Liang Liu, Kaili Jiang, and Shoushan Fan (Tsinghua Univ., China)

**[H64-2] 13:35-13:50**

**A Mobility Tunable Color E-Paper based on Electrophoretic Particles Modified by Mixed Acid-Base Functional Groups**

Yue Zhang, Feng Xiong, Jinglan Yang, Debo Zeng, Zheng Zeng, and Bo-Ru Yang (Sun Yat-Sen Univ., China)

**[H64-3] 13:50-14:05**

**Revolutionizing Micro-LED Displays: A Ferroelectric FET-Based Method for MURA-Free Display with Enhanced Light Compensation**

Taewon Jin (Hanyang Univ., Korea), Sanghyeon Kim (KAIST, Korea), Jaehoon Han, Daehwan Ahn (KIST, Korea), Seongui An, Taehyeon Noh, Xinkai Sun, Cheoljun Kim (Hanyang Univ., Korea), Juhyuk Park (KAIST, Korea), and Younghyun Kim (Hanyang Univ., Korea)

**[H64-4] 14:05-14:20**

**Next-Generation OLED Technology: Multi-Functional Sensor OLED Display**

Sung Wook Kim, Seokgyu Yoon, Min-Soo Choi, Jinsoo Jung, Hoilim Kim, Dae-Young Lee, Seunghyun Moon (Samsung Display Co., Ltd., Korea), Kyung-Bae Park (Samsung Electronics Co., Ltd., Korea), and Sunghan Kim (Samsung Display Co., Ltd., Korea)

**[H64-5] 14:20-14:35**

**Auxetic Structured Omnidirectionally Stretchable Glass-Fabric Reinforced Film with Negative Poisson's Ratio of -1 for Distortion-Free Display Substrate**

Yung Lee, Hyun Seok Kang, Sehun Park, Junho Jang, and Byeong-Soo Bae (KAIST, Korea)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	<b>65. Emerging Technologies for QD Display I</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>14:50-15:55</b>
<b>Session Room:</b>	<b>Room A (211~213)</b>
<b>Session Chair(s):</b>	<b>Prof. Jeonghun Kwak (Seoul Nat'l Univ., Korea) Prof. Donggu Lee (Gyeongsang Nat'l Univ., Korea)</b>

[A65-1]

14:50-15:05

## The Effects of Halide Compound Treatments on the Performance of Colloidal Quantum Dot Light-Emitting Diodes

Jaeyeop Lee (Pusan Nat'l Univ., Korea), Woon Ho Jung (Sungkyunkwan Univ., Korea), Chaegwang Lim (Pusan Nat'l Univ., Korea), Jaehoon Lim (Sungkyunkwan Univ., Korea), and Jeongkyun Roh (Pusan Nat'l Univ., Korea)

[A65-2] [Invited]

15:05-15:30

## QD Image Sensors as an Enabler of Accessible Short-Wave Infrared Imaging

J. Lee, Epimitheas Georgitzikis, Vladimir Pejović, Joo Hyoung Kim, Itai Lieberman, Nikolas Papadopoulos, Myung Jin Lim, Luis Moreno Hagelsieb, Naresh Chandrasekaran, Renaud Puybaret, Yunlong Li, Tom Verschooten, Steven Thijs, David Cheyns, Paul Heremans, and P. E. Malinowski (Imec, Belgium)

[A65-3] [Invited] [Merck Young Scientist Award]

15:30-15:55

## Towards New Applications of Quantum Dot Light-Emitting Diodes

Jeonghun Kwak, Geun Woo Baek, Taesoo Lee, Suhyeon Lee, Ahyoung Hong, and Sun Hong Kim (Seoul Nat'l Univ., Korea)



# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	<b>66. Emerging TFT</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>14:50-16:15</b>
<b>Session Room:</b>	<b>Room B (214~215)</b>
<b>Session Chair(s):</b>	<b>Prof. Takafumi Uemura (Osaka Univ., Japan) Prof. Tae In Kim (Inha Univ., Korea)</b>

**[B66-1] [Invited] 14:50-15:15**

## High-Temperature and High-Luminance Characteristics for Low-Temperature Polycrystalline Thin-Film Transistor Technologies in AMOLED Displays

Keunwoo Kim, Tien Nguyen Thanh, Bummo Sung, Sangsub Kim, Hanbit Kim, Dokyeong Lee, Jiyeong Shin, Sanggun Choi, Sunhee Lee, Keunho Jang, and Changhee Lee (Samsung Display Co., Ltd., Korea)

**[B66-2] 15:15-15:30**

## OLED Pixel Circuit based on Double Gate Metal Oxide TFT

YiKyoung You and KeeChan Park (Konkuk Univ., Korea)

**[B66-3] 15:30-15:45**

## Enhancement of Scattering Uniformity in Indium Gallium Zinc Oxide Thin Film Devices via Atomic Layer Deposition Equipment

Heung-Jo Lee (Hanyang Univ., Korea), In-Tak Cho, Pil-Sang Yun, Jong-Uk Bae, Woo-Sup Shin (LG Display Co., Ltd., Korea), and Jae-Kyeong Jeong (Hanyang Univ., Korea)

**[B66-4] 15:45-16:00**

## Fabrication of a Ferroelectric Amorphous Oxide Semiconductor FET with Low Temperature Hf-Based Ferroelectric for Emerging Memory Applications

Tae Hyeon Noh, Hyo-Bae Kim, Taewon Jin, Seung Min Park, Seong Ui An, Xinkai Sun, Ji-Hoon Ahn, and Younghyun Kim (Hanyang Univ., Korea)

**[B66-5] 16:00-16:15**

## Designing an N-Channel TFT Inverter with Precise Zero Offset Voltage for High-Performance Applications

Jang Hoo Lee, Seo Yun Kim, Young Jin Kim, Seungjae Moon, and Byung Seong Bae (Hoseo Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	67. LC XR Devices
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	14:50-16:20
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Prof. Hak Rin Kim (Kyungpook Nat'l Univ., Korea) Dr. Tae Hoon Choi (KATECH, Korea)

[C67-1] [Invited] 14:50-15:15

## Near-Eye Displays Using Chiral Liquid Crystal Gratings for Metaverse

Xinyu Ma, Tingyu Liu, Seak Pang Zou, Chao Ping Chen, Qiang Chu (Shanghai Jiao Tong Univ., China), and Chul Gyu Jhun (Hoseo Univ., Korea)

[C67-2] [Invited] 15:15-15:40

## 2D/3D Switchable Light-Field Imaging System for Utilizing the Military Application

Kyung-Il Joo, Min-Kyu Park, Sungjin Lim, Kwang-Hoon Lee, Tae-Hyun Lee, Ki-Dong Lim (KOPTI, Korea), Jae-Won Lee, and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

[C67-3] [Invited] 15:40-16:05

## Hierarchical Liquid Crystal Microstructures for Multi-Degree Optical Field Manipulation

Peng Chen, Chun-ting Xu, and Wei Hu (Nanjing Univ., China)

[C67-4] 16:05-16:20

## Depth-Switchable Augmented Reality Display: More Depth Expression with Fewer Optics Designed with Quarter-Waveplate-Based Geometric Phase Modulation Effects

Jung-Yeop Shin, Jae-Won Lee, Jun-Kai Wang, Jin-Hyeok Seo, Hye-Won Jang, and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

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<b>Session Title:</b>	68. OLED Manufacturing II
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	14:50-16:10
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Prof. Jung Kyu Kim (Sungkyunkwan Univ., Korea)

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[D68-1] [Invited] 14:50-15:15

Impedance Spectroscopy Analysis for Organic Electronics

Jae-Hyun Lee (Hanbat Nat'l Univ., Korea)

[D68-2] 15:15-15:30

Efficiency of OLED-on-Silicon Micro Display with Plasma Treated Surface of Aluminum Anode

Chan Young Park (Samsung Display Co., Ltd., Korea) and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[D68-3] 15:30-15:45

A Fast-Switching VINIT Voltage Driver for AMOLED Applications

Zhengde Lai, Chunli Wei, Xuesong Tian, Zhongjie Wang, Shuai Hou, Yongmei Yang, Ruihui Shao, Xiaoxu Li, and Zhengde Lai (BOE Tech. Group Co., Ltd., China)

[D68-4] [Invited] 15:45-16:10

Tetraphenylbenzene Derivative of Anthracene for Non-Doped Deep-Blue Triplet-Triplet Annihilation OLEDs

Sunhee Lee (Seoul Women's Univ., Korea), Kyo Min Hwang, Taekyung Kim (Hongik Univ., Korea), and Won-Sik Han (Seoul Women's Univ., Korea)

# IMI D 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	<b>69. Emerging Technologies for AR/VR/MR/3D</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>14:50-16:25</b>
<b>Session Room:</b>	<b>Room E (311~312)</b>
<b>Session Chair(s):</b>	<b>Dr. Haruki Mizushina (Tokushima Univ., Japan) Dr. Kihong Choi (ETRI, Korea)</b>

[E69-1] [Invited] 14:50-15:15

## Motion Parallax Can Improve Perceived Depth Instability in Stereo Images with Left-Right Size Mismatch

Haruki Mizushina, Yusuke Fukuta, Shiro Suyama (Utsunomiya Univ., Japan), and Kenji Yamamoto (Tokushima Univ., Japan)

[E69-2] 15:15-15:30

## Volumetric Display with a Centimeter-Sized Laser Drawing Space

Yoshio Hayasaki, Tatsuki Mori, and Kota Kumagai (Utsunomiya Univ., Japan)

[E69-3] 15:30-15:45

## Realization and Evaluation of Accurate Depth Perception by Stereo DFD (Depth-Fused 3D) Rendering in Multilayer Stereo Display

Yuto Morishita (Tokushima Univ., Japan), Munekazu Date, Ayumi Matsumoto, Masaki Kitahara (Nippon Telegraph and Telephone Corp., Japan), Haruki Mizushina, Shiro Suyama, and Kenji Yamamoto (Tokushima Univ., Japan)

[E69-4] 15:45-16:00

## Volumetric Image with Micro Cloud Voxels Excited by Femtosecond Laser Pulses

Keisuke Numazawa, Kota Kumagai, and Yoshio Hayasaki (Utsunomiya Univ., Japan)

[E69-5] [Invited] 16:00-16:25

## AR Contact Lens Using Holography

Yasuhiro Takaki (Tokyo Univ. of Agriculture and Tech., Japan)

# IMiD 2023

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<b>Session Title:</b>	<b>70. Medical/Bio-Integrated Optoelectronics V</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>14:50-16:10</b>
<b>Session Room:</b>	<b>Room F (313)</b>
<b>Session Chair(s):</b>	<b>Prof. Mikyung Shin (Sungkyunkwan Univ., Korea)</b>

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**[F70-1] [Invited]** 14:50-15:15

**Bio-Inspired Optoelectronics based on Flexible and Synaptic Devices**

Changsoon Choi (KIST, Korea)

**[F70-2] [Invited]** 15:15-15:40

**Quantum Dot LEDs for Interactive Display Applications**

Dong Chan Kim (Gachon Univ., Korea)

**[F70-3]** 15:40-15:55

**Ultrahigh-Definition Full-Color Perovskite Nanocrystal Patterning for High-Performance Skin-Attachable Displays**

Jong Ik Kwon (UNIST, Korea), Gyuri Park (DGIST, Korea), Joonha Hwang, Changsoon Choi (KIST, Korea), Jiwoong Yang (DGIST, Korea), and Moon Kee Choi (UNIST, Korea)

**[F70-4]** 15:55-16:10

**Wavelength-Tunable Organic Light-Emitting Diodes: The first Single Area Light-Source for Pulse Oximetry**

Minseong Park, DongWoon Lee, Young Woo Kim, Yong Hyeok Seo, Yeji Shin, Sang Jik Kwon, Eou-Sik Cho, and Yongmin Jeon (Gachon Univ., Korea)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	<b>71. Device Design with AI &amp; Simulation</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>14:50-16:20</b>
<b>Session Room:</b>	<b>Room G (314~315)</b>
<b>Session Chair(s):</b>	<b>Prof. Jungho Kim (Kyung Hee Univ., Korea) Dr. Vygintas Jankus (BeeOLED GmbH, Germany)</b>

[G71-1] [Invited] 14:50-15:15

**Bridging Simulation and AI: Its Application to Modern Electronic Devices**

Changwook Jeong (UNIST, Korea)

[G71-2] [Invited] 15:15-15:40

**Understanding Device Operation and Degradation of TADF OLEDs by Advanced Characterization**

Stefano Sem, Sandra Jenatsch, Simon Züfle, Edoardo Stanzani, and Beat Ruhstaller (Fluxim AG, Switzerland)

[G71-3] [Invited] 15:40-16:05

**Advanced 3D Simulations of the Time-Resolved Behavior of OLEDs**

Jacopo Marcheselli, Harm van Eersel, Engin Torun, Siebe van Mensfoort (Simbeyond B.V., The Netherlands), Reinder Coehoorn (Eindhoven Univ. of Tech., The Netherlands), and Stefano Gottardi (Simbeyond B.V., The Netherlands)

[G71-4] 16:05-16:20

**TurboLED: Novel Pixel Design for Low Power Displays**

Peter Levermore (Excyton Limited, UK), Simon Zeder, Balthasar Bluelle (Fluxim AG, Switzerland), Kleitos Stavrou, Andrew Monkman (Univ. of Durham, UK), and Beat Ruhstaller (Fluxim AG, Switzerland)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	72. Optoelectronic Materials & Devices for Display
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	14:50-16:15
<b>Session Room:</b>	Room H (316~317)
<b>Session Chair(s):</b>	Prof. Jung Inn Sohn (Dongguk Univ., Korea) Prof. Bo Hou (Cardiff Univ., UK)

[H72-1] [Invited] 14:50-15:15

**Modulated White Light Emission through Ferro-Phototronic Effect**

Yuljae Cho (Shanghai Jiao Tong Univ., China)

[H72-2] 15:15-15:30

**The Ternary Solvent Engineering for Highly Efficient Inverted Perovskite Solar Cells through Controlling the Defect of Grain Boundary and Voids**

Chang Min Lee, Syed Hamad Ullah Shah, Dong Hyun Kim, Tae Wook Kim, Hyun Woo Cho, Yeong Beom Kim, Keum-Jin Ko, P. Justin Jesuraj, and Seung Yoon Ryu (Korea Univ., Korea)

[H72-3] 15:30-15:45

**Hybrid Energy Harvesting System to Improve Power Efficiency of Organic Photovoltaics in Indoor Light Sources through Triboelectric Nanogenerator**

Hyojeong Choi, Selim Han, Jooyeong Kim, Biswas Swarup (Univ. of Seoul, Korea), Dong-Wook Lee (KITECH, Korea), and Hyeok kim (Univ. of Seoul, Korea)

[H72-4] 15:45-16:00

**Enhancement of Near-Infrared Detection in IGZO-Based Phototransistor via NaYF<sub>4</sub>:Yb/Tm Core Upconversion Nanoparticles**

Jong Bin An, Kyung Tae Park, I. Sak Lee, Won-Gi Kim, Jong Hyuk Ahn, Youjin Seo, Ji Yeong Park, and Hyun Jae Kim (Yonsei Univ., Korea)

[H72-5] 16:00-16:15

**A Low Dark Current, Broad-Band Wavelength Photodetector based on CuVO<sub>2</sub> Oxide Semiconductor**

Juhyung Seo, Taehyun Park, Seungme Kang, and Hocheon Yoo (Gachon Univ., Korea)

# IMiD 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	73. Emerging Technologies for QD Display II
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	16:30-17:50
<b>Session Room:</b>	Room A (211~213)
<b>Session Chair(s):</b>	Prof. Jaehoon Lim (Sungkyunkwan Univ., Korea) Prof. Hyunho Lee (Kwangwoon Univ., Korea)

[A73-1] [Invited] 16:30-16:55

## Polarization Effect at the Interface of III-V/II-VI Core/Shell Quantum Dots

Byeong Guk Jeong (Pusan Nat'l Univ., Korea), Doh C. Lee (KAIST, Korea), Euyheon Hwang, and Wan Ki Bae (Sungkyunkwan Univ., Korea)

[A73-2] 16:55-17:10

## Cadmium Reduced QDs for Superior Brightness and Stability within RoHS Limits

Jan S. Niehaus and Sören Becker (Fraunhofer IAP-CAN, Germany)

[A73-3] 17:10-17:25

## A-Site Compositional Engineering of Metal Halide Perovskite Nanocrystals for Efficient and Stable Light-Emitting Diodes

Seon Joo Lee, Gwangil Kim, Hyejin Na, Sungho Choi, and Jaemin Lee (KRICT, Korea)

[A73-4] [Invited] 17:25-17:50

## Comprehensive Review on Emission Structures of Quantum Dot Light-Emitting Diodes

Jaehoon Kim (Dong-A Univ., Korea)



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The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	74. Application of TFTs II
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	16:30-17:55
<b>Session Room:</b>	Room B (214~215)
<b>Session Chair(s):</b>	Dr. Keunwoo Kim (Samsung Display Co., Ltd., Korea) Prof. Byung Seong Bae (Hoseo Univ., Korea)

[B74-1] [Invited] 16:30-16:55

Selectively Defect Controlled Graphene Electrode for High-Performance p-Type Transistors

Tae In Kim (Inha Univ., Korea)

[B74-2] 16:55-17:10

Self-Powered Organic Photodiode for Near-Infrared Sensing with Functional Interlayer

Yongju Lee, Hyowon Jang, Hwapyeong Noh, Swarup Biswas (Univ. of Seoul, Korea), Dong-Wook Lee (KITECH, Korea), and Hyeok Kim (Univ. of Seoul, Korea)

[B74-3] 17:10-17:25

Visible Light Modulated Optical Neuromorphic Transistor based on IGZO with Transition Metal Dichalcogenide Absorption Layer

Hyung Tae Kim, Sujin Jung, Sung Min Rho, Youjin Seo, and Hyun Jae Kim (Yonsei Univ., Korea)

[B74-4] 17:25-17:40

Crystallization by Rapid Thermal Annealing of Ne Sputtered InSb Films Deposited on Glass

Tatsuya Okada, Otokichi Shimoda, C. J. Koswaththage (The Univ. of the Ryukyus, Japan), Takashi Kajiwara, Taizoh Sadoh (Kyushu Univ., Japan), and Takashi Noguchi (The Univ. of the Ryukyus, Japan)

[B74-5] 17:40-17:55

Dipole Doping of PVDF-HFP on IGZO Transistor for Hardware-Based Physically Unclonable Functions from Production to Destruction Security Keys

Subin Lee, Youngmin Han, and Hocheon Yoo (Gachon Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	75. Smart LC Films
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	16:30-18:00
<b>Session Room:</b>	Room C (216)
<b>Session Chair(s):</b>	Prof. Shin Woong Kang (Jeonbuk Nat'l Univ., Korea) Prof. Jin Seog Gwag (Yeungnam Univ., Korea)

[C75-1] [Invited] 16:30-16:55

## The Past and Future of 2D Materials Based Lyotropic Liquid Crystal in Optical Devices

Shen Tianzi, Song Zhe, Jia Huaik, Su Yuyang, and Wang Qionghua (Beihang Univ., China)

[C75-2] [Invited] 16:55-17:20

## The First Flickerless 1 Hz Flexoelectric Fringe-Field Switching LCD

Seung-Hwa Baek, Junho Jung, Jong-Wook Jung, Hee-Jung Park, Dong-Jin Lee (LG Display Co., Ltd., Korea), Sun-Mi Park, Ki-Sun Kwon, Heui-Seok Jin (Merck Performance Materials Ltd., Korea), GwangTae Kim, JeongKi Park (LG Display Co., Ltd., Korea), HanByeol Park, DaYeon Lee, MinSu Kim, and Seung Hee Lee (Jeonbuk Nat'l Univ., Korea)

[C75-3] [Invited] 17:20-17:45

## Engineering Negative Dispersion Retarders Using Various Method

Ji-Hoon Lee (Jeonbuk Nat'l Univ., Korea)

[C75-4] 17:45-18:00

## Liquid Crystal Modulated Dynamic Chiral Meta-Holographic Displays

Hafiz Saad Khaliq (Kyungpook Nat'l Univ., Korea), Junhwa Seong (POSTECH, Korea), Asad Nauman, Jae-Won Lee, Jung-Yeop Shin, Min-Seok Kim (Kyungpook Nat'l Univ., Korea), Junsuk Rho (POSTECH, Korea), and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	76. OLED Devices III
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	16:30-18:05
<b>Session Room:</b>	Room D (217~218)
<b>Session Chair(s):</b>	Prof. Wan Pyo Hong (Gachon Univ., Korea) Dr. Kwan Soo Kim (LG Display Co., Ltd., Korea)

[D76-1] [Invited] 16:30-16:55

Future OLED Devices

Michael S. Weaver (UDC, USA)

[D76-2] 16:55-17:10

Flexibility Enhancement of Thin Film Encapsulation through Defect Engineering Using Reactive Ion Etching

Sooyeon Baek and Kyung Cheol Choi (KAIST, Korea)

[D76-3] 17:10-17:25

Development of Transparent Organic Light Emitting Diode Display Using Liquid Crystal Cell with High Contrast Performance

Chang-Hee Lee, Seongwook Choi, Sung-Hoon Choi, Chang-Soo Lee, Deborah Eric, and Gi-dong Lee (Dong-A Univ., Korea)

[D76-4] [Invited] 17:25-17:50

Direct Exploring Polaron Recombination from Electroluminescence in Organic Light-Emitting Diodes by Artificial Intelligence

Jae-Min Kim, Kyung Hyung Lee, and Jun Yeob Lee (Sungkyunkwan Univ., Korea)

[D76-5] 17:50-18:05

Superbly Long Lifetime over 13,000 h for Multiple Energy Transfer Channels in Deep Blue Phosphorescence Organic Light-Emitting Diodes with Ir Complex under CIE of 0.17

Ki Ju Kim, Hakjun Lee (Hongik Univ., Korea), Sunwoo Kang (Samsung Display Co., Ltd., Korea), and Taekyung Kim (Hongik Univ., Korea)

# IMI D 2023

The 23rd International Meeting on Information Display  
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<b>Session Title:</b>	77. Light Field Applications for AR/VR/MR/3D
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	16:30-17:55
<b>Session Room:</b>	Room E (311~312)
<b>Session Chair(s):</b>	Prof. Takafumi Koike (Hosei Univ., Japan) Dr. Soon-gi Park (LetinAR, Korea)

[E77-1] [Invited] 16:30-16:55

Applications of Light Fields Beyond 3D Displays

Takafumi Koike (Hosei Univ., Japan)

[E77-2] 16:55-17:10

Full-Color 360-Degree Volumetric Cylindrical 3D Display with Anisotropic Diffusing HOE

Hyeonbin Im, Hosung Jeon, Seongju Lee, and Joonku Hahn (Kyungpook Nat'l Univ., Korea)

[E77-3] 17:10-17:25

Compact Design of Hologram Printer for Large-Format and Wide Field-Of-View Holographic Stereograms

Jinwoo Song, Hosung Jeon, and Joonku Hahn (Kyungpook Nat'l Univ., Korea)

[E77-4] 17:25-17:40

Rapid Generation of Physical Hologram with Super-Resolution based on Light Fields

Lingyu Ai (Jiangna Univ., China), Shengjie Ma (Kwangwoon Univ., Korea), and Myungjin Cho (Hankyong Nat'l Univ., Korea)

[E77-5] 17:40-17:55

Evaluation of the Visual Effect of a Blur Filter on a Highly Compressed Stereo Image with a Quality Difference between the Left and Right Images

Naoto Nakayama, Haruki Mizushina, and Kenji Yamamoto (Tokushima Univ., Japan)

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<b>Session Title:</b>	78. Medical/Bio-Integrated Optoelectronics VI
<b>Session Date:</b>	August 25 (Fri.), 2023
<b>Session Time:</b>	16:30-17:40
<b>Session Room:</b>	Room F (313)
<b>Session Chair(s):</b>	Dr. Changsoon Choi (KIST, Korea)

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[F78-1] [Invited] 16:30-16:55

High-Resolution Flexible and Stretchable Displays for Wearable Applications

Moon Kee Choi (UNIST, Korea)

[F78-2] 16:55-17:10

Plasmonic Resonance Energy Transfer of Plasmonic Metasurface Enabling Hyperspectral Molecular Imaging

Hongyoon Kim and Junsuk Rho (POSTECH, Korea)

[F78-3] 17:10-17:25

High-Durability Resistive Random Access Memory based on Lactulose for Bioimplantable Device

Beom Soo Kim, Jong Bin An, Hyung Tae Kim, Dong Hyun Choi, Moon Ho Lee, Sun Min Song, and Hyun Jae Kim (Yonsei Univ., Korea)

[F78-4] 17:25-17:40

Flexible Color Filter Electrodes for a Transparent Red Organic Light Emitting Diode in Biomedical Applications

Young Hun Jung, Byeong Ju Noh, Jun Woo Lee, and Kyung Cheol Choi (KAIST, Korea)

# iMiD 2023

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<b>Session Title:</b>	<b>79. Manufacturing Technology with AI &amp; Simulation</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>16:30-17:50</b>
<b>Session Room:</b>	<b>Room G (314~315)</b>
<b>Session Chair(s):</b>	<b>Dr. Shallon Stubbs (Samsung Display Co., Ltd., Korea) Dr. Hyun Sung Park (Samsung Display Co., Ltd., Korea)</b>

**[G79-1] [Invited] 16:30-16:55**

**CCTV Object Detector Training Using An Hybrid Neural Architectural Search and Transfer Learning Strategy**

Shallon Stubbs, Youngwook Yoo, and Jaewon Kim (Samsung Display Co., Ltd., Korea)

**[G79-2] [Invited] 16:55-17:20**

**Multi-Modal Anomaly Detection for Identifying Display Panel Manufacturing Defects**

Shuhui Qu, Qisen Cheng, and Janghwan Lee (Samsung Display America Lab., USA)

**[G79-3] 17:20-17:35**

**Diffusion-Based Image Generation for Display Defect Detection**

Chang-Heon Lee, Joon-Kyu Kim, and Suk-Ju Kang (Sogang Univ., Korea)

**[G79-4] 17:35-17:50**

**Development of Simulation Methodology for High Vacuum Equipment Design**

Sukbeom You, Donghyun Kim (Samsung Display Co., Ltd., Korea), Geunwoo Oh, Jung-II Choi (Yonsei Univ., Korea), and Dongwon Lee (Samsung Display Co., Ltd., Korea)

# IMiD 2023

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<b>Session Title:</b>	<b>80. Emerging Materials &amp; Devices for Display</b>
<b>Session Date:</b>	<b>August 25 (Fri.), 2023</b>
<b>Session Time:</b>	<b>16:30-17:55</b>
<b>Session Room:</b>	<b>Room H (316~317)</b>
<b>Session Chair(s):</b>	<b>Prof. Sangyeon Pak (Hongik Univ., Korea) Prof. Kibum Kang (KAIST, Korea)</b>

**[H80-1] [Invited] 16:30-16:55**

**Local Structural Motifs Evolution Towards High-Performance Quantum Dot Optoelectronics and Photonics**

Bo Hou (Cardiff Univ., UK)

**[H80-2] 16:55-17:10**

**Research on Bulging Mechanism of Super Clean Foam based on Organic Light-Emitting Diodes**

Yongqiang Du, Huinan Shi, Yang Yang, Kang Li, Shuang Lei, Feifan Li, Qing Gong, Liang Gao, Xu Lu, Changman Kim, and Fei Shang (BOE Tech. Group Co., Ltd., China)

**[H80-3] 17:10-17:25**

**Electrical and Mechanical Properties of Mo-Based Amorphous Alloy for Flexible Display**

JiYeon Ku, Changwoo Jeon, Juho Lee (EML Co., Ltd., Korea), Keum-Hwan Park (KETI, Korea), and Eun Soo Park (EML Co., Ltd., Korea)

**[H80-4] 17:25-17:40**

**Chemical Doping Effect of Multilayer Molybdenum Disulfide Transistor by Soluble Polyimide**

Raksan Ko, Donghyun Lee, and Hocheon Yoo (Gachon Univ., Korea)

**[H80-5] 17:40-17:55**

**Contact Application of Atomic Layer Deposited Semimetal TiS<sub>2</sub> Films for MoS<sub>2</sub>-Based Thin Film Transistor**

Hwi Yoon, Jeongwoo Seo, Sangyoon Lee, Jisang Yoo (Yonsei Univ., Korea), Yunyong Nam, Jun Hyung Lim (Samsung Display Co., Ltd., Korea), Seung-min Chgung, and Hyungjun Kim (Yonsei Univ., Korea)

# IMiD 2023

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<b>Session Title:</b>	<b>P1. Poster Session 1</b>
<b>Session Date:</b>	<b>August 23 (Wed.), 2023</b>
<b>Session Time:</b>	<b>13:20-14:50</b>
<b>Session Room:</b>	<b>Hall 2A</b>

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

## Development of Composite Substrates for Stretchable Transparent Electronics

Min Jae Sung, Jong Ho Lee (KETI, Korea), Sora Jang (Jeonbuk Nat'l Univ., Korea), Chul Jong Han (KETI, Korea), Bum-Joo Lee (Jeonbuk Nat'l Univ., Korea), and Byungwook Yoo (KETI, Korea)

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

## Non-Linear Elastic Properties of OCA for Deformable Display Using Finite Element Method Analysis

Sang Hyun Han, Jun Hyuk Shin, and Su Seok Choi (POSTECH, Korea)

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

## Computational Analysis of Global Deformation of Free from Factor Display Components based on Local Strain Calculation Algorithm

Kang-Han Kim (KITECH, Korea), Kuk Young Cho (Hanyang Univ., Korea), and Yong-Cheol Jeong (KITECH, Korea)

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

## Organic/Inorganic Hard Coating for Anti-Fragile Ultrathin Glass

Hyeongjung Kim, Kang-Han Kim, Min Ju Kong, and Yong-Cheol Jeong (KITECH, Korea)

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

## Tensile Testing of Organic/Inorganic Multi-Barrier for Flexible Displays

Hyeunwoo Kim, Hyeongjun Lee (Sunmoon Univ., Korea), Sun-Woo Lee, Seung Jin Oh (KAIST, Korea), Yongwon Kim, Hyoyeol Ryu (Sunmoon Univ., Korea), Taek-Soo Kim (KAIST, Korea), and Jeong Hyun Kwon (Sunmoon Univ., Korea)



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[P1-006]

13:20-14:50

## Tensile Testing of an Al<sub>2</sub>O<sub>3</sub>/TiO<sub>2</sub> Nanolaminate Fabricated by Low-Temperature ALD

Hyeongjun Lee, Hyeunwoo Kim (Sunmoon Univ., Korea), Seung Jin Oh, Sun-Woo Lee (KAIST, Korea), Hyoyeol Ryu, Yongwon Kim (Sunmoon Univ., Korea), Taek-Soo Kim (KAIST, Korea), and Jeong Hyun Kwon (Sunmoon Univ., Korea)

[P1-007]

13:20-14:50

## Highly Flexible and Simple Fabrication of Textile-Based OLEDs Utilizing Parylene-C Transfer Process

Ha-Eun Cho and Kyung Cheol Choi (KAIST, Korea)

[P1-008]

13:20-14:50

## Glass-Cloth Reinforced Siloxane Composite Structured Film for Protection of Foldable UTG Cover Window

Hyun Seok Kang, Yung Lee, Sehun Park, Geumkyu Yi (KAIST, Korea), Jun-Hyuk Lim, Jihoon Ko (Solip Tech Co., Ltd., Korea), and Byeong-Soo Bae (KAIST, Korea)

[P1-009]

13:20-14:50

## Optimizing Surface Energy of Oxide-Metal-Oxide Electrodes for High-Performance of Stretchable Organic Light-Emitting Diodes

Hyun Woo Cho, Dong Hyun Kim, Chang Min Lee, Tae Wook Kim, Yeong Beom Kim, Syed Hamad Ullah Shah, Keum-Jin Ko, P. Justin Jesuraj, and Seung Yoon Ryu (Korea Univ., Korea)

[P1-010]

13:20-14:50

## Influence of Strain and Capacitance according to Stretching Direction

Min Soo Park, Hyung-Jin Youn, and Sukin Yoon (Sanayi System Co., Ltd., Korea)

[P1-011]

13:20-14:50

## An Optimized Design of Kirigami Structures for Stretchable Electronics

Hakjun Yang, Sang Hyun Han, and Su Seok Choi (POSTECH, Korea)

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[P1-012]

13:20-14:50

**Research on Hybrid Sheets with High EMI Shielding and Heat Dissipation Properties for Foldable Displays**

Tae-Wan Kim, Dong-Hoon Jang, and Kwan-Young Han (Dankook Univ., Korea)

[P1-013]

13:20-14:50

**Analysis of Stress Distribution as Rolling Test Parameter Using Pressure Sensitive Sheet for Rollable Display**

Su Young Yang, Jae Ho Song, Sangwoong Baek, and Chan-Jae Lee (KETI, Korea)

[P1-014]

13:20-14:50

**A New Detachable Substrate Obviating the Need of LLO for Fabricating Flexible Oxide TFT Array**

Ju Hun Lee, Hee-Ok Kim, Jong-Heon Yang, Chi-Sun Hwang, Jae-Eun Pi, Seung-Youl Kang (ETRI, Korea), Wooseok Yang, Taeyeong Yun (KETI, Korea), Seung-Yeon Kim, Young-Ju Choi (EVERCHEMTECH, Korea), and Jaehyun Moon (ETRI, Korea)

[P1-015]

13:20-14:50

**Study on Mechanical Durability and Electrical Reliability of Stretchable IGZO Thin-Film Transistors against Long-Term Repeated Mechanical Stress**

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

[P1-017]

13:20-14:50

**Improvement of the Bias Instability Characteristics driven by Organic Film in IGZO TFT for OLED Back Plane**

Yubeen Lim, Ahrum Sohn, Jung-June Kim, Hanseok Lee, Won-Sang Ryu, Youn-Gyoung Chang, Jiyong Noh, and Kwon-Shik Park (LG Display Co., Ltd., Korea)

[P1-018]

13:20-14:50

**Small-Molecular Charge Injection Layers Regulating Injection Barriers and Their Applications to Organic-Inorganic Complementary Inverters**

Youngmin Han, Seongjae Kim, Chang-Hyun Kim, and Hocheon Yoo (Gachon Univ., Korea)

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[P1-019]

13:20-14:50

Light-Assisted/Light-Driven Memory Behaviors Using C8-BTBT-Fluoropolymer PTCDI-C13 Vertically-Stacked Floating-Gate Heterostructures

Seungme Kang, Seongjae Kim, and Hocheon Yoo (Gachon Univ., Korea)

[P1-020]

13:20-14:50

Fully Self-Aligned Homo-Junction InGaZnO TFTs Enabled by Deep UV- Irradiation Treatment

Xuan Zhang, Dhruv Sharma, and Sung Woon Cho (Suncheon Nat'l Univ., Korea)

[P1-021]

13:20-14:50

Solution-Processed InZnO Thin-Film Transistors for High-Performance and High-Stability Display Backplane

Hyeri Kang, Xuan Zhang, Dhruv Sharma, and Sung Woon Cho (Suncheon Nat'l Univ., Korea)

[P1-022]

13:20-14:50

The Cu<sub>2</sub>O Thin Film Applied to the Degradation of Organic Pollutants by Controlling Potential and pH

Dhruv Sharma, Xuan Zhang, and Sung Woon Cho (Suncheon Nat'l Univ., Korea)

[P1-023]

13:20-14:50

Hole Carriers Transport Enhancement in Inkjet-Printed Single-Walled Carbon Nanotube Transistors by Self-Assembled Monolayer Doping Effect

Dong Hyun Lee (Gachon Univ., Korea), Siwon Hwang, Bongjun Kim (Sookmyung Women's Univ., Korea), and Hocheon Yoo (Gachon Univ., Korea)

[P1-024]

13:20-14:50

Unusual Charge Transport Induced by Ion Migration in Tin-Halide Perovskites

Taewan Roh, Huihui Zhu, Wonryeol Yang, Ao Liu, and Yong-Young Noh (POSTECH, Korea)

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[P1-025]

13:20-14:50

**Improved Surface Uniformity of Spray-Coated Organic Semiconducting Films via Thermally Assisted Reformation**

Dongyeol Seo, Donguk Kim, and Felix Sunjoo Kim (Chung-Ang Univ., Korea)

[P1-026]

13:20-14:50

**High-Performance 2D/3D Hybrid Tin Perovskite Transistors Enabled by Fluorinated Organic Cation**

Wonryeol Yang, Geonwoong Park, Ao Liu (POSTECH, Korea), Hong Beng Lee, Jae-Wook Kang (Jeonbuk Nat'l Univ., Korea), Huihui Zhu, and Yong-Young Noh (POSTECH, Korea)

[P1-027]

13:20-14:50

**Interface Optimization Using Hydrogen-Rich SiO<sub>2</sub> for High Performance InZnO TFTs**

Seong-In Cho and Sang-Hee Ko Park (KAIST, Korea)

[P1-028]

13:20-14:50

**Enhanced Photoresponse in Visible-Light Using a Heterojunction Phototransistor with a Structure of Zr-Doped SnO<sub>2</sub> on IGZO**

Yu Bin Kim, Jun Hyung Jeong, Min Ho Park, Min Gye Kim, Jeong Min Yun, and Seong Jun Kang (Kyung Hee Univ., Korea)

[P1-029]

13:20-14:50

**Highly Transparent Solution Processed Color Cognitive Visible-Light Stimulated IGZO Optoelectronic Synaptic Transistor via Cd Dopant**

Jun Hyung Jeong, Min Ho Park, Jin Hyun Ma, Yu Bin Kim, and Seong Jun Kang (Kyung Hee Univ., Korea)

[P1-030]

13:20-14:50

**Effect of Annealing Temperature on In-Ga-Zn-O Charge Trap-Based Synaptic Transistor**

Junhyeong Park, Yuseong Jang, and Soo-Yeon Lee (Seoul Nat'l Univ., Korea)

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[P1-031]

13:20-14:50

**A Study on the Self-Rectifying TiO<sub>2</sub> Memristor Mechanism Produced by a Vacuum-Free Solution Process**

Min Ho Park and Seong Jun Kang (Kyung Hee Univ., Korea)

[P1-032]

13:20-14:50

**Low-Energy Patternable 3-Dimensional Crosslinkers with Carbene Chemistry for High-Resolution Organic Electronics**

Jiyeon Ha (Hanyang Univ., Korea), Yujin Seong (UNIST, Korea), Hyukmin Kweon, Ukjin Jeong, Seokran Choi, Borina Ha, Soyeon Lee (Hanyang Univ., Korea), BongSoo Kim (UNIST, Korea), and Do Hwan Kim (Hanyang Univ., Korea)

[P1-033]

13:20-14:50

**Rational Design of Iontronic Polymer Semiconductor based on Ion Compatible Photo-Crosslinker**

Hayoung Oh (Hanyang Univ., Korea), Wanho Cho (UNIST, Korea), Hyukmin Kweon, Dong Jun Kim, Ukjin Jeong, Jinmin Park (Hanyang Univ., Korea), BongSoo Kim (UNIST, Korea), and Do Hwan Kim (Hanyang Univ., Korea)

[P1-034]

13:20-14:50

**Pseudo-Halide Engineering for Ultra-High Mobility Perovskite Transistors**

Geonwoong Park, Wonryeol Yang, Ao Liu, and Yong-Young Noh (POSTECH, Korea)

[P1-035]

13:20-14:50

**Degradation Behavior of Amorphous InSnGaZnO Thin Film Transistor under Various DC and AC Gate Bias Stress**

Chankyu Lee and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P1-036]

13:20-14:50

**Water-Processed Dielectric Layer for Eco-Friendly High Performance Organic Thin Film Transistors**

MiRiNae Lee, Youngju Lee, Swarup Biswas (Univ. of Seoul, Korea), Dongwook Lee (KITECH, Korea), and Hyeok Kim (Univ. of Seoul, Korea)

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[P1-037]

13:20-14:50

## Synaptic Transistor based on Tellurium Fabricated by Sputtering at Room Temperature

Seung Min Lee (Chungnam Nat'l Univ., Korea), Su Hyeon Ahn, Hyung Jin Kim (Inha Univ., Korea), and Hyun-suk Kim (Chungnam Nat'l Univ., Korea)

[P1-038]

13:20-14:50

## Solution-Processable Polymer Semiconductor Thin Film Transistors

Seungyeon Koh, HwaPyeong Noh, Yongju Lee, Biswas Swarup, and Hyeok Kim (Univ. of Seoul, Korea)

[P1-039]

13:20-14:50

## Efficient Neuromorphic Computing with Lithium Ion-Based Synaptic Transistors for Low Energy Consumption

Ji-Min Park (Chungnam Nat'l Univ., Korea), Hwiho Hwang, Min Suk Song, Hyungjin Kim (Inha Univ., Korea), and Hyun-Suk Kim (Chungnam Nat'l Univ., Korea)

[P1-040]

13:20-14:50

## NIR Sensing Ambipolar Organic Phototransistor based on Solution Processable N-Type Semiconductor

HwaPyeong Noh, Yongju Lee, Mi Ri Nae Lee, Swarup Biswas (Univ. of Seoul, Korea), Dong-Wook Lee (KITECH, Korea), and Hyeok Kim (Univ. of Seoul, Korea)

[P1-041]

13:20-14:50

## Directly Photo-Patternable High-k Polymer Gate Dielectrics for Future Electronics

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

[P1-042]

13:20-14:50

## Optimizing Characteristics of Indium Gallium Zinc Oxide Thin Film Transistors through Plasma-Enhanced Atomic Layer Deposition

Jaewon Park, Ji-Min Park, Ji-Hyeon Min, and Hyun-suk Kim (Chungnam Nat'l Univ., Korea)

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[P1-044]

13:20-14:50

**Organic Thin Film Transistor based on the Organic-Inorganic Hybrid Ferroelectric Insulator Layer**

Hyowon Jang, Yongju Lee, Swarup Biswas (Univ. of Seoul, Korea), Dong-Wook Lee (KITECH, Korea), and Hyeok Kim (Univ. of Seoul, Korea)

[P1-045]

13:20-14:50

**Highly Photoresponsivity IGZO Ultraviolet Phototransistor via Additional Solution Processed ZnO Nanoparticle Layer**

Jin Hyun Ma, Jun Hyung Jeong, Seong Jae Kang, and Seong Jun Kang (Kyung Hee Univ., Korea)

[P1-046]

13:20-14:50

**A Phototransistor for Performs Artificial Synaptic Action by Controlling Off-Current with Illumination**

Seungme Kang (Gachon Univ., Korea), Byungchul Jang (Kyungpook Nat'l Univ., Korea), Sunyoung Sohn (Sangji Univ., Korea), and Hocheon Yoo (Gachon Univ., Korea)

[P1-047]

13:20-14:50

**Improvement in Performance of  $\alpha$ -IGZTO Transistor via Hydrogen Doping**

Jeonga Lee, Seeun Kim, Cheolhee Choi, and JaeKyeong Jeong (Hangyang Univ., Korea)

[P1-048]

13:20-14:50

**HfZrO<sub>2</sub> Thin-Film Synaptic Transistor Using ALD Process for Advanced Neuromorphic Computing**

Eun Seo Jo and You Seung Rim (Sejong Univ., Korea)

[P1-049]

13:20-14:50

**Ionic Gel/IGZO Hybrid Structure-Based Electric Double-Layer Gated Synaptic Transistor**

Kyong Jae Kim and You Seung Rim (Sejong Univ., Korea)

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[P1-050]

13:20-14:50

## Compositional Tailoring of In-Free GZO Layers by PEALD for Remarkably Stable IGZO/GZO Thin-Film Transistors

Hye-Jin Oh, Yoon-Seo Kim (Hanyang Univ., Korea), Joon Seok Park, Sunhee Lee (Samsung Display Co., Ltd., Korea), Hyun-Jun Jeong, and Jin-Seong Park (Hanyang Univ., Korea)

[P1-051]

13:20-14:50

## Research on Indium-Based Precursor Structural Differences Using PEALD Technology

HoYoung Lee, SeongKyu Kang, and JaeKyeong Jeong (Hanyang Univ., Korea)

[P1-052]

13:20-14:50

## Improving Broadband Detection of Quantum Dot/Oxide Semiconductor Heterojunction Phototransistor through Ga<sub>2</sub>O<sub>3</sub> Passivation Layer

Yongjun Jeong, Junho Lee, Sangyeon Kim, and JaeKyeong Jeong (Hanyang Univ., Korea)

[P1-053]

13:20-14:50

## Drive Current Enhancement of InGaZnO Thin-Film Transistors by Adoption of High-k Gate Dielectric Materials

Jae-Hyeong Park, Kihwan Kim, Hyo-Bae Kim, Ji-Hoon Ahn (Hanyang Univ., Korea), Ju Heyuck Baeck, Jiyong Noh, Kwon-Shik Park (LG Display Co., Ltd., Korea), and Saeroonter Oh (Hanyang Univ., Korea)

[P1-054]

13:20-14:50

## A Study on the Temperature and Time Dependence of Characteristics in Fe-FET Devices

TaeGyu Yang, Heyoung Kang, SeungHee Cha, and JaeKyeong Jeong (Hanyang Univ., Korea)

[P1-055]

13:20-14:50

## Scaling Amorphous Indium-Gallium-Zinc-Tin-Oxide TFTs with High Mobility through Oxygen Partial Pressure Control

Se Eun Kim, Bangju Park, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-056]

13:20-14:50

## A Study of Epitaxial Growth of In-Zn-O via Plasma-Enhanced Atomic Layer Deposition

Seonwoong Bang, Minjae Kim, Yena Kim, and Jae Kyeong Jeong (Hanyang Univ., Korea)



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[P1-057]

13:20-14:50

## High Performance ITZO TFTs with HMDS Passivation

Xinkai Sun, Jidong Jin, Zhenyaun Xiao, and Younghyun Kim (Hanyang Univ., Korea)

[P1-058]

13:20-14:50

## Impact of Atomic-Layer-Deposition Cycle Duty Variation on the Properties and Performance of Indium Gallium Oxide Thin-Film Transistors

Jae Seok Hur, Seong Hun Yoon, Ho Young Lee, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-059]

13:20-14:50

## Optimization of Solution-Processed Amorphous Cadmium Gallium Oxide for High Performance Thin-Film Transistors

Minh Nhut Le, Paul Lee (Sungkyunkwan Univ., Korea), Seung-Han Kang (Chung-Ang Univ., Korea), Kyunghan Ahn (Sungkyunkwan Univ., Korea), Sung Kyu Park (Chung-Ang Univ., Korea), Jaesang Heo (Samsung Display Co., Ltd., Korea), and Myung-Gil Kim (Sungkyunkwan Univ., Korea)

[P1-060]

13:20-14:50

## Semiconducting Polymer Nanostructures for High-Performance All-Polymer Logic Gates in Integrated Circuits

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

[P1-061]

13:20-14:50

## Integration of Zn-ON and Tellurium Thin-Film Transistors Enables Highly Stable CMOS Inverter with Low-Temperature Processing

Joo-On Oh, Muhammad Naqi, and Sunkook Kim (Sungkyunkwan Univ., Korea)

[P1-062]

13:20-14:50

## Balanced Ambipolar Charge Transport Achieved through Bilayer Organic Nanowire Fabrication

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

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[P1-063]

13:20-14:50

**Impedance Analysis of Solution-Processed Amorphous Indium-Gallium-Zinc Oxide Thin Films**

Jaehyun Ahn and Jaewook Jeong (Chungbuk Nat'l Univ., Korea)

[P1-064]

13:20-14:50

**High-Performance p-FETs in WSe<sub>2</sub> Enabled by Oxygen-Substituted Se-Vacancy Healing**

Younghyun Ju, Pavan Pujar, and Sunkook Kim (Sungkyunkwan Univ., Korea)

[P1-065]

13:20-14:50

**Efficiently Formed Pure Orthorhombic-Hf<sub>0.5</sub>Zr<sub>0.5</sub>O<sub>2</sub> for Use in Negative Capacitance Field-Effect Transistors**

Yuseong Lee, Haewon Cho, Pavan Pujar, and Sunkook Kim (Sungkyunkwan Univ., Korea)

[P1-066]

13:20-14:50

**Effectiveness of Utilizing Large-Scale Nonporous Indium-Gallium-Zinc-Oxide (IGZO) for Detecting Visible-To-Near-Infrared (NIR) Light, with the Goal of Improving Image Sensor Circuitry Performance**

Yunjeong Yu, Anamika Sen, and Sunkook Kim (Sungkyunkwan Univ., Korea)

[P1-067]

13:20-14:50

**Fabrication of  $\alpha$ -ITZO Charge-Trapping FET Using Ion-Beam Sputtered Al<sub>2</sub>O<sub>3</sub>/HfO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> for Memory-In-Pixel Display Applications**

Seoung Min Park, Tae Hyeon Noh, and Younghyun Kim (Hanyang Univ., Korea)

[P1-068]

13:20-14:50

**Subgap Engineering based on Sonication for Visible Light Detection of IGZO Phototransistor**

Youjin Seo, Hyung Tae Kim, Sujin Jung, Sung Min Rho, Jong Hyuk Ahn, Kunho Moon, and Hyun Jae Kim (Yonsei Univ., Korea)

[P1-069]

13:20-14:50

**Investigating the Effect of Source and Drain Electrode Materials on the Electrical Characteristics of Amorphous In-Sn-Zn-O Thin-Film Transistors**

Yo Seop Chi, Seong Ui An (Hanyang Univ., Korea), Dae-Hwan Ahn, Jae-Hoon Han (KIST, Korea), and Younghyun Kim (Hanyang Univ., Korea)

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[P1-070]

13:20-14:50

Synaptic Characteristics of Organic Field-Effect-Transistors with a Polymer Charge Trap Layer for Neuromorphic Applications

Hyeona Jo, Hoyoung Cho, Moohyun Kim, So-Young Bak, Danyoung Cha, Moonsuk Yi, Sungsik Lee, and Jeongkyun Roh (Pusan Nat'l Univ., Korea)

[P1-071]

13:20-14:50

Solution-Processed Ternary Oxide Dielectric Thin Films for Thin-Film Transistors Applications

Chaerim Kim, Seokhyeon Baek, Wonsik Kim, Jeongyeon Na, and Sungjun Park (Ajou Univ., Korea)

[P1-072]

13:20-14:50

Hydroxyl Group Free Crosslinked Poly(4-vinylphenol) Gate Dielectric for Hysteresis Free Thin Film Transistor

Nam Woo Kim and Taek Ahn (Kyungsoong Univ., Korea)

[P1-073]

13:20-14:50

Direct Photo-Patternable and Surface Energy Controlled Polyimides as Gate Dielectric for Flexible Display Backplane

Nam Woo Kim and Taek Ahn (Kyungsoong Univ., Korea)

[P1-074]

13:20-14:50

Low-Voltage Operating, Air-Stable Organic Thin Film Transistors with Polymer Gate Insulator Synthesized via Initiated Chemical Vapor Deposition

Jungjun Kim, Taejin Mun, Wonryung Lee, and Hyejeong Seong (KIST, Korea)

[P1-075]

13:20-14:50

Investigation of Trap Density at Polymer-Dielectric Interfaces of Polymeric Field-Effect Transistors with Photo-Induced Charge-Accumulation Spectroscopy

Yu Kang Song, Jaehyun Yu, and Jiyoul Lee (Pukyong Nat'l Univ., Korea)

[P1-076]

13:20-14:50

Device Engineering in Sol-Gel-Based Metal-Oxide Thin-Film Transistors

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

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[P1-077]

13:20-14:50

**Effects of Metal Ion-Doping on the Electrical Characteristics of Oxygen Annealed Metal-Oxide Thin-Film Transistors Operating at Sub-V**

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

[P1-078]

13:20-14:50

**Improvement of Specific Contact Resistivity of Amorphous IGZO Thin-Film Transistors through ALD-AZO Interlayer**

Joo Hee Jeong, Dongseon Kim, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-079]

13:20-14:50

**Low Power Emission Pulse Generation Circuit based on P-Type LTPS TFTs for Active-Matrix Organic Light-Emitting Diode Displays**

Min Kyu Chang, Ji Hoon Kim, Seoyeong Jeong, and Hyongsik Nam (Kyung Hee Univ., Korea)

[P1-080]

13:20-14:50

**A Compact  $\alpha$ -IGZO TFT Pixel Circuit for Micro-LED Displays with Clamped Inverter Structure**

Ji-Hwan Park, Kyeong-Soo Kang, Chanjin Park, and Soo-Yeon Lee (Seoul Nat'l Univ., Korea)

[P1-081]

13:20-14:50

**A New Compact Progressive Emission MicroLED Pixel Circuit with Only Three Scan Signals**

Kyeong-Soo Kang, Ji-Hwan Park, Chanjin Park, and Soo-Yeon Lee (Seoul Nat'l Univ., Korea)

[P1-082]

13:20-14:50

**Just-Noticeable-Difference Applicable for Wide Viewing Distance Range and Extremely Low Luminance**

Chanjin Park, Kyeong-Soo Kang, Ji-Hwan Park, and Soo-Yeon Lee (Seoul Nat'l Univ., Korea)

[P1-083]

13:20-14:50

**High-Reliability Emission Driver Circuit based on Metal Oxide Thin-Film Transistors Using Q Node Separating Structure**

Eun Kyo Jung, Hwarim Im (Sungkyunkwan Univ., Korea), Kyung-Hoon Chung, Haemin Kim (Samsung Display Co., Ltd., Korea), and Yong-Sang Kim (Sungkyunkwan Univ., Korea)

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[P1-084]

13:20-14:50

## Efficient Powering in Display Subsystem Using GaN-Based Ultra-Slim DC-DC Converter

Satoshi Ikeda (Panasonic Corp., Japan), Natsuki Maeda, Kimihiro Nishijima, and Eiji Sakai (Sojo Univ., Japan)

[P1-085]

13:20-14:50

## Novel Vth Compensation Methods Using Body Effect in Micro Display

Qianqian Wang, Gang Chen, Jacob Choi, and Ryan Lee (Meta, USA)

[P1-086]

13:20-14:50

## Driver on Array with Oxide TFT for Narrow Bezel Width

Jang Hoo Lee, Hyuck Su Lee, Seungjae Moon, and Byung Seong Bae (Hoseo Univ., Korea)

[P1-087]

13:20-14:50

## Simple Driving Capacitive Sensor Circuit

Seo Yun Kim, Seo Jin Kang, Hyuck Su Lee, Jang Hoo Lee, Seung Jae Moon, and Byung Seong Bae (Hoseo Univ., Korea)

[P1-088]

13:20-14:50

## A Study on the Application of Convolutional Neural Network in Optical Camera Communication

Jong-In Kim, Hyun-Sun Park, and Jung-Hyun Kim (KOPTI, Korea)

[P1-089]

13:20-14:50

## Low-Temperature Polycrystalline Silicon Thin-Film Transistor-Based Scan Driver Circuit with Multiple Outputs for Mobile Displays

Hye-Won Woo, Eun Kyo Jung, Hwarim Im, and Yong-Sang Kim (Sungkyunkwan Univ., Korea)

[P1-090]

13:20-14:50

## A High-Speed Pixel Circuit based on Low-Temperature Polycrystalline Silicon Thin-Film Transistor Compensable for Threshold Voltage, Mobility Variation, and IR Drop

Han Cheol Lee, Eun Kyo Jung, Hwarim Im, and Yong-Sang Kim (Sungkyunkwan Univ., Korea)

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13:20-14:50

**An Energy-Efficient Display System for AR/VR Applications**

Seokhwan Roh and Byeong-gyu Nam (Chungnam Nat'l Univ., Korea)

[P1-092]

13:20-14:50

**Novel AM-OLED Pixel Circuit Compensating for Threshold Voltage Variations and Depletion Mode of  $\alpha$ -IGZO TFT**

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

[P1-093]

13:20-14:50

**IR LEDs Can Be Used as Both IR Emitters and Sensors**

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

[P1-094]

13:20-14:50

**Remaining Useful Life Prediction through Meaningful Feature Extraction Using SHAP**

Ye-In Park and Suk-Ju Kang (Sogang Univ., Korea)

[P1-095]

13:20-14:50

**Chemical Analysis of Precision Micro PCB by Laser Desorption Ionization Time of Flight Imaging Mass Spectrometer**

Byeong Heon Song, Seung Woo Kim, Hyun Sik Kim (ASTA Inc., Korea), Yong Ho Lee (Korea Research Inst. of Material Property Analysis, Korea), and Jae Cheol Lee (ASTA Inc., Korea)

[P1-096]

13:20-14:50

**Study of OCA-Like Silicone OCR as the Advanced Display Lamination Technology for Various Display Formfactor**

Seung-A Lee (WACKER Chemical Korea Inc., Korea)

[P1-097]

13:20-14:50

**One-Way Observable Aerial Display Using Corner Cube Prisms Doped with Dyestuff or Pigments Which Enable to Make Transparent from Back Side**

Kunio Sakamoto and Shota Shiojiri (Konan Univ., Japan)

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13:20-14:50

**Improvement of Amorphous Silicon Island Conical Protrusion in Thin Film Transistor Channel on G8.6 Large Glass**

Jie Zhang, Hejing Zhang, Fan Yang, Zhen Liu, James Hsu, and Wade Chen (Chongqing HKC Optoelectronics Tech. Co., Ltd., China)

[P1-099]

13:20-14:50

**Improvement of Metal Peeling on Electronic Paper for High Temperature and High Humidity Storage Evaluation**

Junlong Fan, Chunyan Lin, Hejing Zhang, Zhen Liu, James Hsu, and Wade Chen (Chongqing HKC Optoelectronics Tech. Co., Ltd., China)

[P1-100]

13:20-14:50

**A Method and Theoretical Research to Improve the Timeliness of Black Regime and G-Line of G8.6 TFT-LCDs**

Song Sun, Jin-song Lu, Ran-long Wang, Qin Xiong, Deng-li Yao, Kai-jun Liu, Wen-jin Hong, and Zhe-hao Xu (Chongqing HKC Optoelectronics Tech. Co., Ltd., China)

[P1-101]

13:20-14:50

**High Mobility Oxide Thin Film Transistor with Amorphous In-Ga-Sn-O Fabricated by RF-Magnetron Sputtering**

Hyunil Jo, Seong-hun Bae, Juhan Kim, Nayoon Lee, and Young-woo Heo (Kyungpook Nat'l Univ., Korea)

[P1-102]

13:20-14:50

**Study on Plasma-Enhanced Chemical Vapor Deposition Film Fracture Toughness Characteristic and Its Influence to Organic Light-Emitting Display Encapsulation**

Xinwei Gao, Kang Zhao, Shuai Zhang, Peng Li, Kaihong Ma, Huai-Ting Shih, and Jianwei Yu (Hefei BOE Joint Tech. Co., Ltd., China)

[P1-103]

13:20-14:50

**Influence of Low-Pressure Evaporation on Uniform Film Formation**

Seongju Kim and Sungjune Jung (POSTECH, Korea)

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13:20-14:50

## Development of Molybdenum Thin Film Process Using Multi-Rotary Cathode

Yuusuke Ujihara, Atsuo Ono, Tomokazu Suda, Tatsunori Isobe, Masaki Takei, and Junya Kiyota (ULVAC, Inc., Japan)

[P1-105]

13:20-14:50

## Development of Out-Gassing Control System for the High Stability Oxide Semiconductor Deposition Process

Giwoon Sung, Doseon Yu, Jinsoo Park, Youjong Lee, and Myung Soo Huh (Samsung Display Co., Ltd., Korea)

[P1-106]

13:20-14:50

## Hydrogen Content Control in Amorphous Oxide Semiconductors by Buffer Layer Engineering

Seong-Jin Park, Kang Kim, and Sang-Hee Ko Park (KAIST, Korea)

[P1-107]

13:20-14:50

## Hot Implantation for Amorphous-InGaZnO Sheet Resistance Control

Toshimasa Ui, Ryosuke Goto, Yuya Yamane, Tatsuya Morio, Tomokazu Nagao, Keisuke Yasuta, Kenji Watari, Makoto Konushi, Masatoshi Onoda, and Shojiro Dohi (Nissin Ion Equipment Co., Ltd., Japan)

[P1-108]

13:20-14:50

## Development of VUV Light Source for Elimination of Static Charge in Vacuum Process

Donggil Jung and Donghoon Lee (SUNJE R&D Center, Korea)

[P1-109]

13:20-14:50

## Coplanar Asymmetric Nanogap Patterns Obtained by Adhesion Lithography and Their Applications to Versatile Materials-Based Gate-Tunable Schottky Diodes

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

[P1-110]

13:20-14:50

## Optimizing Process Conditions for Peeling Protective Film Using Removal Tape by Finite Element Analysis

Jungsik Nam, Byongug Park, Kyungah Lee, and Hyunjun Kim (Samsung Display Co., Ltd., Korea)



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13:20-14:50

## Optical Monitoring Technology for Flexural Strength of Foldable Glass

Junsu Park, Sangjun Seok, Namhyuk Kim, and Nari Ahn (Samsung Display Co., Ltd., Korea)

[P1-112]

13:20-14:50

## UV Selective Curing Technology in Area Printing Process

Dohun Lee, Taeho Lee, BongSik Noh, and Donghoon Hyun (Samsung Display Co., Ltd., Korea)

[P1-113]

13:20-14:50

## Scalable Manufacturing of Dielectric Metasurfaces through Thermally-Curable Nanocomposite Printing

Hyeonsu Heo, Joohoon Kim, and Junsuk Rho (POSTECH, Korea)

[P1-114]

13:20-14:50

## Development of SIMS Analysis Technology Specialized for Printing Display Panels

Jungsub Hwang, Jihye Lee, Jungwoon Jung, Jaehan Lee, and Nari Ahn (Samsung Display Co., Ltd., Korea)

[P1-115]

13:20-14:50

## Threshold Voltage Control of Oxide Thin-Film Transistor with PN Semiconductor Heterojunction Structure

Jung Hoon Han (Korea Univ., Korea), Sooji Nam, Sung Haeng Cho, Chihun Sung (ETRI, Korea), and Byeong-Kwon Ju (Korea Univ., Korea)

[P1-116]

13:20-14:50

## Flexible OLED Device with Adhesive Interlayer

Su-Min Son, Gun-Young Park, and Cheol-Hee Moon (Hoseo Univ., Korea)

[P1-118]

13:20-14:50

## Application of Adhesion Lithography to Organic/Inorganic Multilayer Thin Film Encapsulation

Seung Woo Lee, Wung Sun Eo, Jun Yeop Lee, Seung Hwa Choi, Sung Kyu Jang, and Sung Min Cho (Sungkyunkwan Univ., Korea)

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13:20-14:50

**Fabrication of Passive-Matrix Organic Light Emitting Diodes by Self-Aligned Imprint Lithography Process**

Han Gil Lee, Yu Rim Jeong, ChangJun No, Changyun Na, Suyoung Kim, and Sung Min Cho (Sungkyunkwan Univ., Korea)

[P1-120]

13:20-14:50

**Nanoscale Engineering of Al-Doped Double-Layered InGaSnO Films for Improving Performance and Bias Stability**

Yubin Park and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P1-121]

13:20-14:50

**Sodium Chloride Dipping Treatment for Performance and Stability Enhancement of Sputtered Amorphous In-Ga-Sn-O Thin Film Transistors**

Saemi Lee and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P1-122]

13:20-14:50

**Influences of Nitrogen Doping on the Device Performance and Stability of InGaSnO TFTs**

Jinha Ryu and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P1-123]

13:20-14:50

**Low-Temperature Fabrication of High Performance  $\alpha$ -InGaZnO/ $\alpha$ -InGaSnO Bilayer Channel TFTs**

Jaewoo Shin and Byoungdeog Choi (Sungkyunkwan Univ., Korea)

[P1-124]

13:20-14:50

**Effect of 2 MHz Frequency Power Applied to the Substrate during SiNx PECVD on TFT Characteristics**

Sejin Ahn, Mingi Kim, Chanho Kim, Woojin Lee, and Sung Min Cho (Sungkyunkwan Univ., Korea)

[P1-125]

13:20-14:50

**Fast Response Time Developed Curved Vertical-Alignment (VA) for High Definition Display**

Chun Ma, An-Thung Cho, Chengyi Huang, James Hsu, and Wade Chen (Chuzhou HKC Optoelectronics Tech. Co., Ltd., China)

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13:20-14:50

**Fabrication and Optimization for Phosphorescent Organic Light-Emitting Diodes with Micro-Size Pixel**

Dongryul Lee, Woojo Kim, and Sungjune Jung (POSTECH, Korea)

[P1-127]

13:20-14:50

**Effect of Selective Atmospheric Argon Plasma Treatment on Amorphous In-Ga-ZnO Thin Film Transistor**

Yong Hyeok Seo, Dong Hyun Lee, Sang Yeon Park, Won Woo Lee, Dongwoon Lee, Hocheon Yoo, Yongmin Jeon, Sang Jik Kwon, and Eou-Sik Cho (Gachon Univ., Korea)

[P1-128]

13:20-14:50

**Liquid Drop Volume Measurement Using Chromatic Confocal Sensor for Inkjet Printing Process**

Jae Bum Pahk, Konta Yu, Lae Ho Kim, and Myung Soo Huh (Samsung Display Co., Ltd., Korea)

[P1-129]

13:20-14:50

**Optimizing IR Blocking Performance of ITO/Ag/ITO Multilayers**

Jung Hyun Jeon, Seung Jae Moon, Jong Mo Lee, and Byung Seong Bae (Hoseo Univ., Korea)

[P1-130]

13:20-14:50

**Contact Resistance and Optical Properties of TCO Electrodes for Transparent Display**

Se Yong Choi, Eun Seong Yu, Seung Jae Moon, Jong Mo Lee, and Byung Seong Bae (Hoseo Univ., Korea)

[P1-131]

13:20-14:50

**Improving the Reliability and Suitability of Oxide Thin-Film Transistors for Low-Voltage Applications**

Seung Jun Choi, Eun Seong Yu, Min Seong Kim, Seung Jae Moon, and Byung Seong Bae (Hoseo Univ., Korea)

[P1-132]

13:20-14:50

**Study for UV Bessel Beam Applications in an OLED Display**

Kyunghan Yoo, Hyungsik Kim, Seunghoon Jang, Sunggyu Park, Junghwa You, Jekil Ryu, Seongho Jeong, and Cheollae Roh (Samsung Display Co., Ltd., Korea)

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## An In-Situ PECVD Process of Stoichiometric SiO<sub>2</sub> Deposition for Semiconductor Devices

Yejin Jeong, Hongrae Kim, Jiwon Choi, Donghyun Oh (Sungkyunkwan Univ., Korea), Yung-Bin Chung, Woo-Seok Jeon, Jungyun Jo (Samsung Display Co., Ltd., Korea), Duy Phong Pham, and Junsin Yi (Sungkyunkwan Univ., Korea)

[P1-134]

13:20-14:50

## Comparing Growth Behaviors of PEALD In<sub>2</sub>O<sub>3</sub> Layer Using Amine and Alkyl Based Novel Indium Precursors

Gyeong Min Jeong, Yoon-Seo Kim, Hae Lin Yang (Hanyang Univ., Korea), Myoungwoon Kim, Sangick Lee, Yonghee Kwone, Sangyong Jeon, Youngjae Im (DNF Co., Ltd., Korea), and Jin-Seong Park (Hanyang Univ., Korea)

[P1-135]

13:20-14:50

## Inspection Methodology of Foreign Material Detection in the Lamination Layer of Mobile Phone

Dowan-Kim, Jichan Jung, Youngjae Lee, Whoyoung Jung, and JangKi Baek (Samsung Display Co., Ltd., Korea)

[P1-137]

13:20-14:50

## Structural Optimization of Slot-Die Head with T-Shaped Manifold for Uniform Coating of Organic Thin Films

Gieun Kim, Mose Jung, Juan Kim, Jeongpil Na, Songeun Hong, and Jongwoon Park (KOREATECH, Korea)

[P1-138]

13:20-14:50

## Fabrication of OLEDs with High-Aspect-Ratio Spherical Microlens Using Needle Coating

Juan Kim, Jeongpil Na, Mose Jung, Songeun Hong, Gieun Kim, and Jongwoon Park (KOREATECH, Korea)

[P1-139]

13:20-14:50

## Impact Strength Simulation of PI (Polyimide) Substrate and UTG (Ultra-Thin Glass) Substrate for the Reliability of Rollable Display

Chaerin Son, Hyojung Son (Kyungpook Nat'l Univ., Korea), Ki-Yong Lee (FlexiGO Inc., Korea) and Byoung-Seong Jeong (Kyungpook Nat'l Univ., Korea)

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13:20-14:50

## Design of an Impact Strength Evaluation Method for Durability of Rollable Displays

Hyojung Son, Chaerin Son, Hyun-Jae Park (Kyungpook Nat'l Univ., Korea), Ki-Yong Lee (FlexiGO Inc., Korea), Byoung-Seong Jeong (Kyungpook Nat'l Univ., Korea)

[P1-141]

13:20-14:50

## A Reflective Bank Structure with 15um Subpixel Pitch for Display Application

Youngji Lim, Yeongbeom Lee, Jeongno Lee, and Chul Jong Han (KETI, Korea)

[P1-142]

13:20-14:50

## Flexible and Transparent Bottom Gate Organic Thin-Film Transistors with Solution Processable Polymer

Yoojeong Ko, Hyo-Won Jang, Hyeok Kim, and Dong-Wook Park (Univ. of Seoul, Korea)

[P1-143]

13:20-14:50

## Virtual Layout with Direction Constraint in Autonomous Mobile Robot Routing

Yonggu Kim, Wenchao Li, Nan Zhang, and Xueming Liu (Samsung Display Co., Ltd., China)

[P1-144]

13:20-14:50

## Biocompatible and flexible PBTTT Organic Thin-Film Transistor Using Parylene-C Substrate and Gate Dielectric

Ah-Hyun Hong, Eunyeong Park, Jinkoo Kim, Hojun Jang, and Dong-Wook Park (Univ. of Seoul, Korea)

[P1-145]

13:20-14:50

## Highly Improved Current Density and Power Conversion Efficiency of Perovskite Solar Cells via Plasma Polymer Fluorocarbon Antireflection Coating

Eunmi Cho, Mac Kim (KRICT, Korea), Jin-Seong Park (Hanyang Univ., Korea), and Sang-Jin Lee (KRICT, Korea)

[P1-146]

13:20-14:50

## Ferroelectric Memory Thin-Film Transistors on Curved Surface Using Micro Contact Printing-Assisted Lift-off Patterning

Subin Hwa, Sungjun Yang, and Min-Hoi Kim (Hanbat Nat'l Univ., Korea)

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## Collimated Organic Molecular Beam Made by Triple Nozzle Evaporator

Sungmoon Kim, Daejoon Chi, Taekgi Lee, Jonghun Jeon, and Jibok Yoo (Depolab Inc., Korea)

[P1-148]

13:20-14:50

## Dispenser Printing and IPL Sintering of AgNW/PEDOT:PSS Composite-Based Transparent Conductive Film for Flexible OLED Application

Youngwook Noh and Kwan Hyun Cho (KITECH, Korea)

[P1-149]

13:20-14:50

## Effective Dry Etching of InGaZnO Thin Films by Inductively Coupled Plasma Reactive Ion Etching Using HCl/A

Changyong Oh, Myeong Woo Ju, Jun Ho Song, and Bo Sung Kim (Korea Univ., Korea)

[P1-150]

13:20-14:50

## Sequential Deposition of Host-Dopant Layers for Doping State Control of OLED with Plane-Source Evaporating System

Ji Hoon Kim, Jeong-Yeol Yoo (Dankook Univ., Korea), Chang Hoon Whang (OLEDON, Korea), and Byung Doo Chin (Dankook Univ., Korea)

[P1-151]

13:20-14:50

## Laser Drilling of High-Aspect Ratio Through-Holes in Glasses for Future Display

Seyeon Hwang, Hyungsik Kim, Woohyun Jung, Seunghoon Jang, Sunggyu Park, Junghwa You, Jungho Kim, Kyunghan Yoo, Kisang Lee, Jekil Ryu, Seongho Jeong, and Cheollae Roh (Samsung Display Co., Ltd., Korea)

[P1-152]

13:20-14:50

## Metal-Assisted Chemical Etching for Fabricating Nanostructures for Display

Jiwon Seok, Jian Cheng Bi, Jun-Young Park, Seo Hyun Song, Sang-Ho Shin, and Byeong-Kwon Ju (Korea Univ., Korea)

[P1-153]

13:20-14:50

## Photocurable Hybrid Polymer Capping for Pixelized Encapsulation, with Application to Stretchable OLED

Jaewan Park, Falguni Ahmed (Korea Univ., Korea), Gerhard Domann, Daniela Collin (Fraunhofer ISC, Germany), and MunPyo Hong (Korea Univ., Korea)

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13:20-14:50

**Large Surface of Nano-Structured ZnO Thin Film Phosphor Fabricated on GZO Substrate for Lighting Application**

Htet Su Wai, Iwasaki Daichi, and Chaoyang Li (Kochi Univ. of Tech., Japan)

[P1-155]

13:20-14:50

**High Performance Green Phosphorescent Emitters Suitable for BT.2020 Color Gamut**

Jing Wang, Ying Hou, Huiqing Pang, Wei Cai, Zheng Wang, Hongbo Li, Zhen Wang, Raymond Kwong, and Sean Xia (Beijing Summer Sprout Tech. Co., Ltd., China)

[P1-156]

13:20-14:50

**Tailoring Absorption Capability of Highly Efficient Green-Emissive ZnSeTe Quantum Dots via Core Size Variation**

Suk-Young Yoon, Yang-Hee Kim, Yongwoo Kim, Goo Min Park, and Heesun Yang (Hongik Univ., Korea)

[P1-157]

13:20-14:50

**High-Performance Blue ZnSeTe Quantum Dot-Light-Emitting Diodes via Heterostructural Variation and Electron Transport Layer Modification**

Yang-Hee Kim, Suk-Young Yoon, Hyun-Min Kim, Dae-Yeon Jo, Hyungmin Yang, Hyo-Jin Yeo, and Heesun Yang (Hongik Univ., Korea)

[P1-158]

13:20-14:50

**Investigating the Elastic Properties of Mixed Halide Organic-Inorganic Perovskites for Optimized Optoelectronic Applications**

Furqanul Hassan Naqvi, Sung Min Park, and Jae Hyeon Ko (Hallym Univ., Korea)

[P1-159]

13:20-14:50

**Dynamic Tuning of Bound States in Continuum via Electrochemical Deposition**

Seokwoo Kim and Junsuk Rho (POSTECH, Korea)

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13:20-14:50

**Highly-Efficient Deep-Red Organic Light-Emitting Devices with Curcuminoid Boron Difluoride Derivatives**

Sunyoung Sohn (Sangji Univ., Korea), Hae Un Kim, Taehyun Kim, Chanhyuk Kim, and Taiho Park (POSTECH, Korea)

[P1-161]

13:20-14:50

**Novel Platinum(II) Complex based on Tetradentate Ligand and High Performance in Blue Phosphorescent Organic Light-Emitting Diodes**

Chan Hee Ryu (Kangwon Nat'l Univ., Korea), Un Hyeok Jo, Jun Yeob Lee (Sungkyunkwan Univ., Korea), and Kang Mun Lee (Kangwon Nat'l Univ., Korea)

[P1-162]

13:20-14:50

**Application of Si<sub>3</sub>N<sub>4</sub> Nanofiber Internal Scattering Layer on Blue Thermally Activated Delayed Fluorescence Organic Light-Emitting Diodes for Enhancing Efficiency and Viewing Angle Characteristics**

Jun-Young Park, Jian Cheng Bi, Seo Hyun Song, Seonghyeon Park (Korea Univ., Korea), Young Wook Park (Sun Moon Univ., Korea), and Byeong-Kwon Ju (Korea Univ., Korea)

[P1-163]

13:20-14:50

**Highly Conductive p-Type Transparent Conducting Electrode with Sulfur-Doped Copper Iodide**

Ga Hye Kim and Myung-Gil Kim (Sungkyunkwan Univ., Korea)

[P1-164]

13:20-14:50

**Composition-Dependent Trapezoidal Quantum Barrier Effect on Efficiency Droop in GaN-Based Light-Emitting Diodes**

Semi Oh, Sehyuk Yeom, Byoungho Kang, Sanghoon Jung, Jaesung Lee, and Wanghoon Lee (GERI, Korea)

[P1-165]

13:20-14:50

**Tailoring Surface States of Indium Phosphide Quantum Dots**

Namyong Gwak, Minwoo Lee, Seungki Shin, and Nuri Oh (Hanyang Univ., Korea)



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13:20-14:50

## Analysis of Temperature-Dependent Piezoelectric Fields in InGaN/GaN-Based Blue Light-Emitting Diodes

Young Kyoung Kim, Chan Geun Park, Sang Jin Min, Jong-In Shim, and Dong-Soo Shin (Education Research Industry Cluster at Ansan, Korea)

[P1-167]

13:20-14:50

## Analysis of Molecular-Oriented and Highly Efficient Organic Photovoltaic Devices

Hoseung Kang, Haechang Jeong, and Sunyoung Sohn (Sangji Univ., Korea)

[P1-168]

13:20-14:50

## GaN-Based Light-Emitting Diodes with Microstructures Fabricated by Direct Optical Wiring Technology

H. Kang, H. Lim (Jeonbuk Nat'l Univ., Korea), C. C. Kim (LESSENGERS Inc., Korea), and J. Cho (Jeonbuk Nat'l Univ., Korea)

[P1-169]

13:20-14:50

## Synthesis of Highly Emissive AgInS<sub>2</sub> Quantum Dots via Ag-to-In Cation Exchange Reaction

Seong Min Park (Hongik Univ., Korea), Kyoungwon Park (KETI, Korea), and Heesun Yang (Hongik Univ., Korea)

[P1-170]

13:20-14:50

## Dispersion Effect of Polymer on Thermally Activated Delayed Fluorescent Organic Light-Emitting Diodes

Jonghyun Choi, Mamatimin Abbas, Laurence Vignau (CNRS, France), and Byeong-Kwon Ju (Korea Univ., Korea)

[P1-171]

13:20-14:50

## Temperature-Dependent Optoelectronic Characteristics of InGaN-And AlGaInP-Based Light-Emitting Diodes

Gyeongdon Kang, Joohan Bae, Sangjin Min, Jong-In Shim, and Dong-Soo Shin (Education Research Industry Cluster at Ansan, Korea)

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13:20-14:50

**A Simple Process to Achieve Stable Green and Red Emitting Lead Free Perovskite for Opto-Electronic Applications**

Subhajit Dutta, Surjeet Kumar, Jung Hyeon Yoo, Seok Bin Kwon, Ho Chan Yoo, and Dae Ho Yoon (Sungkyunkwan Univ., Korea)

[P1-173]

13:20-14:50

**Predicting the Effects of Ligands on Perovskite Nanocrystals via Machine Learning**

Yunseo Lee, Jaeyoung Seo, Hyein Kong, Inyoung Jeong, and Nuri Oh (Hanyang Univ., Korea)

[P1-174]

13:20-14:50

**Synthesis and Characterization of Cs<sub>3</sub>MnBr<sub>5</sub> Luminescence Materials for Application in Lighting and Photodetector**

Jung Hyeon Yoo, Seok Bin Kwon, Ho Chan Yoo, Geon Jong Yu (Sungkyunkwan Univ., Korea), Seung Hee Choi, Young Hyun Song (KOPTI, Korea), and Dae Ho Yoon (Sungkyunkwan Univ., Korea)

[P1-175]

13:20-14:50

**Synthesis of Cs<sub>3</sub>Cu<sub>2</sub>Br<sub>5</sub> and CsBr: Cu Sub-Micron-Sized Particles for Sensor Applications via the Hot-Injection Method**

Ho Chan Yoo, Seok Bin Kwon, Jung Hyeon Yoo, Geon Jong Yu, and Dae Ho Yoon (Sungkyunkwan Univ., Korea)

[P1-176]

13:20-14:50

**Brightness Enhancement Film Technology in Micro LED Display**

Jisu Han, Hyun Woo Jeon, Young Hoon Kim, Taehyoung Kwak, Kwon-Shik Park, and Soo Young Yoon (LG Display Co., Ltd., Korea)

[P1-177]

13:20-14:50

**Impact of the Channel Height for Nanorod Ink on Its Alignment Using Dielectrophoretic Force**

Lia Hong (Sookmyung Women's Univ., Korea), Doheon Koo, Hongyun So (Hanyang Univ., Korea), Woosung Park (Sogang Univ., Korea), Jaebyoung Park (Korea Univ., Korea), and Jeeyoung Shin (Sookmyung Women's Univ., Korea)

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13:20-14:50

## LED Compensation Circuit for Micro-LED Display

Dong-Hun Lee and Yong-Sang Kim (Sungkyunkwan Univ., Korea)

[P1-179]

13:20-14:50

## Surface Current Analysis on Lateral Diffusions of Carriers in Micro-Lightemitting Diodes

Woo Jin Baek, Juhyuk Park, Hyun Soo Kim (KAIST, Korea), Dae-Myeong Geum (Chungbuk Nat'l Univ., Korea), and Sang Hyeon Kim (KAIST, Korea)

[P1-180]

13:20-14:50

## Influence of Various Current-Induced Stresses on the Performances in GaNBased Micro-LEDs

Abu Bashar Mohammad Hamidul Islam, Tae Kyoung Kim, Yu-Jung Cha, Jae Won Seo, Jiun Oh, Minji Kim, Hyeondong Lee (KENTECH, Korea), Dong-Soo Shin, Jong-In Shim (Hanyang Univ., Korea), and Joon Seop Kwak (KENTECH, Korea)

[P1-181]

13:20-14:50

## Wireless Optogenetics for In-Vivo Experiments

Janghoon Joo and Sang Min Won (Sungkyunkwan Univ., Korea)

[P1-182]

13:20-14:50

## A $\mu$ LED Pixel Circuit Using Hybrid Pulse Width Modulation and Pulse Amplitude Modulation Driving Method with Low-Temperature Polycrystalline Oxide TFTs for Smart Watch

Yan Li, Hwarim Im, and Yong-Sang Kim (Sungkyunkwan Univ., Korea)

[P1-183]

13:20-14:50

## A Study on the Transferable Functional Film of Mini LED or Micro

Gwan-Seop Lee, Young-Gyun Kim, Chil-won Lee, and Kwan-Young Han (Dankook Univ., Korea)

[P1-184]

13:20-14:50

## Designing a Lightweight CNN Model for Interactive Display Systems

Jong-In Kim, Hyun-Sun Park, and Jung-Hyun Kim (KOPTI, Korea)

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13:20-14:50

**Universal Transfer Printing via Micro-Vacuum Suction Force for Flexible Optoelectronics**

Sang Hyun Park and Keon Jae Lee (KAIST, Korea)

[P1-186]

13:20-14:50

**Effects of ITO Contact Sizes on Performance of 10X10  $\mu\text{m}^2$  Blue-Light MicroLEDs**

Yu-Hsuan Hsu, Yi-Hsin Lin, and Ray-Hua Horng (Nat'l Yang Ming Chiao Tung Univ., Taiwan)

[P1-187]

13:20-14:50

**Probing Wafer-Enabled Micro LED Electroluminescence Measurement System**

Huijin Kim, Boseong Son, Young-Woong Lee, and Si-Hyun Park (Yeungnam Univ., Korea)

[P1-188]

13:20-14:50

**AI-Driven Pathfinding for Micro-LED Module Repair**

S. H. Noh, C. W. Park, and J. S. Yoo (Chung-Ang Univ., Korea)

[P1-189]

13:20-14:50

**Two-Dimensional Micro-Raman Analysis of Strain Variations Caused by the Sidewall Etching in Micro-Light-Emitting Diodes**

Jiwon Kim, Ilgyu Choi, Jeonghyeon Park, Jawon Kim (Education Research Industry Cluster at Ansan, Korea), Jongkyu Kim (POSTECH, Korea), Dong-Soo Shin, and Jong-In Shim (Education Research Industry Cluster at Ansan)

[P1-190]

13:20-14:50

**Micro LED Color Conversion Technique with Red Nano Phosphor**

Yusup Shin, MinJae Kang, Myungsoo Han, and YongSeok Kwak (LG Display Co., Ltd., Korea)

[P1-191]

13:20-14:50

**Micro LED Chip Defect Type Prediction by Using Photoluminescence**

Hyowon Kwon, Myungsoo Han, and Il-soo Kim (LG Display Co., Ltd., Korea)

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13:20-14:50

**Wide-Temperature Range Gamma Compensation of Organic-Light Emitting Devices for Automotive Display Application**

Xing Huang, Bing Zhang, Zi-Liang Xue, and Bin-Feng Feng (BOE Tech. Group Co., Ltd., China)

[P1-193]

13:20-14:50

**Effect of Horizontal Orientation of Sensitizer Molecule to Förster Energy Transfer in Hyper-Fluorescent Organic Light-Emitting Diodes**

Junseop Lim (Sungkyunkwan Univ., Korea), Kyu Young Hwang, Seung-Yeon Kwak (Samsung Electronics Co., Ltd., Korea), Jae-Min Kim, and Jun Yeob Lee (Sungkyunkwan Univ., Korea)

[P1-194]

13:20-14:50

**A Single Emitting Layer White Emission from Blue OLED Utilizing Blue Light Leakage Passing through the Quantum Dot Color Conversion Layer**

Yeonju Jeong and Taekyung Kim (Hongik Univ., Korea)

[P1-195]

13:20-14:50

**Over 18% of Fluorescent OLEDs via an Additional Triplet Harvesting Channel Using Novel MR-TADF Hosts**

Jaesung Kim (Hongik Univ., Korea), Jin Yeong Heo (Sungkyunkwan Univ., Korea), You na Song (Hongik Univ., Korea), Seung Soo Yoon (Sungkyunkwan Univ., Korea), and Taekyung Kim (Hongik Univ., Korea)

[P1-196]

13:20-14:50

**An Ultra-Thin Inorganic-Only Film for OLED Encapsulation**

Wenqi Liu, Zhongyuan Sun, Zhiqiang Jiao, Che An, Jianye Zhang, Huajie Yan, Jinxiang Xue, Weijie Wang, Fengjie zhang, and Guangcai Yuan (BOE Tech. Group Co., Ltd., China)

[P1-197]

13:20-14:50

**High Efficiency over 15% by Breaking the Theoretical Efficiency Limit of Fluorescent Organic Light-Emitting Diodes with Localized Plasmon Resonance Effects**

Hakjun Lee, Hyewon Nam, Hyo-Jin Ye, and Taekyung Kim (Hongik Univ., Korea)

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13:20-14:50

**Intermolecular Interaction based on Molecular Geometry of Hosts and Pt Complexes for White Organic Light-Emitting Diodes**

Hyewon Nam, Ki Ju Kim, and Taekyung Kim (Hongik Univ., Korea)

[P1-199]

13:20-14:50

**Low Pixel Blur Light Extraction Film for Organic Light Emitting Diodes Using AAO Template**

Jinhwa Kim, Baeksang Sung, Sora Han, Dasol Kim, Seung Wan Woo, Jooho Lee, So-Young Boo, Hyun-Bin Kim, Jae-Young Park, Somi Park, Seung-Yo Baek (Hanbat Nat'l Univ., Korea), Chul Woong Joo (ETRI, Korea), Jae-Hyun Lee, and Jonghee Lee (Hanbat Nat'l Univ., Korea)

[P1-200]

13:20-14:50

**Eco-Friendly External Light Extraction Films for Enhanced Out-Coupling Efficiency of Organic Light Emitting Diodes**

Sora Han, Baeksang Sung, Dasol Kim, Jinhwa Kim, Seung Wan Woo, Jooho Lee, Seung-Yo Baek, Mijin Won (Hanbat Nat'l Univ., Korea), Chul Woong Joo (ETRI, Korea), Joo Won Han, Yong-Hyun Kim (Pukyong Nat'l Univ., Korea), Dongsoo Kim, Jae-Hyun Lee, and Jonghee Lee (Hanbat Nat'l Univ., Korea)

[P1-201]

13:20-14:50

**Investigation of Triplet Exciton Dynamics for Efficiency Enhancement Layers**

Bum Joon Park (Hongik Univ., Korea), Gyeong Seok Lee (Gyeongsang Nat'l Univ., Korea), Ki Ju Kim (Hongik Univ., Korea), Yun-Hi Kim (Gyeongsang Nat'l Univ., Korea), and Taekyung Kim (Hongik Univ., Korea)

[P1-202]

13:20-14:50

**Investigation of Blue Organic Light-Emitting Diode Using Dinuclear Pt(II) Complex with Exceptionally Fast Radiative Decay**

Kyo Min Hwang (Hongik Univ., Korea), Gyeong Seok Lee (Gyeongsang Nat'l Univ., Korea), Seonghwan Hong, Yeonju Jeong (Hongik Univ., Korea), Chang Eun Choi (Gyeongsang Nat'l Univ., Korea), Young Kwan Kim (Hongik Univ., Korea), Yun-Hi Kim (Gyeongsang Nat'l Univ., Korea), and Taekyung Kim (Hongik Univ., Korea)

[P1-203]

13:20-14:50

**Solution Processed Blue Organic Light Emitting Diode with Novel Structured Pt Complex for a Phosphor-Sensitized Fluorescence**

Hee Won Son and Min Chul Suh (Kyung Hee Univ., Korea)

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13:20-14:50

**Cross-Linkable Hole Transport Copolymer with High Mobility for Improving Interface Stability in Solution-Processed OLEDs**

Yerin Kim, Thi Na Le, and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-205]

13:20-14:50

**Effect of Host Polarity on Efficiency of Thermally Activated Delayed Fluorescent and Hyperfluorescent Organic Light Emitting Devices**

Ajay Nimbalkar, Da Hwan Lee, and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-206]

13:20-14:50

**A Study on New Solvent Resistant Cross-Linked Polymer as Electron Injection Layer in Inverted OLED**

Aqsa Irfan, Thi Na Le, and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-207]

13:20-14:50

**New Electron Injection Material for Preventing Cathode Shrinkage in Top Emission OLED**

Ramachandran Elumalai, Thi Na Le (Kyung Hee Univ., Korea), Yeonhwa Lee, Seung Yong Song (Samsung Display Co., Ltd., Korea), and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-208]

13:20-14:50

**Organic Color-Conversion Media with High Blue Absorption Coefficients**

Shou-Cheng Dong, Bryan Siu Ting Tam, and Ching W. Tang (Hong Kong Univ. of Science and Tech., Hong Kong)

[P1-209]

13:20-14:50

**Highly Improved Viewing Angle Properties of Top-Emission Microcavity Effect OLEDs with Micro Lens Array**

Jiho Roh, Kwan Sik Yoon, Tae Young Kim, and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-210]

13:20-14:50

**Exciton Dissociation in Differently Oriented Phthalocyanine Molecules**

Hui Ung Hwang, Subeen Kim, and Jeong Won Kim (KRISS, Korea)

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13:20-14:50

## The Overshooting Effect of Double Electron Transport Layers based on Depth Profile

Yerin Kim, Ajay Nimbalkar, Thi Na Le, Kyu Myung Lee, Yongsup Park, and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-212]

13:20-14:50

## Enhancement of Light Extraction of Thermally Activated Delayed Fluorescence Organic Light-Emitting Diodes based on Light Scattering by Using TiO<sub>2</sub> Nanoparticles Embedded Thin Film Encapsulation

Jian Cheng Bi, Jun-Young Park, Jiwon Seok, Byeongwoo Kang, Jong Seong Lee (Korea Univ., Korea), Young Wook Park (Sun Moon Univ., Korea), and Byeong-Kwon Ju (Korea Univ., Korea)

[P1-213]

13:20-14:50

## Enhanced Electrical Properties of OLED by Controlling Molecular Ordering

Seok Je Lee, Woo Young Kim, and Chul Gyu Jhun (Hoseo Univ., Korea)

[P1-214]

13:20-14:50

## Optical Thin Film Encapsulation Design for Improving Color Purity of Green Microcavity Top-Emitting Organic Light-Emitting Diodes

Jun Yong Kim (Kyungpook Nat'l Univ., Korea), Sang Youn Lee, Kwan Hyun Cho (KITECH, Korea), and Yun Seon Do (Kyungpook Nat'l Univ., Korea)

[P1-215]

13:20-14:50

## Utilized N-Type Exciplex Host for Improving Efficiency and Lifetime of Blue Phosphorescent Organic Light Emitting Diodes

Hye Rin Kim, Subramanian Muruganantham, Jun Hyeog Oh, and Jang Hyuk Kwon (Kyung Hee Univ., Korea)

[P1-216]

13:20-14:50

## Solution-Processed Organic Light-Emitting Devices with Sensitizers

Qin Xue (Central China Normal Univ., China) and Guohua Xie (Xiamen Univ., China)



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13:20-14:50

**Charge Balance Control with Bipolar Copolymer Host Compositing of Indenocarbazole and Triazine Units for Efficient Solution-Processed OLED**

Thi Na Le (Kyung Hee Univ., Korea), Jaewan Mo, Haechan Kim, Jihoon Lee (Korea Nat'l Univ. of Transportation, Korea), and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-218]

13:20-14:50

**Optimization of Bank Components Using SiO<sub>2</sub> the Next Generation OLED Display**

Shin-Wook Kang, Ji-Hoon Park, and Kwan-Young Han (Dankook Univ., Korea)

[P1-219]

13:20-14:50

**Expanded Multiple-Resonance Structure for Highly Efficient and Narrowband Deep-Blue Organic Light-Emitting Diodes**

Jihoon Kang (Sungkyunkwan Univ., Korea), Soon Ok Jeon (Samsung Electronics Co., Ltd., Korea), Ha Lim Lee, Junseop Lim, Unhyeok Jo, and Jun Yeob Lee (Sungkyunkwan Univ., Korea)

[P1-220]

13:20-14:50

**Mg:Ag Thin Film Characteristics of Various Deposition Ratio Monitored at QCM and Application to Transparent Cathode for TEOLED**

Dongwoon Lee, Yong Hyeok Seo, Young Woo Kim, Minseong Park, Yeji Shin, Eou-Sik Cho, Yongmin Jeon, and Sang Jik Kwon (Gachon Univ., Korea)

[P1-221]

13:20-14:50

**Highly Efficient Solution Processed Blue Hyperfluorescent OLED Device with MR TADF Material as a Final Dopant**

Hee Tae Yang, Thi Na Le (Kyung Hee Univ., Korea), Yun-Hi Kim (Gyeongsang Nat'l Univ., Korea), and Min Chul Suh (Kyung Hee Univ., Korea)

[P1-222]

13:20-14:50

**Investigation of Triplet-Induced Annihilation in Phosphorescent and Thermally Activated Delayed Fluorescent Organic Light-Emitting Diodes**

Jixin Jiang and Jun Yeob Lee (Sungkyunkwan Univ., Korea)

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13:20-14:50

**Ultra-High Resolution Organic Light-Emitting Diodes Combined with Plasmonic Nanomesh Electrodes**

Ryungyu Lee, Keun-Yeong Choi, and Hojin Lee (Soongsil Univ., Korea)

[P1-224]

13:20-14:50

**Analysis of Interfacial Charges in Aged Co-Host EML TADF Organic Light-Emitting Diodes with Impedance Spectroscopy**

Jae-yong Park, So-Young Boo, Somi Park, Eun-Jeong Jang, Akeem Raji, Jonghee Lee, and Jae-Hyun Lee (Hanbat Nat'l Univ., Korea)

[P1-225]

13:20-14:50

**Fabrication of Microscale-Level Structures and Sub-Micron Thin Film on OLEDs Using Inkjet Printing Process**

Dasol Kim, Chul Woong Joo, Hyunsu Cho, Sukyung Choi, Chan-mo Kang, Jin-Wook Shin, Dae Hyun Ahn, Hyungwoo Suh, Seung Wan Woo, Nam Sung Cho, Chun won Byun (ETRI, Korea), Jonghee Lee (Hanbat Nat'l Univ., Korea), and Byoung-Hwa Kwon (ETRI, Korea)

[P1-226]

13:20-14:50

**Charge Generation Effect as a Key Factor in CGL Unit of Organic Light Emitting Diode**

Tae Ho Seol, Deborah Eric (Dong-A Univ., Korea), Shin Han Kim (Yonsei Univ., Korea), Chang-Hee Lee, and Gi-dong Lee (Dong-A Univ., Korea)

[P1-227]

13:20-14:50

**Effect of Doping Concentration of Emission Layer on the Molecular Orientation**

Chang-Soo Lee, Chang-Hee Lee, Sung Hoon Choi, and Gi-dong Lee (Dong-A Univ., Korea)

[P1-228]

13:20-14:50

**Analysis of the Characteristics of Organic Light-Emitting Diodes (OLEDs) with Single and Mixed Host EML by Impedance Spectroscopy**

Akeem Raji, Su-Ji Kim, Akpeko Gasonoo, Jonghee Lee, and Jae-Hyun Lee (Hanbat Nat'l Univ., Korea)

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13:20-14:50

**Improvement of Color Gamut of QLED by Minimizing Blue Leakage with Patterned Absorption Dye**

So-Young Sim, Cheong-Min Shin, Jae-Hoon Kim, and Chang-Jae Yu (Hanyang Univ., Korea)

[P1-230]

13:20-14:50

**Inkjet Pixel Printing with Bipolar Host Combination and Solvent Formulation of Phosphorescent OLED Emitters**

Song Hee Kang, Eun Young Lee, Yoon-Jeong Choi, and Byung Doo Chin (Dankook Univ., Korea)

[P1-231]

13:20-14:50

**Solution-Processed Organic Light-Emitting Diodes Using Cross-Linkable Hole Transporting Material**

Woosum Cho, Hee Jeong Park, Yongseok Yoo, Sungkoo Lee, and Seunghwan Bae (KITECH, Korea)

[P1-232]

13:20-14:50

**Exploring the Impact of n-Dopant in Charge Generation Layer for Voltage Reduction in Tandem Organic Light Emitting Diodes**

Deborah Eric (Dong-A Univ., Korea), Shin Han Kim (Yonsei Univ., Korea), Tae Ho Seol, Chang-Hee Lee, and Gi-Dong Lee (Dong-A Univ., Korea)

[P1-233]

13:20-14:50

**Study of Current- and Temperature-Dependent Efficiency Droops of OLEDs**

Subin Choi, Sangjin Min, Ilgyu Choi, Jong-In Shim, and Dong-Soo Shin (Hanyang Univ., Korea)

[P1-234]

13:20-14:50

**Trimethylsilyl-Substituted Tetradentate Pt(II) Complex: A Promising Candidate for Achieving High Efficiency Deep-Blue Phosphorescent Organic Light Emitting Diodes**

Seo-Hee Jung (Inha Univ., Korea), Do-Hoon Hwang (Pusan Nat'l Univ., Korea), and Jeong-Hwan Lee (Inha Univ., Korea)

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13:20-14:50

**$\pi$ -Expanded Boron-Carbonyl Hybrid Acceptors for Efficient Thermally Activated Delayed Fluorescence-Organic Light Emitting Diodes Controlling Local Triplet Excited States**

Jee-Hun Jang (Inha Univ., Korea), Jaehoon Jung, Min Hyung Lee (Univ. of Ulsan, Korea), and Jeong-Hwan Lee (Inha Univ., Korea)

[P1-236]

13:20-14:50

**Improved Efficiency and Lifetime of Blue Phosphorescent OLEDs based on Bicarbazole-Triazine Hybrid Type Mixed Host Materials**

Seung-Hyun Baek and Jeong-Hwan Lee (Inha Univ., Korea)

[P1-237]

13:20-14:50

**Analysis of Spontaneous Orientation Polarization in Co-Host EML Organic Light-Emitting Diodes with Impedance Spectroscopy**

So-Young Boo, Jae-Yong Park, Somi Park, Eun-Jeong Jang, Akeem Raji, Jonghee Lee, and Jae-Hyun Lee (Hanbat Nat'l Univ., Korea)

[P1-238]

13:20-14:50

**A Novel Spread Spectrum on Average Time-Based**

Min-woo kim, Jiwon Kim, and Kyunghwan Moon (Samsung Display Co., Ltd., Korea)

[P1-240]

13:20-14:50

**Thin-Film Transistor based on Wavy Structure for Stretchable Display**

Jeong Eun Oh, Jinwon Bak, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-241]

13:20-14:50

**Correlation of Density of States and Low Frequency Noise in  $\alpha$ -IGZO Thin-Film Transistor**

Kanghyun Kim (Samsung Display Co., Ltd., Korea), In Kyu Yoon, Dong Hyun Kim, Dong Geun Park, Jung Chun Kim, Seo Yeon Choi, Ki Seok Heo, Sang Hyeok Kim, So Mi Lee (Korea Univ., Korea), Young-Gil Park, Na Ri Ahn (Samsung Display Co., Ltd., Korea), and Jae Woo Lee (Korea Univ., Korea)

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13:20-14:50

**Multiple Channel Layer of Indium-Based Oxide Semiconductor for High-Performance Thin-Film Transistors Fabricated by PEALD**

Cheol Hee Choi (Hanyang Univ., Korea), Min Hoe Cho (Samsung Display Co., Ltd., Korea), Jihwan Choi, Chanwoo Jung, and Jae Kyeong Jeong (Hanyang Univ., Korea)

[P1-243]

13:20-14:50

**Optimized Combustion Process for Low-Voltage  $\text{Si}_x\text{Sn}_y\text{O}$  Thin-Film Transistors**

Candell Grace Paredes Quino, Juan Paolo Bermundo, and Yukiharu Uraoka (Nara Inst. of Science and Tech., Japan)

[P1-244]

13:20-14:50

**Effects of An  $\text{AlO}_x$  Passivation Layer on Solution-Processed Amorphous Indium Gallium-Zinc-Oxide TFT**

Jinyeong Lee and Jaewook Jeong (Chungbuk Nat'l Univ., Korea)

[P1-245]

13:20-14:50

**Oxide Transistor Based Optoelectronic Synapses with Micro LEDs**

Yu-Jung Cha, Abu Bashar Mohammad Hamidul Islam, Tae Kyoung Kim, Joon Seop Kwak (KENTECH, Korea), and Sung Woon Cho (Sunchon Nat'l Univ., Korea)

[P1-246]

13:20-14:50

**Effective Approach to Failure Analysis of IC-Embedded OLED Display Device**

Hoseok Song, Kiwon Lee, and Jungho Choi (Samsung Display Co., Ltd., Korea)

[P1-247]

13:20-14:50

**Improvement of  $\text{TaO}_x$  Memristor Variability by Bottom Electrode Surface Morphology Modulation**

Moonkee Choi, Wooho Ham, and Jang-Yeon Kwon (Yonsei Univ., Korea)

[P1-248]

13:20-14:50

**Skin-Healable Snail Secretion Based Neuromorphic Device for Intelligent Display**

Kyungho Park, Dong Hyun Choi, Jusung Chung, Kyungmoon Kwak, Jong Bin An, Jae Seong Han, and Hyun Jae Kim (Yonsei Univ., Korea)

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13:20-14:50

**Ni-Based Elastic Metal Alloy Dry Etching for High Resolution Stretchable AMOLED at Low Temperature**

Donghoon kim (Korea Univ., Korea), Jin-nyoung Jan (Advanced Material Transfer Evaluation Center, Korea), and Munpyo Hong (Korea Univ., Korea)

[P1-250]

13:20-14:50

**Adhesion and Coating Performance Improvement of Glass Through Carbon Radical Flame Surface Treatment with Special Organic Reagent**

Gun Dae Lee, Dong Hoon Lee, Sae Rin Chun (Pukyong Univ., Korea), Seung June Lee, and Jaewoo Cho (Sunje Hitek Co., Ltd., Korea)

[P1-251]

13:20-14:50

**Insight into the Jetting Behavior based on the Analysis of Waveform for Inkjet OCR**

Hyunchul Kang, Jeongin Lee, and Kicheol Song (Samsung Display Co., Ltd., Korea)

[P1-252]

13:20-14:50

**Correlation between Post-Deposition Annealing and Reliability of ITZO Thin-Film Transistor**

DongWook Shin, Sein Lee, and Jang-Yeon Kwon (Yonsei Univ., Korea)

[P1-253]

13:20-14:50

**Universal Delamination Method for Stretchable Substrates by Combining Dextran Sacrificial Layer with Capillary-Assisted Electrochemical Reaction**

Minkyun Kang, Jinsu Yoon, Jong Ho Park, and Yongtaek Hong (Seoul Nat'l Univ., Korea)

[P1-254]

13:20-14:50

**Nondestructive Optical Monitoring of the Hardness of Cardo Acrylate Polymers Containing Colored Pigments Using Ellipsometry**

YongWoo Lee (Hanyang Univ., Korea), NakCho Choi, DongIl-Yoo, HyeRyoung Park, SangHwan Cho (Samsung Display Co., Ltd., Korea), and MinJe Ko (Hanyang Univ., Korea)

[P1-255]

13:20-14:50

**Donor-Acceptor-Donor Hosts for Realizing Efficient Red Phosphorescent OLEDs**

Yi-Ting Chen, Pin-Yin Huang, Kuan-Yu Su, Yi-Qi Chao (Yuan Ze Univ., Taiwan), Tsz Chung Yiu, Premkumar Gnanasekaran, Yun-Zi Zeng, Yu-Ting Lin, Yuan Jay Chang (Tunghai Univ., Taiwan), and Chih-Hao Chang (Yuan Ze Univ., Taiwan)

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## Benzothiazole-Based Bipolar Hosts Used for Advancing Highly Efficient Tandem OLEDs

Pin-Yin Huang, Yi-Ting Chen, Jui-Ming Wang, Ting-Chun Lee, Chia-Chen Chung (Yuan Ze Univ., Taiwan), Wun-Yu Chen, Sih-Yu Wu, Yan-Ding Lin, Chin-Wei Lu (Providence Univ., Taiwan), and Chih-Hao Chang (Yuan Ze Univ., Taiwan)

[P1-257]

13:20-14:50

## Shaping of Spectral Profiles to Near-Infrared Wavelengths by Using Transparent Electrodes Embedded with Metal Nanoparticles in OLEDs

Yi-Ting Chen, Pin-Yin Huang, Ming-Jun Lin, Jui-Ming Wang, and Chih-Hao Chang (Yuan Ze Univ., Taiwan)

[P1-258]

13:20-14:50

## Encapsulation Assisted In-Situ Synthesis of Stable CsPbBr<sub>3</sub> Light Emitters

Jinwoo Park, Kyung Yeon Jang, Song Hee Lee, Dong-Hyeok Kim (Seoul Nat'l Univ., Korea), So-Hye Cho (KIST, Korea), and Tae-Woo Lee (Seoul Nat'l Univ., Korea)

[P1-259]

13:20-14:50

## Wrap-Around Electrodes and Black Organic Layer for Micro LED Tiled Displays

Nakcho Choi, Sangwoo An, Jaechil Hwang, and Jaebeom Choi (Samsung Display Co., Ltd., Korea)

[P1-260]

13:20-14:50

## Controlling Van Der Waals Forces Through Shape Memory Effect for Precise Large-Scale Transfer Printing of Micro-LEDs

Junhyung Kim, Seungbeom Kim, and Seok Kim (POSTECH, Korea)

[P1-261]

13:20-14:50

## Enhanced Hole Injection Property of Inverted Organic Light-Emitting Diodes by Changing Thickness of MoO<sub>3</sub> Layer

Kanghoon Kim, Sung-Cheon Kang, Eunyong Choi, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

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13:20-14:50

## Separatrix between the High PPI and Low PPI Area of UDC Display

Jun-hui Lou, Ru-bo Xing, Feng-zhang Hu, Meng Zhang, and Ling-xiao Du (Yungu (Gu'an) Tech. Co., Ltd., China)

[P1-263]

13:20-14:50

## Relationship between Current Density and Electroluminescence Intensity for Degraded OLED Analyzed via DCM-JVL Measurements

Masaru Inoue (TOYOTech LLC, USA), Noriaki Oyabu (TOYO Corp., Japan), and Hideyuki Murata (Japan Advanced Inst. of Science and Tech., Japan)

[P1-264]

13:20-14:50

## Improvement of Inverted Organic Light Emitting Diodes Performance by Using ZnO/Cs<sub>2</sub>CO<sub>3</sub>Electron Injection Layer

Sung-Cheon Kang, Eun-young Choi, Kanghoon Kim, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[P1-265]

13:20-14:50

## Recombination Zone Shift According to the Ratio of Donor and Acceptor of Complex Hos

Eun-young Choi, Sung-Cheon Kang, Kanghoon Kim, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[P1-266]

13:20-14:50

## A Study on the Energy Transfer Dynamics According to the Ratio of Mixed Host in Multi-Emissive Layer of Organic Light-Emitting Diodes.

You Na Song, Hakjun Lee, and Taekyung Kim (Hongik Univ., Korea)



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<b>Session Title:</b>	P2. Poster Session 2
<b>Session Date:</b>	August 24 (Thu.), 2023
<b>Session Time:</b>	14:00-15:30
<b>Session Room:</b>	Hall 2A

[P2-001] 14:00-15:30

## Artificially Intelligent Photonic Synapse with Structurally Controllable Perovskite Nanocones

Woojoong Kim, Kyuho Lee, Jihye Jang, Seonju Lee, Jong Woong Park, Jioh Yoo, and Cheolmin Park (Yonsei Univ., Korea)

[P2-002] 14:00-15:30

## PCB Power Pattern Design Optimized by AI Technologies in Display

Hyo-chul Lee, Ji-won Kim, Youn-yeek Kang, Seung-in Baek, and Sung-chan Jo (Samsung Display Co., Ltd., Korea)

[P2-003] 14:00-15:30

## Library Integrated Automation Design Solution for Fast PCB Design

Sung-kwon Kim, Jun-seok Lee, Ji-won Kim, Seungin Baek, and Sungchan Jo (Samsung Display Co., Ltd., Korea)

[P2-004] 14:00-15:30

## Design of Spatiotemporally Correlated Propagation-Invariant Plasmonic Pulse in Metal-Insulator-Metal Waveguide

Eui-Soo Cho and Seung-Yeol Lee (Kyungpook Nat'l Univ., Korea)

[P2-005] 14:00-15:30

## Analysis for Optimum Eye-Diagram Margin of Display PCB Critical Net

Youn-yeek Kang, Hyo-chul Lee, Ji-won Kim, Seung-in Baek, and Sung-chan Jo (Samsung Display Co., Ltd., Korea)

[P2-006] 14:00-15:30

## Deep Learning-Based Defect Map Classification and Similarity Search in Display Manufacturing

Seokyeon Yang and Jaeho Jeong (Samsung Display Co., Ltd., Korea)

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[P2-007]

14:00-15:30

## Layout Optimization for High Resolution Display

Jihoon Yang, Yujin Lee, Seonyoung Choi, Bonyong Koo, and Sanghwan Cho (Samsung Display Co., Ltd., Korea)

[P2-008]

14:00-15:30

## Enhanced Light-Field Image Resolution and Viewing Angle for Multi-Plane Holographic Images

Dong-ha Shin and Seung-Yeol Lee (Kyungpook Nat'l Univ., Korea)

[P2-009]

14:00-15:30

## AI-Based Similar Pattern Extraction for Design Document Automation

Sangu Lee, Taeseok Jeong, Byeonggeon Ko, Hyunyoung Choi, and Hyunguk Cho (Samsung Display Co., Ltd., Korea)

[P2-010]

14:00-15:30

## 3D Reconstruction for Integral Imaging Microscopy System Using Deep Neural Networks

Shariar Md Imtiaz, Anar Khuderchuluun, F M Fahmid Hossain, Munkh-Uchral Erdenebat, Ki-Chul Kwon (Chungbuk Nat'l Univ., Korea), Sang-Keun Gil (Suwon Univ., Korea), and Nam Kim (Chungbuk Nat'l Univ., Korea)

[P2-011]

14:00-15:30

## Development of Molecular Structure-Property Database Using NLP

Jaehoon Sim, Dongsun Yoo, Eunkyung Koh, Hoilim Kim, Seungin Baek, and Sungchan Jo (Samsung Display Co., Ltd., Korea)

[P2-012]

14:00-15:30

## A System for Material Design based on AI and Simulations

Gyeongheon Kim, Hoilim Kim, Dongsun Yoo, Seran Kim, Jihye Kim, Saerom Park, Hyunguk Cho, Jintaek Cho, Yongsub Shim, and Seungin Baek (Samsung Display Co., Ltd., Korea)

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[P2-013]

14:00-15:30

**Machine-Learning-Based Prediction of Optical and Electrical Characteristics of Silver Nanowire Transparent Electrode without Measurement**

Yewon Han and Kunsik An (Konkuk Univ., Korea)

[P2-014]

14:00-15:30

**Nonlinear Signal Compensation of Active Pen Using Machine Learning**

Kyounghun Been, Hoeung Lee, Hyunsoo Yeom, and JungBong Lee (Samsung Display Co., Ltd., Korea)

[P2-015]

14:00-15:30

**Development of Methodology of Real-Time Power Consumption Analysis for Predicting Heat Generation of Display Panels**

Dongha Kim, Jung Ki Shin, Seungman Baek, Daeyong Kim, Jangwoo Kim, and Sung Chan Jo (Samsung Display Co., Ltd., Korea)

[P2-016]

14:00-15:30

**Temperature-Dependent Vapor Pressure Prediction based on Machine Learning**

Jihye Kim, Dongsun Yoo, Sohae Kim, Saena Yun, Eunkyung Koh, Hoilim Kim, Seungin Baek, and Sungchan Jo (Samsung Display Co., Ltd., Korea)

[P2-017]

14:00-15:30

**Prediction of Image Quality Characteristics Using Machine Learning**

Yongbin Kim, Hyunyoung Choi, Hyunguk Cho, and Sungchan Jo (Samsung Display Co., Ltd., Korea)

[P2-018]

14:00-15:30

**Feasibility Study on Joule Heating Method for Removal of Organic Material to Prevent Current Leakage in Display Panels**

Jung Ki Shin, Gunshik Kim, Seungman Baek, Jangwoo Kim, and Sung Chan Jo (Samsung Display Co., Ltd., Korea)

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[P2-019]

14:00-15:30

**Optimal Design Search Method Using Convolutional Neural Network Based Parasitic Capacitance Extraction Model**

Keuk Jin Jeong, Wongyun Kim, Min Kang, and Sang-Hwan Cho (Samsung Display Co., Ltd., Korea)

[P2-020]

14:00-15:30

**Developing Neural Network Potentials for Understanding Atomistic-Scale GaN m-Surfaces after Wet Etching for Micro-LEDs**

Purun-hanul Kim (Seoul Nat'l Univ., Korea), Youngho Kang (Incheon Nat'l Univ., Korea), and Seungwu Han (Seoul Nat'l Univ., Korea)

[P2-021]

14:00-15:30

**Inverse Design of InP/ZnSe/ZnS Quantum Dots based on Tandem Deep Neural Networks**

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

[P2-022]

14:00-15:30

**Prediction of Droplet Behavior in Piezoelectric Inkjet Printing based on Waveguide Theory**

Taeho Yang, Jongho Park, and Hyungkeon Cho (Samsung Display Co., Ltd., Korea)

[P2-023]

14:00-15:30

**Modeling of Charged Particles Behavior and Distribution in Calculated Electric Field**

Young-Gu Kang, Hyun Sung Park, HyeonDo Park, Yudeok Seo, and Sung-Chan Jo (Samsung Display Co., Ltd., Korea)

[P2-024]

14:00-15:30

**Applying Influence Range to Under-Display Camera Image Restoration**

Kyusu Ahn, Byeonghyun Ko, Hyungyu Lee, Chanwoo Park, and Jaejin Lee (Seoul Nat'l Univ., Korea)

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[P2-025]

14:00-15:30

**Angle Insensitive Meta-Surface Color Filters Designed by Integrating Genetic Algorithms with Deep Neural Networks**

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

[P2-026]

14:00-15:30

**Artificial Intelligence Based Virtual Colour Measurement of OLED Panels**

Chang Sub Park, Seong Il Cho, Seung Wook Lee, and Sang Rak Son (Samsung Display Co., Ltd., Korea)

[P2-027]

14:00-15:30

**UDC Aperture Optimization for Improving Camera Characteristic**

Jaebum Cho, Sujin Choi, Daewook Kim, Hyunjoo Hwang, Jewon Yoo, Seungin Baek, and Sung-Chan Jo (Samsung Display Co., Ltd., Korea)

[P2-028]

14:00-15:30

**OLED Pixel Design by an Automatic Placement and Routing Methodology**

Dongil Yoo, TaeHyun Kim, Jungsuk Bang, Myunghun Lim, Yongwoo Lee, and SangHwan Cho (Samsung Display Co., Ltd., Korea)

[P2-029]

14:00-15:30

**An Implementation of a Natural Language Processing Model with a Custom-Built Chemical Patent Database for OLEDs**

Sohae Kim, Hyun Young Choi, Jihye Kim, and Won-Hyouk Jang (Samsung Display Co., Ltd., Korea)

[P2-030]

14:00-15:30

**Sparse-Matrix-Based Algorithm for IR Drop Analysis in Large-Size Organic Light Emitting Diode Displays**

Qibin Feng, Hongtao Ren (Hefei Univ. of Tech., China), Jianwei Yu, Yongqian Li (Hefei Xinsheng Optoelectronics Tech. Co., Ltd., China), Zi Wang, and Guoqiang Lv (Hefei Univ. of Tech., China)

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[P2-031]

14:00-15:30

## Multi-Physical Approach for Contact-Electrification Issue in OLED Manufacturing Process

Hyun Sung Park, Hyeoseok Na, Sooyong Park, Young-Gu Kang, Hyeondo Park, Dongjin Seo, Yudeok Seo, and Sung-Chan Jo (Samsung Display Co., Ltd., Korea)

[P2-032]

14:00-15:30

## Optimizing COP Bending Path for Flexible OLED Manufacturing Using an AI Prediction System

Sungmin Choi, Hanki Park, Jongnam Lee, and Yeol Choi (Samsung Display Co., Ltd., Korea)

[P2-033]

14:00-15:30

## Development of Simulator for QD Optical Characteristics with Arbitrary 3D Shape

Hyung Uk Cho, Bowoon Kim, Jintaek Cho, Richard James, Seungin Baek, Sung-Chan Jo, and Changhee Lee (Samsung Display Co., Ltd., Korea)

[P2-034]

14:00-15:30

## A Study on the Methodology for Maximizing the Chucking Force of Electrostatic Chuck in Large Glass Deposition Process

Hyeon-do Park, Hyun Sung Park, Young-Gu Kang, Yudeok Seo, and Sung-Chan Jo (Samsung Display Co., Ltd., Korea)

[P2-035]

14:00-15:30

## Aerial Signs Using Quasi-Spatial Floating Image Generated by Optical Illusion Object Maskings Which Block Holographic Recorded Surface Light Sources

Kunio Sakamoto and Ryota Yamamoto (Konan Univ., Japan)

[P2-036]

14:00-15:30

## Directional Characteristics of OLED Film Type Panel Speaker

JeongMan Lee, JaeHong Kim, and JangJin Yoo (LG Display Co., Ltd., Korea)

[P2-037]

14:00-15:30

## Analysis of the Relationship between Cybersickness and Vestibular System Using Finite Element Method

Si On Cha, Sang Yeon Park, and Wook Sung Kim (POSTECH, Korea)

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[P2-038]

14:00-15:30

## Turn-Table Geometry Correction System for 3D Registration

Hyunmin Kang and Sungsu Woo (XR Device Development Support Center, Korea)

[P2-039]

14:00-15:30

## A Study on the Necessity of Setting the Interpupillary Distance Using the Chart in the Condition of Binocular Fusion Removed during Viewing VR

Sejun Moon, MinJi Gil (Catholic Kwandong Univ., Korea), Hyungki Hong (Seoul Nat'l Univ., Korea), and Hyungoo Kang (Catholic Kwandong Univ., Korea)

[P2-040]

14:00-15:30

## Predicting Display Flicker at a Low Frequency Using Temporal Contrast

Youra Kim, Hyosun Kim, Hyungsuk Hwang, Youngwoo Yi, Jaejoong Kwon, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P2-041]

14:00-15:30

## Flickering Perception in a Multitasking Environment

Jieun Cho, Jeunghwan Choi, Cheongil Kim (Yonsei Univ., Korea), Hyosun Kim, Yongjo Kim, Jaejoong Kwon (Samsung Display Co., Ltd., Korea), Jeong Hyeon Park, and Sang Chul Chong (Yonsei Univ., Korea)

[P2-042]

14:00-15:30

## Applying Vignetting Implemented through the Average Vector of Reversed Optical Flow to Frames with Depth of Field for Cybersickness Mitigation in Virtual Reality

Sang Yeon Park, Si On Cha, and Wook Sung Kim (POSTECH, Korea)

[P2-043]

14:00-15:30

## Design and Optimization of All-Dielectric Metasurfaces for Asymmetric Transmission Properties at Visible Wavelengths

Younghak Lee, Sungeun Park, and Wooksung Kim (POSTECH, Korea)

[P2-044]

14:00-15:30

## Research on Transparent Screens Using Transmission-Type Holographic Optical Elements (HOEs)

Jae Gwan Choi (XR Device Development Support Center, Korea)

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[P2-045]

14:00-15:30

## Comparison of Imaging Distances for Underwater and Aerial Images by AIRR

Ryosuke Ichikawa, Kohei Kishinami, Daiki Kudo, Kengo Fujii, Masaki Yasugi, Shiro Suyama, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P2-046]

14:00-15:30

## Color Gamut Change by Electrical Crosstalk in High-Resolution Organic Light Emitting Diode Microdisplays

Yeonsu Hwang, Haneul Kang (Sookmyung Women's Univ., Korea), Chan-mo Kang, Joo Yeon Kim, Chul Woong Joo, Jin-Wook Shin (ETRI, Korea), Soobin Sim (Sookmyung Women's Univ., Korea), Hyunsu Cho, Dae Hyun Ahn, Nam Sung Cho (ETRI, Korea), Hyoc Min Youn, Young Jae An, Jin Sun Kim (DONGJIN SEMICHEM CO., LTD., Korea), Chun-Won Byun (ETRI, Korea), and Hyunkoo Lee (Sookmyung Women's Univ., Korea)

[P2-047]

14:00-15:30

## Ultra-Wideband Indoor Positioning Using Deep Learning for Integrating Real and Virtual Classroom

Taeyun Kim and Wooksung Kim (POSTECH, Korea)

[P2-048]

14:00-15:30

## Evaluation of Appropriate Feedbacks on Operating Aerial Display in Three Senses: Tactile by Vibration to Sole of Foot, Visual, and Auditory

Yasunori Terao, Haruki Mizushina, and Kenji Yamamoto (Tokushima Univ., Japan)

[P2-049]

14:00-15:30

## Testbed of Various Tiling Patterns of Retro-Reflector in AIRR

Takeru Nishiyama, Shin Hara, Kengo Fujii, Masaki Yasugi, Shiro Suyama, Tomoharu Ishikawa, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P2-050]

14:00-15:30

## Varifocal-Occlusion Supported Near-Eye Display Using Stack of Geometric Phase Lenses and Electrically Switchable Half Wave Plate

Woongseob Han (Inha Univ., Korea), Jae-Won Lee, Jung-Yeop Shin (Kyungpook Nat'l Univ., Korea), Myeong-Ho Choi (Inha Univ., Korea), Hak-Rin Kim (Kyungpook Nat'l Univ., Korea), and Jae-Hyeung Park (Inha Univ., Korea)



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[P2-051]

14:00-15:30

**Twin Noise Reduction of Optical Reconstruction with Phase-Only Spatial Light Modulator**

Gunhee Lee, Woonchan Moon, and Joonku Hahn (Kyungpook Nat'l Univ., Korea)

[P2-052]

14:00-15:30

**Measurement of Distortion of a Large Acrylic Beam Splitter in AIRR by Use of 3D Motion Capture**

Mayu Adachi, Masaki Yasugi, Shiro Suyama, and Hirotugu Yamamoto (Utsunomiya Univ., Japan)

[P2-053]

14:00-15:30

**Removal of Dark Lines Caused by Tiling of Retro-Reflector in a Large-Scale Aerial Display with AIRR**

Takumi Watanabe, Kengo Fujii, Masaki Yasugi, Shiro Suyama, and Hirotugu Yamamoto (Utsunomiya Univ., Japan)

[P2-054]

14:00-15:30

**Acceptable Maximum Pixel Pitch Between Light-Emitting Parts of LED Banner Display Using Aerial Imaging**

Daichi Tasaki (Utsunomiya Univ., Japan), Akinori Tsuji (Tokushima Univ., Japan), Toyotaro Tokimoto, Shiro Suyama, and Hirotugu Yamamoto (Utsunomiya Univ., Japan)

[P2-055]

14:00-15:30

**Automatic Keystone Correction for Projectors with Pan/Tilt/Roll**

Wook Hong, Hokwon Kim, Bonggu Hwang, and Joon Goo Lee (RAONTECH, Korea)

[P2-056]

14:00-15:30

**One-Way Observable Window Signage Using Structural Colors by Interference Fringes Which Enable to Make Images Invisible from Back Side**

Kunio Sakamoto and Keiichiro Tamano (Konan Univ., Japan)

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[P2-057]

14:00-15:30

**Light-Induced and Gate-Tunable Negative Differential Resistance Utilizing Counter Flow Region in Ambipolar Behavior**

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

[P2-059]

14:00-15:30

**Defense System Against Machine Learning Attacks of Physical Unclonable Functions Implemented in a Non-Destructive Analysis**

Subin Lee, Minseo Kim, and Hocheon Yoo (Gachon Univ., Korea)

[P2-060]

14:00-15:30

**Highly Efficient Top-Emitting Infrared-to-Visible Up-Conversion Device Using Micro-Cavity Effect**

Jiho Roh (Kyung Hee Univ., Korea), Chanwoo Lim (KIST, Korea), Minchul Suh (Kyung Hee Univ., Korea), and Hyeonggeun Yu (KIST, Korea)

[P2-061]

14:00-15:30

**Investigation of Charge Transport in Organic Heterojunction Transistors through Utilization of Semiconducting Small Molecules**

Youngmin Han, Chang-Hyun Kim, and Hocheon Yoo (Gachon Univ., Korea)

[P2-062]

14:00-15:30

**Magnetophoresis-Based 3D Motion-Tracking Electroluminescent Display**

Jong Woong Park (Yonsei Univ, Korea), Seungwon Lee (Northwestern Univ., USA), Jihye Jang, Jioh Yoo, Woojoong Kim, Seonju Lee, and Cheolmin Park (Yonsei Univ, Korea)

[P2-063]

14:00-15:30

**MXene-Silver Nanowires Based Work Function-Tunable Electrode for High Performance Flexible Solution-Processed Quantum Dot Light-Emitting Diodes**

Jioh Yoo, Wei Jiang, Jihye Jang, Jong Woong Park, Woojoong Kim, Seonju Lee, and Cheolmin Park (Yonsei Univ., Korea)

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[P2-064]

14:00-15:30

**Capacitive E-Switching Block Copolymer Photonic Crystal Display with Humidity Controller**

Seonju Lee, Jihye Jang, Jong Woong Park, Woojoong Kim, Jioh Yoo, and Cheolmin Park (Yonsei Univ., Korea)

[P2-065]

14:00-15:30

**Systematic Study of the Various Dopant Materials of Charge Generation Layer for Efficient Tandem Organic Light Emitting Device**

Yo-Han Suh, Geunhyuck Ji, Il-Gu Kim, Ho-Chang Yang, and Seung Hyun Lee (KETI, Korea)

[P2-066]

14:00-15:30

**Electrical and Mechanical Properties of Al-Based Amorphous Alloy for Flexible Electrode Applications**

Changwoo Jeon, Eun-Soo Park (EML Co., Ltd., Korea), Woosuk Seo, Tae-Ho Lee (Samsung Display Co., Ltd., Korea), and Keum-Hwan Park (KETI, Korea)

[P2-067]

14:00-15:30

**Physical Unclonable Function based on C8-BTBT Thickness Generating Multiple Security Keys**

Jihyun Shin, Subin Lee, and Hocheon Yoo (Gachon Univ., Korea)

[P2-068]

14:00-15:30

**Localization of Piezoelectric Speaker on Display Using an Enclosed Diaphragm**

In Pyo Hong and Su Seok Choi (POSTECH, Korea)

[P2-069]

14:00-15:30

**A Printable Platform for Creating High-Efficiency Metasurfaces in the Deep-Ultraviolet Region Using a Single-Step Approach**

Dohyun Kang, Joohoon Kim, and Junsuk Rho (POSTECH, Korea)

[P2-070]

14:00-15:30

**A Study on TiN Anode in Micro Display**

Changho Lee, Junghwa Park, Mihyang Sheen, Jaehan Lee, and Nari Ahn (Samsung Display Co., Ltd., Korea)

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[P2-071]

14:00-15:30

**Low-Temperature Gas Sensing based on Solution-Processed Tin Oxide Nanoparticles/Silicon Heterojunction Optical Gas Sensor with Fast Response**

Jisoo Park, Taehyun Park, and Hocheon Yoo (Gachon Univ., Korea)

[P2-072]

14:00-15:30

**Color Filter Made with Fabry-Perot Cavity-Type Electrochromic Materials**

Jugyeong Lee (Pukyong Nat'l Univ., Korea), Juhyun Park, Sangkyu Lee (ETRI, Korea), ChilSeong Ah, Jiyoung Oh (Pukyong Nat'l Univ., Korea), Doohee Cho (ETRI, Korea), Jongsu Kim (Pukyong Nat'l Univ., Korea), and Tae-Youb Kim (ETRI, Korea)

[P2-073]

14:00-15:30

**High Color Purity Plasmonic Color Filter with Fabry-Perot Interferometer**

Hyo Jong Cho and Yun Seon Do (Kyungpook Nat'l Univ., Korea)

[P2-074]

14:00-15:30

**Variable Transmittance from VIS to SWIR Region of ECD**

Sangkyu Lee, Juhyun Park, Ju gyeong Lee, Chil Seong Ah, Jiyoung Oh, Doohee Cho, and Tae-Youb Kim (ETRI, Korea)

[P2-075]

14:00-15:30

**Facilitating Wireless Stand-Alone Trimodal Interactive Display through Direct Capacitive Coupling**

Jihye Jang, Jong Woong Park, Jioh Yoo, Seonju Lee, Woojoong Kim, and Cheolmin Park (Yonsei Univ., Korea)

[P2-076]

14:00-15:30

**Metal Mesh Electrode-Based Infrared Transmittance Variable Electrochromic Device**

Ju Hyun Park (Korea Univ., Korea), Jiyoung Oh, Chil Seong Ah, Sangkyu Lee, Ju Gyeong Lee, Doo-Hee Cho (ETRI, Korea), Byeong-Kwon Ju (Korea Univ., Korea), and Tae-Youb Kim (ETRI, Korea)

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[P2-077]

14:00-15:30

**The Properties of Perhydropolysilazane-Derived Silica Layer Treated by Intense Pulsed UV Light for Functional Optical Films**

Jeong Ju Baek, Eun Young An, Ki Cheol Chang, and Gyo Jic Shin (KITECH, Korea)

[P2-078]

14:00-15:30

**Maximizing Ternary-Based Photo Absorption to Improve Organic Photovoltaics Efficiency**

Selim Han, Hyojeong Choi, Jooyeong Kim, Swarup Biswas (Univ. of Seoul, Korea), Dongwook Lee (KITECH, Korea), and Hyeok Kim (Univ. of Seoul, Korea)

[P2-079]

14:00-15:30

**High-Resolution, Low-Temperature-Processed Distributed Bragg Reflector for Efficient Quantum Dot-Organic Light-Emitting Diode (QD-OLED) Displays**

Seung Wan Woo, Hyunsu Cho, Sukyung Choi, Jin-Wook Shin, Gi Heon Kim, Nam Sung Cho (ETRI, Korea), Hyoc Min Youn, Jin Sun Kim, Young Jae An (DONGJIN SEMICHEM Co., Ltd., Korea), Jonghee Lee (Hanbat Nat'l Univ., Korea), and Chan-mo Kang (ETRI, Korea)

[P2-080]

14:00-15:30

**Large-Area Organic Photovoltaics for Indoor Applications**

Jooyeong Kim, Hyojeong Choi, Selim Han, Biswas Swarup (Univ. of Seoul, Korea), Dong-Wook Lee (KITECH, Korea), and Hyeok Kim (Univ. of Seoul, Korea)

[P2-081]

14:00-15:30

**Laser-Reduced Graphene Oxide/Polymer Blends for Black Matrix Application**

Yekang Ku, Soobin Sim, Suhyun Park (Sookmyung Women's Univ., Korea), Hanyung Jung (Korea Polytechnics, Korea), and Hyunkoo Lee (Sookmyung Women's Univ., Korea)

[P2-082]

14:00-15:30

**Novel Multilayer High Performance Charge Trapping HfAlO Nonvolatile Memory based on ALD-Assisted Interface Engineering**

Yifan Hu, Jaewoong Cho, Suresh Kumar Dhungel, Duy Phong Pham, Fucheng Wang, and Junsin Yi (Sungkyunkwan Univ., Korea)

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[P2-083]

14:00-15:30

**A Study on High Efficiency And High Reliability Aluminum Solder Ball For Display Panel**

Yeo-Min Yoon, Jong-Keun Choi, and Kwan-Young Han (Dankook Univ., Korea)

[P2-084]

14:00-15:30

**Enhanced Mechanical Stability and Performance of Ag Flake-Based Stretchable Conductive Adhesives for Next-Generation Healthcare Monitoring System**

Jun-Young Jeon and Heesuk Kim (KIST, Korea)

[P2-085]

14:00-15:30

**Inverted OLEDs with ZnO Nanoparticles Electron Injection Layer**

Go-Eun Kim, Sang-Uk Byun, Hwan-Jin Yoo, Se-Jin Lim, Da-Young Park, and Dae-Gyu Moon (Soonchunhyang Univ., Korea)

[P2-086]

14:00-15:30

**Fabrication of Nanostructured Parylene-C Films for Enhanced Optical Properties of Displays**

Hyun-Bin Kim, Seung-Yo Baek, Baeksang Sung, Jonghee Lee, and Jae-Hyun Lee (Hanbat Nat'l Univ., Korea)

[P2-087]

14:00-15:30

**Characteristics Evaluation of Siloxane-Based Photosensitive Low-Temperature Curable Overcoat Materials for Touch Sensor on Thin Film Encapsulation**

Dongyoung Shim, Il-ji Bae (KETI, Korea), Sun Yu (Herachem Tech. Co., Ltd., Korea), and Sun Hong Yoon (KETI, Korea)

[P2-088]

14:00-15:30

**Hierarchical Wrinkled Architecture with Ultrathin Plasma Polymer Fluorocarbon Film and Its Applications to Transparent/Conformal Triboelectric Nanogenerator**

Eunmi Cho, Mac Kim (KRICT, Korea), Jin-Seong Park (Hanyang Univ., Korea), and Sang-Jin Lee (KRICT, Korea)

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[P2-089]

14:00-15:30

**Low-Temperature Fabrication Of  $\text{In}_2\text{O}_3$  Nanofibers Using Electrospinning For Flexible Electronic**

Cao Van Thu, Tan Tan Bui, Le Minh Nhut, and Myung-Gil Kim (Sungkyunkwan Univ., Korea)

[P2-090]

14:00-15:30

**Halide Perovskite Quantum Dot Down Conversion Organic Light-Emitting Diode for Pure Green/Red Emission Source**

Ji-Hoon Choi, Hyunsu Cho, Stephy Jose, Chang Mo Kang, Sukyung Choi, Dae Hyun Ahn, Byoung-Hwa Kwon, Jin-Wook Shin, Kukjoo Kim, Chul Woong Joo, Jae-Eun Pi, Chunwon Byun, Nam Sung Cho, and Joo Yeon Kim (ETRI, Korea)

[P2-091]

14:00-15:30

**Analysis of Deformation of Thin Polyimide Film by Pre-Strained Silicone Elastomer**

Falguni Ahmed, SeungMin Shin, Joonho Song (Korea Univ., Korea), Jung Yup Kim, Ah-Young Park (KIMM, Korea), and MunPyo Hong (Korea Univ., Korea)

[P2-092]

14:00-15:30

**Characterization and Optical Applications of Multilayer Visible Parylene Films**

Seung-Yo Baek, Ye-Seul Lee, Hyun-Bin Kim, Akeem Raji, Jonghee Lee, and Jae-Hyun Lee (Hanbat Nat'l Univ., Korea)

[P2-093]

14:00-15:30

**Patternable Cul Arrays for Multimodal Sensor Application**

Mokurala Krishnaiah, Ajit Kumar, Bidyashakti Dash, Geun Lee, Hyeon-Bin Jo, Hyeonjong Lee, and Sung Hun Jin (Incheon Nat'l Univ., Korea)

[P2-094]

14:00-15:30

**Arc Discharge Detection with Self-Powered Vertical Metal-Semiconductor-Metal Photodetectors based on Asymmetric Schottky Junctions**

Wangmyung Choi, Taehyun Park, Hocheon Yoo, and Jaehyun Hur (Gachon Univ., Korea)

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[P2-095]

14:00-15:30

**Co-Passivation Engineering for Highly Stable Tin-Based Perovskite Solar Cells by Fullerene Derivative-Based Additives**

Jinhyeok Choi and Kilwon Cho (POSTECH, Korea)

[P2-096]

14:00-15:30

**Suppressing Dopant-Induced Disorder to Improve the Electrical Performance of Doped Organic Semiconductors**

Jimin Kim, Duckhyun Ju, and Kilwon Cho (POSTECH, Korea)

[P2-097]

14:00-15:30

**Fabrication of Ferroelectric Al/HZO/ITO Capacitor on a Glass Substrate for Display Application**

Taewon Jin, Hyo-Bae Kim, Ji-Hoon Ahn, and Younghyun Kim (Hanyang Univ., Korea)

[P2-098]

14:00-15:30

**Ethanol Dispersed NiO Nanoparticle for Hole Injection Layer of Quantum Dots LED**

Hyojun Lim, Sunwoo Jin, Dang Thi Huong Thao, Nayoon Lee, Juhan Kim, Hyunil Jo, and Young-Woo Heo (Kyungpook Nat'l Univ., Korea)

[P2-099]

14:00-15:30

**P-Type CuOx-Based Resistive Random Access Memory (RRAM) for Interactive Flexible Flatpanel Display Application**

Chang Woo Seo, Su Hyun Cho, Hyeonjong Lee, Geun Lee, and Sung Hun Jin (Incheon Nat'l Univ., Korea)

[P2-100]

14:00-15:30

**Ruggedizing Adhesion Strength of Polymer-Stabilized Liquid Crystal Smart Windows**

HanByeol Park, Gyuri Choi, Jisu Kim, MinSu Kim, and Seung Hee Lee (Jeonbuk Nat'l Univ., Korea)

[P2-101]

14:00-15:30

**Minimizing Light Leakage in Homogeneously Aligned Liquid Crystal Displays with Vertically Aligned Dichroic Dyes**

Hyun Soo Jeon, Minu Ju, Yeon Jin Han, Young Jin Lim, MinSu Kim, and Seung Hee Lee (Jeonbuk Nat'l Univ., Korea)



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[P2-102]

14:00-15:30

## High Transmittance Electrophoretic Carbon Black Light Shutters with Surface Control

Yeon Jin Han, Hyun Soo Jeon, Ha Young Jung, Young Jin Lim, MinSu Kim, and Seung Hee Lee  
(Jeonbuk Nat'l Univ., Korea)

[P2-103]

14:00-15:30

## Optically Coding in Cholesteric Liquid Crystals for a Data-Hidden-LCD

Xiang Zhang, Yubo Wang, Shihao Sun, Yongfang Zhang, and Yang Liu (Donghua Univ., China)

[P2-104]

14:00-15:30

## Thermomechanical Shape Deformation Using Liquid Crystal Elastomer Actuator

Ji Yoon Park, Chae Hyun Kwon, and Su Seok Choi (POSTECH, Korea)

[P2-105]

14:00-15:30

## Transmittance Control of Guest-Host Liquid Crystal for Eyewear Devices

Chaeyeong Yun, Seungmin Nam, Chaehyun Kwon, Wontae Jung, and Su Seok Choi (POSTECH, Korea)

[P2-106]

14:00-15:30

## Negative Dispersion of Single-Layered Retardation Films from Mixtures of H-Shaped Reactive Molecules

Hoai Thu Luong (Jeonbuk Nat'l Univ., Korea), Ja Won Kim, Jae-Won Ka (KRICT, Korea), and Ji-Hoon Lee (Jeonbuk Nat'l Univ., Korea)

[P2-107]

14:00-15:30

## Newly Synthesized Z-Plate Retarder Used for LCD Compensation Film

Manh-Thang Tran, Minwook Kim, Jahyeon Koo, Kwang-Un Jeong, and Ji-Hoon Lee (Jeonbuk Nat'l Univ., Korea)

[P2-108]

14:00-15:30

## Liquid Crystal Elastomer Fiber Actuator with Double Network: Tailored Mechanical Property and Adhesion for Smart Textile

Seung-Joon Oh and Suk-kyun Ahn (Pusan Nat'l Univ., Korea)

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[P2-109]

14:00-15:30

**Programmable Mechanochromic Response in 3D Printed Cholesteric Liquid Crystal Elastomers**

Jihye Choi, Yeongyu Choi, Tae-Hoon Yoon, and Suk-kyun Ahn (Pusan Nat'l Univ., Korea)

[P2-110]

14:00-15:30

**Chiral Liquid Crystal with Polymer Template for Tunable Photonic Band Filter**

Wontae Jung, Seungmin Nam, Dahee Wang, Chaeyeong Yun, and Su Seok Choi (POSTECH, Korea)

[P2-111]

14:00-15:30

**Control of Carbon Fibers Dispersed in Nematic Liquid Crystals Using UV Light**

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

[P2-112]

14:00-15:30

**Study on the Electro-Optical Characteristics of a Dual Cell Panel Using Vertical Alignment Liquid Crystal Sub-Cell**

Yeongseop Lim, Minseo Kang, and Ji-Hoon Lee (Jeonbuk Nat'l Univ., Korea)

[P2-113]

14:00-15:30

**Optical Property Dependence of Dual Cell Liquid Crystal Display on the Optical Design Parameters of Subcell**

Minseo Kang, Yeongseop Lim, and Ji-Hoon Lee (Jeonbuk Nat'l Univ., Korea)

[P2-114]

14:00-15:30

**A Study on Optical Responses in Chiral Liquid Crystal Elastomers under Uniaxial and Biaxial Stretching**

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

[P2-115]

14:00-15:30

**With a Mini-Led Backlight Super-Curved Vertical-Alignment LCD Development**

An-thung Cho, Zhi-peng He, Gui-qing Du, Chen-I Huang, James Hsu, and Wade Chen (Chuzhou HKC Optoelectronics Tech. Co., Ltd., China)

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14:00-15:30

## Metal-Insulator-Metal Based Meta-Mirror for Angle Independent Color Filter

Yeonah Kim and Seung-Yeol Lee (Kyungpook Nat'l Univ., Korea)

[P2-117]

14:00-15:30

## Optical Compensation for Reduction of Off-Axis Color Differences in a Light Control Dichroic Dye Film

Tae-Hoon Choi, Hyun Wook Lee, and Jin Uk Ha (KATECH, Korea)

[P2-118]

14:00-15:30

## Synthesis and Characterization of Carbon-Quantum-Dot Liquid Crystals

Suhyun Kim, Subhangi Subedi, Avinash KumarRella, Maibam Tarachand, and Shin-Woong Kang (Jeonbuk Nat'l Univ., Korea)

[P2-119]

14:00-15:30

## Aperture-Scalable Artificial Iris based on Radially Controlled Molecular Switching of Photochromic Dye

Young-Min Cho, Asad Nauman, Jae-Won Lee, and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

[P2-120]

14:00-15:30

## Augmented Reality Displays with Folded Optical System based on Round-Trip Geometric Phase Modulation Effects

Jin-Hyeok Seo, Hye-Won Jang, Min-Seok Kim, Jae-Won Lee, Jung-Yeop Shin, and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

[P2-121]

14:00-15:30

## Reflective Geometric Phase Lens to Resolving Chromatic Aberration for Full Color Augmented Reality Display Optics

Min-Seok Kim, Jin-Hyeok Seo, Hye-Won Jang, Jae-Yeol Cha, Seung-Jae Lee, Hyeon-Su Jeong, Jae-Won Lee, Jung-Yeop Shin, and Hak-Rin Kim (Kyungpook Nat'l Univ., Korea)

[P2-122]

14:00-15:30

## Lens Design with Microstructures and Freeform Surfaces in Ultra-Thin Backlight Units

Qibin Feng, Qiyu Sun, Yusong Guo, Zi Wang, and Guoqiang Lv (Hefei Univ. of Tech., Korea)

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14:00-15:30

## Window Shutter with Stable States

Jeong Won Ryu, Gyu Jin Choi, Hwajun Jeon (Yeungnam Univ., Korea), Chul Gyu Jhun (Hoseo Univ., Korea), and Jin Seog Gwag (Yeungnam Univ., Korea)

[P2-124]

14:00-15:30

## Inversion of Circular Polarization in Twisted Mesogenic Luminophores

Gi-Eun Kim, Jae-Hoon Kim, and Chang-Jae Yu (Hanyang Univ., Korea)

[P2-125]

14:00-15:30

## Vertical Alignment Liquid Crystal Polarization CCTV Camera

Sung-Min Kim, Hyeon-Sik Ahn, Min-Sang Kim, and Yoonseuk Choi (Hanbat Nat'l Univ., Korea)

[P2-126]

14:00-15:30

## Liquid Crystal Device Emitting Polarized Light without a Polarizer

Gyu Jin Choi, Jeong Won Ryu (Yeungnam Univ., Korea), Suk-Won Choi (Kyung Hee Univ., Korea), and Jin Seog Gwag (Yeungnam Univ., Korea)

[P2-127]

14:00-15:30

## Flexible Micro Lens Array Patterned Polymer Dispersed Liquid Crystal Film for Improved Organic Light Emitting Diode Light Outcoupling Efficiency

Na-Kyung Lee, Seongmin Lim, and Yoonseuk Choi (Hanbat Nat'l Univ., Korea)

[P2-128]

14:00-15:30

## Light Extraction Technique of OLEDs via Reflective Sub-Bank Structures

Junho Kim and Seunghyup Yoo (KAIST, Korea)

[P2-129]

14:00-15:30

## XtraFast: New LC Mixture Developments for Gaming Application

Ki-Sun Kwon (Merck Performance Materials Co., Ltd., Korea), Sven Christian Laut, Achim Götz (Merck KGaA, Germany), Sun-Mi Park, and Heui-Seok Jin (Merck Performance Materials Co., Ltd., Korea)

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[P2-130]

14:00-15:30

## Highly Sensitive and Conformable Brain-Integrated Inkjet-Printed Voltage Amplifiers for Neural Interfaces

Yongwoo Lee (POSTECH, Korea), Alejandro Carnicer-Lombarte, Sanggil Han, Ben J. Woodington (Univ. of Cambridge, UK), Seungjin Chai (POSTECH, Korea), George G. Malliaras (Univ. of Cambridge, UK), and Sungjune Jung (POSTECH, Korea)

[P2-131]

14:00-15:30

## Dual Residual Attention Convolutional Neural Network for Sparsely Sampled Magnetic Resonance Image Reconstruction

Md. Biddut Hossain, Nyamsuren Darkhanbaatar, Erkhembaatar Dashdavaa, Rupali Kiran Shinde, F M Fahmid Hossain (Chungbuk Nat'l Univ., Korea), Jong-Rae Jeong (Suwon Science College, Korea), and Nam Kim (Chungbuk Nat'l Univ., Korea)

[P2-132]

14:00-15:30

## Dermnet Dataset Optimization Strategy for Effective Classification

Rupali Kiran Shinde, Joon Hyun Kim, Oh-Seung Nam, Ki-Chul Kwon, Md. Biddut Hossain (Chungbuk Nat'l Univ., Korea), Kwon-Yeon Lee (Sunchon Nat'l Univ., Korea), and Nam Kim (Chungbuk Nat'l Univ., Korea)

[P2-133]

14:00-15:30

## Novel Driving Process for Enhancing the Fingerprint Authentication of In-Cell Organic Photodiode Panel

HyangA Park, Soo-Young Hong, Kwang-Soo Bae, Dae-Young Lee, Gun-Hee Kim, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P2-134]

14:00-15:30

## Wavelength Tunable Quantum Dots High-Power NIR Wearable Organic Light Emitting Diodes for Photomedicine Application with Micro Cavity Effects

Young Woo Kim, DongWoon Lee, Yeji Shin, Minseong Park (Gachon Univ., Korea), Kyoung Hwa Kim (InnoQD, Co., Ltd., Korea), Eou-Sik Cho, Sang Jik Kwon, and Yongmin Jeon (Gachon Univ., Korea)

[P2-135]

14:00-15:30

## A Low-Temperature Solution-Processed Transparent Heterojunction Photodiode for Real-Time UV Monitoring Applications

Hyoun Ji Ha and Seong Jun Kang (Kyung Hee Univ., Korea)

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[P2-136]

14:00-15:30

**Fabrication of Simple UV Dosimeter with Mobile Application for Skin Protection**

Seong Jae Kang, Jin Hyun Ma, and Seong Jun Kang (Kyung Hee Univ., Korea)

[P2-137]

14:00-15:30

**Thermal Stable Flexible Vertical  $\mu$ LED Patch for Hair Growth Treatment**

Min Seo Kim, Han Eol Lee, and Keon Jae Lee (KAIST, Korea)

[P2-138]

14:00-15:30

**Optogenetic Modulation of Body Behavior by Employing Flexible Vertical LightEmitting Diodes on the Brain Surface**

Ki Yun Nam, Jung Ho Shin, and Keon Jae Lee (KAIST, Korea)

[P2-139]

14:00-15:30

**Patch-Type Metasurface Based Wireless Power Transfer System for Bioimplantable Devices**

Wonwoo Lee, Semin Jo, and Hojin Lee (Soongsil Univ., Korea)

[P2-140]

14:00-15:30

**OLED for Healthcare: Management of Diabetes via Inner-Body Photobiomodulation**

Jee Hoon Sim (KAIST, Korea), Jinhee Kwon (Asan Medical Center, Korea), Hyeonwook Chae, Su-Bon Kim (KAIST, Korea), Hyunsu Cho (ETRI, Korea), Woochan Lee (KAIST, Korea), So Hee Kim (Asan Medical Center, Korea), Chun-Won Byun (ETRI, Korea), Sangin Hahn (KAIST, Korea), Do Hyun Park (Asan Medical Center, Korea), and Seunghyup Yoo (KAIST, Korea)

[P2-141]

14:00-15:30

**Highly Efficient Top-Emitting Red OLEDs with Ultrathin Biocompatible MLA for on-Skin Phototherapy Device**

Youngjin Song, Carmela Michelle Esteban, Junho Kim, and Seunghyup Yoo (KAIST, Korea)

[P2-142]

14:00-15:30

**Stretchable Organic-Inorganic Hybrid Dry Electrodes for Skin-Compatible Electrocardiogram Sensors**

Taeyeon Oh, Hyeongbeom Lee, Inho Lee, and Sungjun Park (Ajou Univ., Korea)

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[P2-143]

14:00-15:30

## Doped System of Platinum (II) Complexes for Deep-Red to Near-Infrared Organic Light-Emitting Diodes

Carmela Michelle Esteban, Woochan Lee, Palanisamy Rajakannu, and Seunghyup Yoo (KAIST, Korea)

[P2-144]

14:00-15:30

## Design and Characterization of Cellulose-Based Vertical Humidity Sensor

Baeksang Sung, Eun-Jeong Jang, Jeong-In Lee (Hanbat Nat'l Univ., Korea), Joo Won Han (Pukyong Nat'l Univ., Korea), Dasol Kim, Jinhwa Kim, Sora Han, Jooho Lee, Hyunjun Jang (Hanbat Nat'l Univ., Korea), Yong-Hyun Kim (Pukyong Nat'l Univ., Korea), Yoonseuk Choi, Jae-Hyun Lee, Min-Hoi Kim, and Jonghee Lee (Hanbat Nat'l Univ., Korea)

[P2-145]

14:00-15:30

## Bio-Signal Monitoring Band Using Inkjet-Printed Flexible Temperature Sensor

Sehyuk Yeom, Sanghoon Jung, Jae-Sung Lee, Byoungcho Kang, and Wang-Hoon Lee (GERI, Korea)

[P2-146]

14:00-15:30

## Tailoring Actuation Properties of Exchangeable Liquid Crystal Elastomers Comprising Dynamic Thiourea Bonds

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

[P2-147]

14:00-15:30

## Effects of Continuously Bending Ridges on Morpho Butterfly Wings

Yelin Lee, Ju Hong Park and Wook-sung Kim (POSTECH, Korea)

[P2-148]

14:00-15:30

## Device for Sensing of Isolated Pressure

Wooseok Kim and Sang Min Won (Sungkyunkwan Univ., Korea)

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14:00-15:30

## Improvement of Fingerprint Image Quality by Optimized Hole Position in a Sensor Device

Soo Yeong Hong, Bo Gwang Song, Dae-Young Lee, Gun Hee Kim, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P2-150]

14:00-15:30

## Skin-Breathable and Stretchable Electrode based on Square-Shaped Silver Nanowire Bundle Mesh with Wavy Bridges

Eun Young An, Jeong Ju Baek, Ki Cheol Chang (KITECH, Korea), Jeong Ho Cho (Yonsei Univ., Korea), Geun Yeol Bae (Kumoh Nat'l Inst. of Tech., Korea), and Gyojic Shin (KITECH, Korea)

[P2-151]

14:00-15:30

## Piezoelectric/Resistive Bimodal Sensor for Strain and Location Sensing

Dongjun Kim, Jun Hyuk Shin, and Su Seok Choi (POSTECH, Korea)

[P2-152]

14:00-15:30

## Flexible Electrochromic Device Integrated with Wireless Control Module

Doyoung Kim and Sang Min Won (Sungkyunkwan Univ., Korea)

[P2-153]

14:00-15:30

## Structure Reconfigurable Antenna Using Soft Dielectric Actuator

Sang Gyeong Nam and Su Seok Choi (POSTECH, Korea)

[P2-154]

14:00-15:30

## Optical Design of Energy Conversion Layer for High Photoelectric Conversion Efficiency of the Organic Solar Cell

Liang Zhang and Chul Gyu Jhun (Hoseo Univ., Korea)

[P2-155]

14:00-15:30

## Room Temperature Welding of Silver Nanowires for Flexible Transparent Conductive Electrodes with Hydrochloric Acid

Seung-Beom Shin and Myung-Gil Kim (Sungkyunkwan Univ., Korea)



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14:00-15:30

## Novel Optical Structure for Enhancing the Fingerprint Identification Performance

Kwang Soo Bae, Min Oh Choi, Bokwang Song, Dae-Young Lee, Gun Hee Kim, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P2-157]

14:00-15:30

## Multi-Layered Triboelectric Nanogenerator for an Artificial Synapse Using Organic Electrochemical Transistor

Yong-Jin Park, Yun Goo Ro, Young-Eun Shin, Cheolhong Park, Sangyun Na, Yoojin Chang, and Hyunhyub Ko (UNIST, Korea)

[P2-158]

14:00-15:30

## Self-Healable Bilayered Film with Ion Accumulation Interface for HighPerformance Piezoionic Tactile Sensor

Young-Ryul Kim, Geumseok Lim, Haryeong Cho, and Hyunhyub Ko (UNIST, Korea)

[P2-159]

14:00-15:30

## Octopi-Inspired Adhesive Patches for Biosignal Detection

Tae Woo Koo, Da Ye Kim, and Seung Goo Lee (Univ. of Ulsan, Korea)

[P2-160]

14:00-15:30

## Colorimetric Strain Sensor based on Colloidal Gold Nanocluster Embedded Thermoplastic Polyurethane Nanofibers

Hyun Tae Ju, Na Gyeong Lee, and Seung Goo Lee (Univ. of Ulsan, Korea)

[P2-161]

14:00-15:30

## Liquid-Solid Triboelectric Nanogenerator based on Superhydrophobic Surface

Joon Kim, Yu Jin Kim, and Seung Goo Lee (Univ. of Ulsan, Korea)

[P2-162]

14:00-15:30

## In-Cell Ambient Light Sensors (ALSs) LCD Integration Using $\alpha$ -Si TFT Phototransistor

An Thung Cho, Hao Dong, Ming Liang Wang, Wen Xin Li, Dong Sheng Guo, Chao Wei, Jin Chang Feng, Ni Chen, Feng Yun Yang, James Hsu, and Wade Chen (ChuZhou HKC Optoelectronics Tech. Co., Ltd., China)

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[P2-163]

14:00-15:30

**Biodegradable, Disposable, and Flexible Capacitive Sensor for Sensing and Human Motion Monitoring**

Mohammad Zarei, Deristisya Zahra, and Seung Goo Lee (Univ. of Ulsan, Korea)

[P2-164]

14:00-15:30

**Epidermal Mechano-Acoustic System for Respiratory Diagnosis**

Hee Kyu Lee and Sang Min Won (Sungkyunkwan Univ., Korea)

[P2-165]

14:00-15:30

**Highly Flexible Pressure Sensor with Performance based on Porous Thin-Film of High-k Polymer**

Sehwan Park (Dong-A Univ., Korea), Haechang Lee (KIST, Korea), Duhyoung Gong (Dong-A Univ., Korea), Sungyun Kim (Dong-A Univ., Korea), Seunghyup Yoo (KAIST, Korea), and Hanul Moon (Dong-A Univ., Korea)

[P2-166]

14:00-15:30

**Ion Conductive Polymer Composites for the Detection of Transepidermal Water Loss**

Sangyun Na, Jeonghee Yeom, Yoojin Chang, Yeju Kwon, Young-Eun Shin, Yong-Jin Park, and Hyunhyub Ko (UNIST, Korea)

[P2-167]

14:00-15:30

**Highly Sensitive Flexible Pressure Sensor with Asymmetric Structure for Wearable Electronics**

Yeoul Kang and Jung Woo Lee (Pusan Nat'l Univ., Korea)

[P2-168]

14:00-15:30

**Autonomous Self-Healable Electronic Skin Exhibiting Piezo-Ionic Dynamics for Touch Modulation**

Elvis K. Boahen (Hanyang Univ., Korea), Baohai Pan (Chungnam Nat'l Univ., Korea), Hyukmin Kweon, Joo Sung Kim, Hanbin Choi, Zhengyang Kong, Dong Jun Kim, Wu Bin Ying (Hanyang Univ., Korea), Kyung Jin Lee (Chungnam Nat'l Univ., Korea), and Do Hwan Kim (Hanyang Univ., Korea)

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14:00-15:30

**Silica-Augmented Hybrid Ionic Electroactive Polymer Actuator Exhibiting High Electromechanical Energy for Soft Robotic Applications**

Hanbin Choi (Hanyang Univ., Korea), Yongchan Kim (Soongsil Univ., Korea), Seonho Kim (Inha Univ., Korea), So Young Kim, Joo Sung Kim (Hanyang Univ., Korea), Eseudeo Yun (Soongsil Univ., Korea), Hyukmin Kweon (Hanyang Univ., Korea), Vipin Amoli (Rajiv Gandhi Inst. of Petroleum Tech., Korea), U hyeok Choi (Inha Univ., Korea), Hojin Lee (Soongsil Univ., Korea), and Do Hwan Kim (Hanyang Univ., Korea)

[P2-170]

14:00-15:30

**Enhancement of Reliability of CuI RRAMs with Hydrophobic Polymer Encapsulation for Interactive VR/AR Application**

Yoon-Hee Kim, Myoung-Seok Lee, Hyeon Bin Jo, Han Min Kim, Geun Lee, and Sung Hun Jin (Incheon Nat'l Univ., Korea)

[P2-171]

14:00-15:30

**Remarkable Conductivity Increase and Pure Metallic Properties in from Semiconducting Colloidal Nanocrystals via Cation Exchange Synthesis**

Hyo-Geun Kwon, Gihyo Kim, Do-Hyun Kim, and Sang-Wook Kim (Ajou Univ., Korea)

[P2-172]

14:00-15:30

**Self-Driven Wavelength Dependent Bipolar Photo-Response of Tin Oxide Quantum Dots-Fluorene Copolymer-Based Vertically Stacked Dual Heterojunction Photodetector**

Taehyun Park and Hocheon Yoo (Gachon Univ., Korea)

[P2-173]

14:00-15:30

**Facile Formation of Multicolored Quantum Dot Stack Films for Efficient White Light-Emitting Diodes**

Eun A Kim (Myongji Univ., Korea) and Seong-Yong Cho (Hanyang Univ., Korea)

[P2-174]

14:00-15:30

**Enhanced Device Performance of Quantum Dot Light-Emitting Diodes by Adopting ALD Mg-Alloyed ZnO Interlayer**

Hyo Geun Lee, Min Seok Kim (Hanyang Univ., Korea), Jaehoon Lim (Sungkyunkwan Univ., Korea), and Seong-Yong Cho (Hanyang Univ., Korea)

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14:00-15:30

**Control of Reaction Kinetics of Monodispersed InP/ZnSeS/ZnS-Based Quantum Dots Using Organophosphorus Compounds for Electroluminescent Devices**

Awais Ali, Yonghyeok Choi, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

[P2-176]

14:00-15:30

**Bright, Narrow Emissivity of Quaternary Green Ag-In-Ga-S Quantum Dots**

Yuri Kim, Yubeen Kong, Seong Min Park, Seoyeon Park, and Heesun Yang (Hongik Univ., Korea)

[P2-177]

14:00-15:30

**Coherent Heteroepitaxial Growth of I-III-VI<sub>2</sub> Ag(In,Ga)S<sub>2</sub> Colloidal Nanocrystals with Near-Unity Quantum Yield**

Seongbin Im, Hak June Lee, Dongju Jung, Se Jong Min, Jin Su Park, Jun Yeol Im, Jae Seung Lee, and Wan Ki Bae (Sungkyunkwan Univ., Korea)

[P2-178]

14:00-15:30

**Synthesis of Green CdSe/CdZnS Core-Shell QDs by Steric Hindrance with High Quantum Yield for Mass Production**

ByoungHo Kang, Jaesung Lee, Sanghoon Jung, Sehyuk Yeom, and Wanghoon Lee (GERI, Korea)

[P2-179]

14:00-15:30

**High-Performance of Solution Processed SWIR Photodetectors Using PbS/CdS Core/Shell Colloidal Quantum Dots**

Jae-Sung Lee, Byoung-Ho Kang, Sang-Hoon Jung, Se-Hyuk Yeom, and Wang-Hoon Lee (GERI, Korea)

[P2-180]

14:00-15:30

**High-Resolution, Nondestructive Photolithography for Multi Color Patterning of InP Quantum Dot Films by Atomic Layer Deposition of ZnO**

Eun Sang Lee (Hanyang Univ., Korea), Joon Yup Lee (Myongji Univ., Korea), and Seong-Yong Cho (Hanyang Univ., Korea)

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[P2-181]

14:00-15:30

Improving the Performance of Quantum Dot Light-Emitting Diodes Using ZnMgO Alloy Interlayers via Atomic Layer Deposition

Hyeonseung Ban, Min Seok Kim, and Seong-Yong Cho (Hanyang Univ., Korea)

[P2-183]

14:00-15:30

Enhanced Performance of InP Quantum-Dot Light-Emitting Diodes by ZnMgO Mixed Emissive Layer

Beomsoo Chun and Jeonghun Kwak (Seoul Nat'l Univ., Korea)

[P2-184]

14:00-15:30

Comprehensive Study of Thermal Effects in Inverted InP Quantum Dot Light-Emitting Diodes

Ganghyun Park and Jeonghun Kwak (Seoul Nat'l Univ., Korea)

[P2-185]

14:00-15:30

Colloidal Synthesis of Deep-Blue-Emitting CsEuBr<sub>3</sub> and Cs<sub>4</sub>EuBr<sub>6</sub> Nanocrystals

Jaeyeong Ha, Seongbeom Yeon, and Himchan Cho (KAIST, Korea)

[P2-186]

14:00-15:30

Quantum Dot/Organic Nanohybrids for InP-Based QD-LEDs

Yohan Kim, Jiyong Kim, Manuel Gensler, Christine Boeffel, and Armin Wedel (Fraunhofer IAP, Germany)

[P2-187]

14:00-15:30

Synthesis and Characterization of Novel Polymeric Hole-Transporting Materials for Perovskite LEDs

Hyejin Na, Hyeon Woo Jeong, Gwang-il Kim, Bonju Koo, Jinyoung Park, Sungho Choi, Seon Joo Lee, and Jaemin Lee (KRICT, Korea)

[P2-188]

14:00-15:30

Solution Processible Thin Film Nonvolatile Memory Device Using Quantum Dots/Polyvinylcarbazole Hybrid Materials

Sanghoon Jung, Byoungcho Kang, Jaesung Lee, Sehyuk Yeom, and Wanghoon Lee (GERI, Korea)

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[P2-189]

14:00-15:30

**Structural Engineered Green-Emitting InP/ZnSe/ZnS Quantum Dots for High Performance Light-Emitting Devices**

Kahyung Kim, Jaemin Lim, and Wan Ki Bae (Sungkyunkwan Univ., Korea)

[P2-190]

14:00-15:30

**Fabricating a Multi Barrier Layer on Plastic Substrate and Enhancing the Device Stability of Flexible Quantum-Dot Light-Emitting Diodes**

Jimyoung Kim and Honyeon Lee (Soonchunhyang Univ., Korea)

[P2-191]

14:00-15:30

**Transient Analysis on Degradation Mechanisms of InP Quantum Dot Light-Emitting Diodes**

Hyungsuk Ryu (Kwangwoon Univ., Korea), Doyoon Shin, Wanki Bae (Sungkyunkwan Univ., Korea), Jeonghun Kwak (Seoul Nat'l Univ., Korea), Hyunho Lee (Kwangwoon Univ., Korea)

[P2-192]

14:00-15:30

**Polarized Luminescence in Asymmetrically Strained Quantum Dots**

Dongju Jung, Jeong Woo Park (Sungkyunkwan Univ., Korea), Hak June Lee (Seoul Nat'l Univ., Korea), Doyoon Shin, Jaemin Lim, Ka Hyung Kim, Seongbin Im, Se Jong Min, and Wan Ki Bae (Sungkyunkwan Univ., Korea)

[P2-193]

14:00-15:30

**Improvement of Quantum Efficiency of InP/ZnSe/ZnS Core-Shell Quantum Dots with Thick-ZnS Shell Using Hexamethyldisilathiane Sulfur Precursor**

Kangwoo Lee, Boram Kim, Yonghyeok Choi, Mina Kim, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

[P2-194]

14:00-15:30

**Bilayered Electron Transport Layer by Lithium and Magnesium Doped Zinc Oxide for Efficiency Enhancement of Inverted Quantum Dot Light-Emitting Diodes**

Yonghyeok Choi, Mina Kim, and Heeyeop Chae (Sungkyunkwan Univ., Korea)

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[P2-195]

14:00-15:30

**Colloidal Synthesis of InGaP Magic-Sized Clusters and Quantum Dots**

Changhyun Joo, Jaehwan Lee, and Himchan Cho (KAIST, Korea)

[P2-196]

14:00-15:30

**Improving Quantum Dot Light-Emitting Diode Performance through Electron Transport Layer Air Exposure**

Eunyong Seo, Kyung Jae Lee (Gyeongsang Nat'l Univ., Korea), Jeong Ha Hwang (Sungkyunkwan Univ., Korea), Dong Hyun Kim, Jin Young Jang, Dae Geun Song (Gyeongsang Nat'l Univ., Korea), Jaehoon Lim (Sungkyunkwan Univ., Korea), and Donggu Lee (Gyeongsang Nat'l Univ., Korea)

[P2-197]

14:00-15:30

**Enhanced Hole Injection of Quantum Dot Light-Emitting Diode Using Multi-Layer Hole Transport Layer with PMA and VNPB Alternating Structure**

Dong Hyun Kim (Gyeongsang Nat'l Univ., Korea), Jeong Ha Hwang (Sungkyunkwan Univ., Korea), Eunyong Seo, Kyung Jae Lee, Jin Young Jang, Dae Geun Song (Gyeongsang Nat'l Univ., Korea), Jaehoon Lim (Sungkyunkwan Univ., Korea), and Donggu Lee (Gyeongsang Nat'l Univ., Korea)

[P2-198]

14:00-15:30

**Defect Passivation by In-Situ & Dynamic Treatment for Improved Efficiency and Stability of Quasi-2D Blue Perovskite Light Emitting Diodes**

Beomhee Yoon and Hyunho Lee (Kwangwoon Univ., Korea)

[P2-199]

14:00-15:30

**Investigation of Azide-Based Photo-Crosslinker for All-Solution Processed Quantum Dot Light-Emitting Diodes**

Sujin Park (Kumoh Nat'l Inst. of Tech., Korea), Jeong Ha Hwang, Jaehoon Lim (Sungkyunkwan Univ., Korea), Donggu Lee (Gyeongsang Nat'l Univ., Korea), and Wonho Lee (Kumoh Nat'l Inst. of Tech., Korea)

[P2-200]

14:00-15:30

**Highly Efficient of Quantum Dot Light Emitting Diodes Using a Mixture of MoO<sub>3</sub> and V<sub>2</sub>O<sub>5</sub> Transition Metal Oxides as a Hole Injection Layer**

Suyoung Kim, Jimyoung Kim, Youngbin Chae, and Changkyo Kim (Soonchunhyang Univ., Korea)

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14:00-15:30

**Tailoring Dodecyl-Based Ligand Precursors for Efficient Red-Emitting CsPb(Br,I)<sub>3</sub> Perovskite Nanocrystals**

Semin Ko, Hyeon Woo Jeong (KRICT, Korea), Donryeol Lee (UNIST, Korea), Ja Yeon Kim, Hyejin Na, Seon Joo Lee (KRICT, Korea), Myoung Hoon Song (UNIST, Korea), Jaemin Lee (KRICT, Korea), Soong Ju Oh (Korea Univ., Korea), and Sungho Choi (KRICT, Korea)

[P2-202]

14:00-15:30

**Symmetry Broken Zincblende CdSe / ZnSe Quantum Dots : Subthermal Room-Temperature Linewidths and Polarized Emission**

Jeong Woo Park, Dongju Jung (Sungkyunkwan Univ., Korea), Hak June Lee (Seoul Nat'l Univ., Korea), Doyoon Shin, Seongbin Im, and Wan Ki Bae (Sungkyunkwan Univ., Korea)

[P2-203]

14:00-15:30

**Highly Efficient Quantum Dots Light-Emitting Diodes with Atomic Layer Deposited Aluminum Oxide Interlayer**

Sunhwee Kim (Kyonggi Univ., Korea), Taegyu Kim (Sungkyunkwan Univ., Korea), Hyeyoung Jung (Kyonggi Univ., Korea), Yong-Hoon Kim (Sungkyunkwan Univ., Korea), and Jiwan Kim (Kyonggi Univ., Korea)

[P2-204]

14:00-15:30

**A Study on Quantum Dot Light-Emitting Diodes with Zn<sub>0.85</sub>Mg<sub>0.15</sub>O Electron Transport Layer Deposited by RF Sputtering**

Bomi Kim, Jungho Kim, Seongrae Kim, and Jiwan Kim (Kyonggi Univ., Korea)

[P2-205]

14:00-15:30

**The Isomer Chemistry of Magic Sized Clusters**

Youngjae Ryu and Sungjee Kim (POSTECH., Korea)

[P2-206]

14:00-15:30

**Enhanced Performance of CsPbBr<sub>3</sub> Thin Film-Based Light-Emitting Diodes by Atomic Layer Deposition of MgO**

Minju Kim and Seong-Yong Cho (Hanyang Univ., Korea)



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14:00-15:30

## Multi-Stacked Hybrid Anode Structure for Enhanced Charge Balance in InP Quantum Dot Light-Emitting Diodes

Jeong Ha Hwang (Sungkyunkwan Univ., Korea), Eunyong Seo, Dong Hyun Kim (Gyeongsang Nat'l Univ., Korea), Yeongho Choi, Yong Woo Kwon, Woon-ho Jong (Sungkyunkwan Univ., Korea), Kyung Jae Lee (Gyeongsang Nat'l Univ., Korea), Jin Young Jang, Dae Geun Song, Jaehoon Lim (Sungkyunkwan Univ., Korea), and Donggu Lee (Gyeongsang Nat'l Univ., Korea)

[P2-208]

14:00-15:30

## Ligand Crosslinking Strategy for Efficient Quantum Dot Light-Emitting Diodes via Thiol-Ene Click Chemistry

Seungki Shin, Hyunwoo Jang, Yunseo Lee, and Nuri Oh (Hanyang Univ., Korea)

[P2-209]

14:00-15:30

## Variation of Hole Transport Layer Configuration for Solution-Processed Perovskite Quantum-Dot Light-Emitting Diodes

Gwang Il Kim, Hyejin Na, Seon Joo Lee, Yurim Mo (KRICT, Korea), Hyo Sung Choi (Hanyang Univ., Korea), and Jaemin Lee (KRICT, Korea)

[P2-210]

14:00-15:30

## Efficient Azide Ion Solution Treatment of Electron Transport Layer for Self-Powered Infrared Quantum Dot Photodetector

Young Kyun Choi, Byung Ku Jung, Taesung Park, Seongkeun Oh, and Soong Ju Oh (Korea Univ., Korea)

[P2-211]

14:00-15:30

## Development of Black QD-Bank with Excellent Liquid-Repellent Performance Using Novel Fluorinated Compound

Jaehyun Lim, Hyejung Choi, Hanbyeol Lim, Hyunsang Cho, Yeonsoo Lee, and Changmin Lee (DUKSAN Neolux Co., Ltd., Korea)

[P2-212]

14:00-15:30

## Photomultiplication-Type Colloidal Quantum Dot Infrared Photodiode via Charge Accumulation Strategy

Byung Ku Jung, Taesung Park, and Soong Ju Oh (Korea Univ., Korea)

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[P2-213]

14:00-15:30

**Chemically and Electronically Active Metal Ions on InAs Quantum Dots for Infrared Detectors**

Seongchan Kim, Jaeyoung Seo, Jina Na, and Nuri Oh (Hanyang Univ., Korea)

[P2-214]

14:00-15:30

**Photomultiplication Effect of Quantum Dots Inverted Photodiodes**

Seongkeun Oh, Byung Ku Jung, Young Kyun Choi, Junhyeok Park, Junhyuk Ahn, and Soong Ju Oh (Korea Univ., Korea)

[P2-215]

14:00-15:30

**Dual Fabry-Perot Interferometer to Enhancing The Color Purity of Display Devices**

Keun Soo Shin, Jun Yong Kim, and Yun Seon Do (Kyungpook Nat'l Univ., Korea)

[P2-216]

14:00-15:30

**External Quantum Efficiency Enhancement of Photoluminescent Quantum Dot Displays via Index-Mismatching Scatterers in Organic Composites**

DaYeon Lee, Hayoung Jung, MinSu Kim, and Seung Hee Lee (Jeonbuk Nat'l Univ., Korea)

[P2-217]

14:00-15:30

**Stability Enhancement of Quantum Dot Color Conversion Layer via Inkjet Printing by Organic Encapsulation Resin**

Sang Youn Lee (KITECH, Korea), Chun Sakong (ChemE Inc., Korea), Byeong-Kwon Ju (Korea Univ., Korea), and Kwan Hyun Cho (KITECH, Korea)

[P2-218]

14:00-15:30

**Inkjet Solvent Formulation of InP/ZnSeS/ZnS Quantum Dot Emitter for the Improved Pixel-to-Pixel Printing Uniformity**

Yoon-Jeong Choi, Jeong-Yeol Yoo, and Byung Doo Chin (Dankook Univ., Korea)

[P2-219]

14:00-15:30

**Constructing an Exceptionally Thick Hole Transport Layer for Highly Stable Quantum Dot Light Emitting Diodes**

Minseok Choi, Yeyun Bae (Pusan Nat'l Univ., Korea), Woon Ho Jung, Jaehoon Lim (Sungkyunkwan Univ., Korea), and Jeongkyun Roh (Pusan Nat'l Univ., Korea)

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[P2-220]

14:00-15:30

**Heteroepitaxial Chemistry on Colloidal InP Quantum Dots for Uniform Zinc Chalcogenide Epilayers Enabling Unity Quantum Yield**

Yeongho Choi, Donghyo Hahm, Wan Ki Bae, and Jaehoon Lim (Sungkyunkwan Univ., Korea)

[P2-221]

14:00-15:30

**Strategy for Improving Moisture Stability of Perovskite Nanocrystals via Polyethylene Microcapsule Encapsulation**

Geon Jong Yu, Jung Hyeon Yoo, Seok Bin Kwon, Ho Chan Yoo, and Dae Ho Yoon (Sungkyunkwan Univ., Korea)

[P2-222]

14:00-15:30

**Dispersion Stability and Color Conversion Characteristics of Quantum Dot Matrix with Different Hollow and Solid-Type Light Diffusing ZnS Nanoparticles**

Jae Ho Ban, Min Su Lee, Yoon-Jeong Choi, Jeong-Yeol Yoo, Jang Sub Kim, and Byung Doo Chin (Dankook Univ., Korea)

[P2-223]

14:00-15:30

**Enhancing the Efficiency of Cadmium-Free Quantum Dot Light-Emitting Diodes by Inserting the Interlayer**

Ahyoung Hong and Jeonghun Kwak (Seoul Nat'l Univ., Korea)

[P2-224]

14:00-15:30

**Role of ZnCl<sub>2</sub> in Single-Crystalline InP Tetrapod Nanocrystals**

Sunghu Kim, Seongmin Park, Sinil Choi, and Sohee Jeong (Sungkyunkwan Univ., Korea)

[P2-225]

14:00-15:30

**QD-LED with PEIE Inserted between the Emission Layer for Charge Balance and Distribution**

Hyo-Bin Kim, Jae-In Yoo, Seong-Chen Kang, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

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[P2-226]

14:00-15:30

**Improved Performance of Quantum Dot Light-Emitting Diodes with ZnO/ZnMgO Bilayered Electron Transport Layers by UV-Ozone Treatment**

Kyoungeun Lee (Pusan Nat'l Univ., Korea), Jaehoon Kim (Dong-A Univ., Korea), and Jeongkyun Roh (Pusan Nat'l Univ., Korea)

[P2-227]

14:00-15:30

**Flexible Heterostructured Photodetectors based on Colloidal Quantum Dots and Laser-Induced Graphene**

Jiyoon Oh, Hyeona Jo (Pusan Nat'l Univ., Korea), Hanchul Cho (KITECH, Korea), Byeongguk Jeong, and Jeongkyun Roh (Pusan Nat'l Univ., Korea)

[P2-228]

14:00-15:30

**Size and Composition-Dependent Electronic Properties of ZnMgO Nanoparticle Electron Transport Layers**

Yong Woo Kwon (Sungkyunkwan Univ., Korea), Hyeonjun Lee (KAIST, Korea), Woon Ho Jung, and Jaehoon Lim (Sungkyunkwan Univ., Korea)

[P2-229]

14:00-15:30

**Optical Simulation of Capsuled QD-OLEDs: Establishing Optimized Film Conditions through Geometric Modeling and Performance Analysis**

Seyoung Yoon, Junho Kim (KAIST, Korea), Hyeyoung Lee, Bongjun Kim (Sookmyung Women's Univ., Korea), Ohkwon Kwon (Inno QD Co., Ltd., Korea), and Seunghyup Yoo (KAIST, Korea)

[P2-230]

14:00-15:30

**Utilizing a Charge Generation Junction to Enable Efficient Hole Injection in InP-Based Quantum Dot Light-Emitting Diodes**

Yeyun Bae, Minseok Choi, and Jeongkyun Roh (Pusan Nat'l Univ., Korea)

[P2-231]

14:00-15:30

**Color Conversion Sheet with Perovskite Material for Mini-LED-Based LCDs**

Da Bin Kim, Kyungkook Jang, Seungbeom Lee, Younghoon Kim, Taehyung Kwak, Kwon-Shik Park, and Soo Young Yoon (LG Display Co., Ltd., Korea)

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[P2-232]

14:00-15:30

## Direct Photocatalytic Patterning of Colloidal Emissive Nanomaterials

Seongkyu Maeng, Sun Jae Park, Jaehwan Lee, Hyungdoh Lee, Jonghui Choi, Jeung Ku Kang, and Himchan Cho (KAIST, Korea)

[P2-233]

14:00-15:30

## Comparative Study of the Ground-State Exciton Emission Wavelengths of InP/ZnSe/ZnS Quantum Dots Calculated by the Effective Mass Approximation and $8 \times 8$ k·p Method

Sungjun Kim and Jungho Kim (Kyung Hee Univ., Korea)

[P2-234]

14:00-15:30

## Facile Calibration of High Magnification Three-Dimensional Digital Image Correlation for Stretchable Display Analysis

Jinsu Yoon, Jong Ho Park, and Yongtaek Hong (Seoul Nat'l Univ., Korea)

[P2-235]

14:00-15:30

## Effect of Spikes in an OLED Display Waveform on Flicker Perception

Hyosun Kim, Hyungsuk Hwang, Youra Kim, Youngwoo Yi, Jaejoong Kwon, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P2-236]

14:00-15:30

## Optimal Design of Magic Mirror and Beam Splitter for Maximizing Contrast Ratio between an Aerial Image by AIRR and a Mirror Image by Magic Mirror

Kyoya Hino, Kohei Kishinami, Shiro Suyama, and Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

[P2-237]

14:00-15:30

## Autostereoscopic 3D Technology with Viewing Distance Adaptation

Wook Jeon, Hoon Kang, Gi-Hong Kim, JoonYoung Yang, and SooYoung Yoon (LG Display Co., Ltd., Korea)

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14:00-15:30

## A Study on Light Field Display View Map Through Measurement Using Conoscopic Lens

Youngmin park, SuMi Lee, Youngjun Seo, Jaejoong Kwon, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P2-239]

14:00-15:30

## Design of OLED Angular Intensity Distribution for Virtual Reality Headset

Soomin Baek, Juhwa Ha, Cheon Myeong Lee, Jiwon Lee, and Sangho Kim (Samsung Display Co., Ltd., Korea)

[P2-240]

14:00-15:30

## How to Measure a Chief Ray of the Light into the Eye from a Microdisplay for an Unknown Optical Design Pancake Lens

Hyeyoung Ha, Young-Keun Lee, Young-Min Park, Aree Song, Junga Choi, Young-Jun Seo, Jaejoong Kwon, and Yongjo Kim (Samsung Display Co., Ltd., Korea)

[P2-241]

14:00-15:30

## Stability Control of Lead-Free Perovskite Red Light-Emitting Diodes

Seungjae Lee, Heeseung Lee, and Jung-Yong Lee (KAIST, Korea)

[P2-242]

14:00-15:30

## Effect of Partial Oxygen Pressure and Annealing Condition Control on Reliability of Bottom Gate IGZO Thin Film Transistor

Kyung Jun Park, Jeong-Min Park, and Jang-Yeon Kwon (Yonsei Univ., Korea)

[P2-243]

14:00-15:30

## Flexible Electromagnetic Shielding Film with High Electromagnetic Shielding Performance and Adhesion for Flexible Displays

Sun Hong Yoon and Dongyoung Shim (KETI, Korea)

[P2-244]

14:00-15:30

## Selective Adhesion-Based Facile Liquid Metal Patterning for Stretchable Devices

Dongju Jang, Byeonggeol Lee, and Yongtaek Hong (Seoul Nat'l Univ., Korea)

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14:00-15:30

**All Electrohydrodynamic 3D-Printed Micro-Supercapacitor for Enhanced Display Applications**

Sujin Jung, Sung Min Rho, Jonghyuk Ahn, and Hyun Jae Kim (Yonsei Univ., Korea)

[P2-246]

14:00-15:30

**Facile Oxygen Plasma Treated Ag Nanofiber-Based Flexible Resistive Random Access Memory for E-Skin Display Applications**

Sung Min Rho, Seungmin Lee, Sujin Jung, Jonghyuk Ahn, Kunho Moon, Youjin Seo, Dong Keun Lee, and Hyun Jae Kim (Yonsei Univ., Korea)

[P2-247]

14:00-15:30

**Electrically Tunable Nanocolloidal Lenses for an Augmented Reality System**

Sahul Hameed Syed Ali, P. A. N. S. Priyadarshana, Seung-Ho Hong, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[P2-248]

14:00-15:30

**Development of Cross-Talk Compensation Algorithms for High Resolution Display Device**

YongWoo Lee (Hanyang Univ., Korea), KookHyun Choi, WooGun Gang, HyeRyoung Park, SangHwan Cho (Samsung Display Co., Ltd., Korea), and MinJe Ko (Hanyang Univ., Korea)

[P2-249]

14:00-15:30

**A Study on Micro-Sized Liquid Crystal Array Lattice Using Pulse-Train Signals**

Sun-Kuk Kim, Young-Woo Park, Vitaly P. Panov, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[P2-250]

14:00-15:30

**Ultrathin Cellulose-Based Flexible Pressure Sensor with Thin Adhesive Layer**

Dong Keon Lee, Dahyun Kim, Jinsu Yoon, and Yongtaek Hong (Seoul Nat'l Univ., Korea)

[P2-251]

14:00-15:30

**Growth Control of II-VI Epilayer on III/V Nanocrystals**

Doyoon Shin, Sejong Min, and Wan Ki Bae (Sungkyunkwan Univ., Korea)

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[P2-252]

14:00-15:30

Film-State Ligand and Color Change Patterning Process for Perovskite Quantum Dot Light Emitting Diodes

Junho Kim, Taehyun Kim, and Jung-Yong Lee (KAIST, Korea)

[P2-253]

14:00-15:30

Numerical Simulation Study of Trap Effects on Charge Transport in Quantum Light-Emitting Diodes

Kyung Jae Lee, Eunyong Seo, Dong Hyun Kim, Jin Young Jang, Dae Geun Song, and Donggu Lee (Gyeongsang Nat'l Univ., Korea)

[P2-254]

14:00-15:30

Conductivity Heightening Effect of Using Green-Solvent for Hole Transport Layer in All-Solution Process

Jeong-Beom Kim, Jae-In Yoo, Seong-Cheon Kang, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[P2-255]

14:00-15:30

Improve of Charge Balance Using  $Zn_{1-x}Mg_xO$  Layer in All-Solution Processed Inverted QDLED

Su-Hyeon Lee, Jae-In Yoo, Sung-Cheon Kang, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[P2-256]

14:00-15:30

Improvement of Quantum Dot Light Emitting Diodes Performance by Doping PCBM to Hole Transport Layer

Jeong-Bin Park, Hyo-Bin Kim, and Jang-Kun Song (Sungkyunkwan Univ., Korea)

[P2-257]

14:00-15:30

A Study on Current Characteristics in Pixel Units of Quantum Dot Light Emitting Diodes

Hansol Seo, Geun Woo Baek, and Jeonghun Kwak (Seoul Nat'l Univ., Korea)



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14:00-15:30

Enhancing Performance of InP Quantum Dot Light-Emitting Diodes by Employing Acid-Treated ZnMgO Electron Transport Layer

Minhyung Lee and Jeonghun Kwak (Seoul Nat'l Univ., Korea)

[P2-259]

14:00-15:30

Degradation Characteristics of Inverted Quantum Dot Light-Emitting Diodes with Different Hole-Transporting Layer

Jaekwon Kim and Jeonghun Kwak (Seoul Nat'l Univ., Korea)