

IDMC 2022 Daily Program

The following program is based in Taiwan time zone (GMT+8).

Wednesday, April 27	
Opening & Keynote: International Smart Display Application Conference (智慧顯示應用趨勢國際論壇)	
Time: 13:30-16:50	Room 401, 4F
Chair: Janglin (John) Chen (Taiwan)	
13:30-13:35	Chair's Address Janglin (John) Chen (Taiwan)
13:35-13:40	VIP Speech Cheng-Chin Lu (Taiwan)
13:40-13:45	Organizer Speech Frank Ko (Taiwan)
13:45-13:50	Organizer Speech Chih-I Wu (Taiwan)
13:50-14:20	Electric Vehicles: New Generation of Technological Industry Revolution is on the Road Rahil Ansari (Taiwan)
14:20-14:50	Panel: Future World Accelerator Jim Hung (Taiwan)
14:50-15:20	Co-Creating the Future Through Display Innovation Wei-Lung Liao (Taiwan)
15:20-15:50	E Ink. We Make Surfaces Smart and Green JM.Hung (Taiwan)
15:50-16:20	Enabling Metal-Oxide Inflections for Future Displays Louis Cheng (Taiwan)
16:20-16:50	PC Innovation & Display Opportunities C. Y. Liang (Taiwan)

Thursday, April 28		
Session 1- Active Matrix Devices & Display Electronics		
Time: 09:00-10:30		Room 504a, 5F
Chairs: Yung-Hui Yeh (Taiwan), Chih-Lung Lin (Taiwan)		
Thu-S01-01	09:00-09:20	High Performance and Low Cost ZnO Based Thin-Film Transistors by Spray Pyrolysis Jin Jang (South Korea)
Thu-S01-02	09:20-09:40	Inkjet-Printed Inorganic Materials for Thin-Film Transistors Chih-Hung Chang (United States)
Thu-S01-03	09:40-10:00	Materials for Solution-Processed and Mechanically Flexible Active-Matrix Backplane and Sensor Technologies Antonio Facchetti (United States)
Thu-S01-04	10:00-10:20	Machine Learning Using Thin-Film Devices for Letter Recognition Mutsumi Kimura (Japan)
Thu-S01-05	10:20-10:35	Flexible Differential Amplifier Circuits Comprising Indium Gallium Zinc Oxide Thin-Film Transistors Chih-Han Tseng (Taiwan)

Session 2- Transparent, Flexible Printed Display and E-paper		
Time: 09:00-10:30		Room 504bc, 5F
Chairs: Yusin Lin (Taiwan), Glory Chen (Taiwan)		
Thu-S02-01	09:00-09:20	A Novel See-Through Transparent Display Interactive System Kuan-Ting Chen (Taiwan)
Thu-S02-02	09:20-09:40	Integrated Cover Window for Foldable Displays Wei-Feng Xu (Taiwan)
Thu-S02-03	09:40-09:55	Stretchable, Washable, and Rewritable Electrophoretic E-Paper with Self-Cracking Electrodes Zhiguang Qiu (China)
Thu-S02-04	09:55-10:10	Solution-Coated Gas Barrier Technology Introduction and Application Cheng-Yi Chen (Taiwan)

Session 3- Devices and Manufacturing		
Time: 11:00 - 12:30		Room 504a, 5F
Chairs: Shih-Tse Wu (Taiwan), I-Chun Chen (Taiwan)		
Thu-S03-01	11:00-11:20	AI Enables Zero Defect Manufacturing Chi-An Kao (Taiwan)
Thu-S03-02	11:20-11:40	AI Smart Water Treatment Jacky Chang (Taiwan)
Thu-S03-03	11:40-11:55	Low-Temperature-Processed Complementary Inverters Comprising Metal-Oxide-Based Thin-Film Transistors Hong-Ru Chen (Taiwan)
Thu-S03-04	11:55-12:10	Numerical Study of Ideal Subthreshold Characteristics of Amorphous In-W-O Nanosheet Thin-Film Transistor Wan-Ta Fan (Taiwan)
Thu-S03-05	12:10-12:25	HfZrO₂ Ferroelectric Thin-Film Transistors Based on InGaZnO Channels for Memory Applications Chun-Wei Chang (Taiwan)

Session 4- Transparent, Flexible Printed Display and E-paper		
Time: 11:00 - 12:30		Room 504bc, 5F
Chairs: Yusin Lin (Taiwan), Glory Chen (Taiwan)		
Thu-S04-01	11:00-11:20	A Highly Flexible 5.6-inches Foldable AMOLED Display with Symmetrical Panel Stacking Wan-Tsang Wang (Taiwan)
Thu-S04-02	11:20-11:40	Development of Kaleido™ Po-Yuan Lo (Taiwan)
Thu-S04-03	11:40-11:55	Synchronously Micropatterning and Nanowelding Silver Nanowires by UV-Programable Surface Atom Diffusion for High-performance Transparent Electrodes Ting Wang (China)
Thu-S04-04	11:55-12:10	Simulation of Edge Ghosting for Electrophoretic E-Paper Displays Based on Particle Dynamics Zheng Zeng (China)

Session 5- Interactive Display and System		
Time: 14:00 - 15:30		Room 504a, 5F
Chairs: Paul Chen (Taiwan), Guo-Dung Su (Taiwan)		
Thu-S05-01	14:00-14:20	PhoXonic Microsystems for Augmented and Virtual Reality Xavier Rottenberg (Belgium)
Thu-S05-02	14:20-14:40	Advanced Large-Area Fingerprint-on-Display Technology for Next Generation Display Chun-Hung Kuo (Taiwan)
Thu-S05-03	14:40-14:55	Research of High Responsivity Amorphous Indium Zinc Oxide Photo Sensor Yu-Han Chen (Taiwan)
Thu-S05-04	14:55-15:10	A Novel Low Leakage Current Photodiode Reset Method for Active Pixel Sensing Array Yi-Cheng Yuan (Taiwan)
Thu-S05-05	15:10-15:25	Image Processing for the Differential Optical Fingerprint Signals Yi-Cheng Yuan (Taiwan)

Session 6- Measurement, Standard, and Human Factor		
Time: 14:00 - 15:30		Room 504bc, 5F
Chairs: Kerson Wang (Taiwan), Yu-Ping Lan (Taiwan)		
Thu-S06-01	14:00-14:20	Image-Based Color Measurement of Near-Eye Displays Pei-Li Sun (Taiwan)
Thu-S06-02	14:20-14:40	MicroLED Defect Inspection by AI Kuo-Lung Lo (Taiwan)
Thu-S06-03	14:40-14:55	A Method for Reducing Metameric Color Mismatch in Camera-Based Display Measurement Chia-Yu Lee (Taiwan)
Thu-S06-04	14:55-15:10	Investigation of Contact Resistance and Transport Mechanism in P-Type SnO Thin-Film Transistor Yu-Ting Tsai (Taiwan)
Thu-S06-05	15:10-15:25	Measuring Motion-to-Photon Latency for Head-Mounted Displays Chia-Yu Shen (Taiwan)

Friday, April 29

Session 7- 3D Display and AR/VR Technology		
Time: 09:00-10:30		Room 504a, 5F
Chairs: Chien-Yue Chen (Taiwan), Hoang-Yan Lin (Taiwan)		
Fri-S07-01	09:00-09:20	Optical Technology in Near-Eye Glass for Mixed Reality Ching-Cherng Sun (Taiwan)
Fri-S07-02	09:20-09:40	VR/AR and Metaverse Yi-Ping Hung (Taiwan)
Fri-S07-03	09:40-09:55	True-Color Holographic Recording Using Photopolymer Materials Hsuan Yu Chu Ko (Taiwan)
Fri-S07-04	09:55-10:10	Resolution-Tripled Light Field Displays by Recombining Subpixels with Zero Sampling Error Wenchao Yang (China)
Fri-S07-05	10:10-10:25	The Study of Lightguide Combiner for Augmented Reality Devices Based on Volume Holographic Optical Elements Wen-Kai Lin (Taiwan)

Session 8- Quantum Dot Materials and Light-Emitting Devices I		
Time: 09:00-10:30		Room 504bc, 5F
Chairs: Chih-Hsin Chen (Taiwan), Shu-Ru Chung (Taiwan)		
Fri-S08-01	09:00-09:20	Formation and Light Characteristics of Solid State Incandescent Light Emitting Devices Yue Kuo (United States)
Fri-S08-02	09:20-09:35	High-Efficiency Full Color Nanoporous Structure QD Based Micro-LED Display Yu-Ming Huang (Taiwan)
Fri-S08-03	09:35-09:50	Fabricated High Resolution QD Color Conversion Layer via Super-Fine Inkjet Printing for Microdisplay Application Chen-Te Lin (Taiwan)
Fri-S08-04	09:50-10:05	Synthesis of Highly Bright, Narrow Emissivity InP Quantum Dots Cheng-Yang Chen (Taiwan)
Fri-S08-05	10:05-10:20	Extensive Emission Tuning of Highly Efficient CuInSe₂ Quantum Dots by Doping Engineering Yuan Chen (Taiwan)

Session 9- mini-LED, u-LED and high-dynamic-range displays		
Time: 11:00 - 12:30		Room 504a, 5F
Chairs: Ray-Hua Horng (Taiwan), Yi-Hsin Lin (Taiwan)		
Fri-S09-01	11:00-11:20	Innovative Solutions for MiniLED & MicroLED Display Jason Yeh (Taiwan)
Fri-S09-02	11:20-11:40	Unleash the Potential of Gallium Nitride (GaN) for MicroLED Applications with PoroGaN Tongtong Zhu (United Kingdom)
Fri-S09-03	11:40-11:55	The Color Conversion Layer with High Quantum Yield for Micro-LED Displays Han-Yu Tsai (Taiwan)
Fri-S09-04	11:55-12:10	Numerical Analysis for V-Shape Defect and Random Alloy Fluctuation in Red Green and Blue Nitride Based LEDs Shih-Min Chen (Taiwan)

Session 10- Quantum Dot Materials and Light-Emitting Devices II		
Time: 11:00 - 12:30		Room 504bc, 5F
Chairs: Chih-Hao Chang (Taiwan), Shih-Jung Ho (Taiwan)		
Fri-S10-01	11:00-11:15	The Optical and Thermal Properties of Quantum-Dot-Film on Glass Substrates for LED Applications Yu-Ming Jao (Taiwan)
Fri-S10-02	11:15-11:30	MMES Ligand Exchange of CdSe QDs via Co-Solvent Method Nien-Ju Lee (Taiwan)
Fri-S10-03	11:30-11:45	Transparent Electroluminescent QLEDs with High-Brightness Double-Side-Emission Fabricated in Atmosphere Shuan Yang (Taiwan)
Fri-S10-04	11:45-12:00	Diamond Powder Package with Colloidal Quantum Dot LEDs Ching Chang (Taiwan)
Fri-S10-05	12:00-12:15	High Brightness and Low Turn-on Voltage Quantum Dot Light-Emitting Diode Via Hybrid Hole Transport Layer Jie-Syuan Lu (Taiwan)

Session 11- LC Technology I		
Time: 14:00 - 15:30		Room 504a, 5F
Chairs: Hung-Ming Chen (Taiwan), Cheng-Huan Chen (Taiwan)		
Fri-S11-01	14:00-14:20	Display on Demand Shang-Chiang Lin (Taiwan)
Fri-S11-02	14:20-14:40	Invisible Camera Display Chia-Hao Tsai (Taiwan)
Fri-S11-03	14:40-14:55	Novel 2-Domain Polymer Sustained Alignment LCD with Ultra Wide Viewing Angles Chin-An Lin (Taiwan)
Fri-S11-04	14:55-15:10	Multi-Stable Active and Passive Hybrid Control Smart Window Chien-Yi Lin (Taiwan)
Fri-S11-05	15:10-15:25	Electric-Controllable Achromatic Polarization Rotator Pei-Ru Chen (Taiwan)

Session 12- Organic, Perovskite Devices and Materials		
Time: 14:00 - 15:30		Room 504bc, 5F
Chairs: Shun-Wei Liu (Taiwan), Meng-Lin Tsai (Taiwan)		
Fri-S12-01	14:00-14:20	Surface Crystal Growth of Perovskite Nanocrystals for Highly Efficient Light-Emitting Diodes Takayuki Chiba (Japan)
Fri-S12-02	14:20-14:35	High External Quantum Efficiency over 80% In Organic Light Emitting Diodes with High-Index Substrates and High Dipole Ratio Emitters Po-Jui Chen (Taiwan)
Fri-S12-03	14:35-14:50	Modification of Polyelectrolyte-Based Transport Layer on the Luminescence of NIR Perovskite Light-Emitting Diodes Johan Iskandar (Taiwan)
Fri-S12-04	14:50-15:05	A Complete Exciton Diffusion Model Including Both Singlet and Triplet Behaviors Coupling with Poisson and Drift-Diffusion Solver Hsiao-Chun Hung (Taiwan)
Fri-S12-05	15:05-15:20	Impedance Characterization Comparison between Single Host and Exciplex-Forming Co-Host System of High-Performance Yellow Phosphorescence OLEDs Nurul Ridho Al Amin (Taiwan)

Session 13- LC Technology II		
Time: 16:00-17:30		Room 504a, 5F
Chairs: Ivan Wu (Taiwan), Yung-Hsun Wu (Taiwan)		
Fri-S13-01	16:00-16:20	Innovative LC Materials with Advanced Performance: Super High Transmittance & Fast Switching PS-VA Min-Tzu Chuang (Taiwan)
Fri-S13-02	16:20-16:35	Using a Broadband Cholesteric Liquid Crystal Reflector to Achieve a Projector-Based Transparent Display Chun-Chuan Wang (Taiwan)
Fri-S13-03	16:35-16:50	Liquid Crystal Lens Fabricated with Improved Alignment Layer of TiO₂ and Polyimide Composite Mareena Antony (Taiwan)
Fri-S13-04	16:50-17:05	Photo-Aligned Liquid Crystal Cell for Writing Geometrical Phase Holographic Optical Elements Minh Chau Nguyen Hong (Taiwan)
Fri-S13-05	17:05-17:20	Pattern Complex Image to Liquid Crystal Sample by Digital Micro-Mirror Device Yi-Jyun Ke (Taiwan)

Session 14- Automotive, IoT, Medical, Digital Signage and Novel Applications		
Time: 16:00-17:30		Room 504bc, 5F
Chairs: Chiu-Lien Yang (Taiwan), Yu-Chieh Lin (Taiwan)		
Fri-S14-01	16:00-16:20	A Medical Image Display System Using Naked-Eye 3D Technology Ruey-Jer Weng (Taiwan)
Fri-S14-02	16:20-16:40	A.R.T. Eye Care Display Kai-Chieh Chang (Taiwan)
Fri-S14-03	16:40-17:00	Flexible Thin-Film IC and Heterogeneous Integration Packaging Chung-Hung Chen (Taiwan)
Fri-S14-04	17:00-17:15	Glass Based Capacitive Micromachined Ultrasonic Transducers (cMUTs) for Medical Applications Pin-Hsiang Chiu (Taiwan)
Fri-S14-05	17:15-17:30	High-Bandwidth Flexible White Light System for Visible Light Communication Konthoujam James Singh (Taiwan)

Poster Session

Time: 16:00-17:30, April 28 (Thursday)

522 Lobby, 5F

P-01-01	Multiplex Correlated Double Sampling Circuit on Glass for Active Pixel Sensor Array Hua-Wei Liu (Taiwan)
P-01-02	A method of Motion Sickness Reduced by Reference Image on the Vehicle's Side Window Chien-Ju Li (Taiwan)
P-01-03	Correction and Alignment of the Three-Dimensional Image in the Transparent Display Interactive System Chunyen Huang (Taiwan)
P-01-04	In-Display Photo-Sensing Application by Utilizing Nickel-Induced Laterally Crystallization Polysilicon Thin Film Transistor Po-An Lin (Taiwan)
P-02-01	Maskless Digital Lithography Material Technology Yu-Ying Hsu (Taiwan)
P-02-02	Activated Carbonization of Recycled Photoresist and Its Preparation of Activated Carbon Cloth Ching-Mao Wu (Taiwan)
P-02-03	The Innovative Near-IR Activated Debonding Adhesive for Disassembly of Polarizer Module Shuang-Huei Chen (Taiwan)
P-02-04	Titanium Doped IGZO Thin Films by Using the Pulsed Magnetron Sputtering Deposition Sheng-Hui Chen (Taiwan)
P-02-05	Fabrication of CAAC-IGZO Thin Films Using High Power Impulse Magnetron Sputtering Sheng-Hui Chen (Taiwan)
P-02-06	Stress Compensation for LED Device Mounted on In-Mold Plastic Substrate Yu-Ming Peng (Taiwan)
P-03-01	Flexible Differential Amplifier Based on a-IGZO TFTs Pu-Yuan Lin (Taiwan)
P-03-02	Enhancement of Resistive Switching Characteristics of InWZnO-Based CBRAM with Low Power Consumption Shu-Wei Chang (Taiwan)
P-03-03	Cu-Based Memory Technology with Novel Amorphous Oxide for Display Application Sheng-Jie Su (Taiwan)
P-03-04	Utilizing Tin Oxide Semiconductor for High Performance P-Channel Thin Film Transistor Applications You-Syuan Zhou (Taiwan)
P-03-05	Metal Contamination Suppression on Nickel-Induced Laterally Crystallized Low-Temperature Polycrystalline Silicon Thin-Film Transistor for High Resolution Display Peripheral Circuits Yu-Ting Tsai (Taiwan)
P-03-06	Effect of Varying Dopant Concentration of Indium-Based Oxide Thin-Film Transistors for Display Applications Yu-Chen Chen (Taiwan)
P-04-01	Application of Augmented Reality Technology in Radiology, Endoscopy and Surgery Shi-Jie Chen (Taiwan)
P-04-02	Computer Hologram Generation Using Deep Learning Neural Network Zih-Fan Chen (Taiwan)
P-04-03	Dual-Depth Holographic 3D Head-Up Display Chih-Hao Chuang (Taiwan)
P-04-04	Design of Composite Optical Element in Floating Display Ding-Yu Zhuo (Taiwan)

P-04-05	The Design of 2D Eye-Box Expanded Volume Holographic Waveguide with Wide Field of View for AR Application Wan-Lin Li (Taiwan)
P-05-01	Non-Doped White-Light Organic Light-Emitting Diode with Single Bipolar Emitting Layer Chun-Chieh Chu (Taiwan)
P-05-02	New Thermally Activated Delayed Fluorescence Emitter for High Efficiency OLED Chin-Huang Chiu (Taiwan)
P-05-03	High-Efficiency Blue Fluorescent OLED Based on Pyrene Derivative Host Material Chieh-An Chen (Taiwan)
P-05-04	Achieving Low and Consistent Reflectance toward Various Angles by Altering the OLED Structure to Reduce Scattering Chi-Jui Chang (Taiwan)
P-05-05	High-Efficiency and Low Roll-Off Red OLEDs Based on Earth-Abundant Cu(I) Complex Chen-Han Lu (Taiwan)
P-05-06	Effect of Hole Transport Materials on Red CsPbI₃ Perovskite Quantum-Dot Light-Emitting Diodes Zong-Liang Tseng (Taiwan)
P-05-07	A Novel Transparent Composite Electrode for Flexible OLEDs Jui-Ming Wang (Taiwan)
P-05-08	Realization of Efficient Red OLEDs for Phototherapy Light Sources Chia-Chen Chung (Taiwan)
P-05-09	Organic Light-Emitting Diodes Integrated with Polyimide/Porous Silica Hybrid Films for Out-Coupling Enhancement Chung-An Hsieh (Taiwan)
P-05-10	Efficient NIR OLED Using Thermally Activated Delayed Fluorescence Material Based on Extended π-Backbone Yu Kun Tang (Taiwan)
P-05-11	Realizing Deep-Red/Near-Infrared Phosphorescent OLED with Iridium(III) Complexes with [-2, -1, 0] Charged Ligands Hao-Che Kao (Taiwan)
P-05-12	Efficient White Organic Light-Emitting Diodes Having Multiple Emitters in Single Emitting Layer and Efficiency Analyses Chih-Wei Huang (Taiwan)
P-05-13	Enhancing Efficiency of OLED Displays with Reflective 3D Pixel Configuration Yi-Ting Chen (Taiwan)
P-05-14	High-Efficiency Deep-Blue/Ultraviolet Organic Light Emitting Diodes Jing-Xiang Huang (Taiwan)
P-06-02	Dynamic Driving Algorithm for Field Sequential Color LCDs with Mini-LED Backlight by Deep Learning Guowei Zou (China)
P-06-03	Development of MicroLED Display Using Ion Implantation Technology Yu-Hsuan Hsu (Taiwan)
P-06-04	Development of Fine Pitch MicroLED Display Using SpecLED Simulation Yu-Hsuan Hsu (Taiwan)
P-06-05	Low Yellowness Index Structure for Low-Diffraction Transparent AM-Micro LED Backplane Design Ying-Ting Liou (Taiwan)
P-06-06	Internal Quantum Efficiency Improvement of Optimizing Multiple Quantum Well for Micro LEDs Wei-An Lin (Taiwan)
P-07-01	Transparent LTPS TFT Backplane with Low-Throughput Process by Mask-Less Digital Lithography Technology Kung-Ching Chu (Taiwan)

P-08-01	Mini-LED Driving Circuit Utilizing Pulse Width Modulation for Reducing Power Consumption Chih-I Liu (Taiwan)
P-08-02	Mini-LED Circuit to Compensate Threshold-Voltage Variation and Current- Resistance Rise with Pulse-Width Modulation for Liquid-Crystal Display Backlight Chia-Lun Lee (Taiwan)
P-08-03	Gate Driver on Array for External Compensation System for AMOLED Display Ting-Yi Yi (Taiwan)
P-08-04	An Investigation on the Effect of Pixel Crosstalk on LED Display Quality Chi-Cheng Lung (Taiwan)
P-08-05	Real Hand Pose Estimation for Interface Control Chih-Yuan Liu (Taiwan)
P-08-06	Pixelwise Illuminance Registration for Displays at Oblique Perspectives Yu-Chen Chou (Taiwan)
P-09-01	Realization of Sleep Assistant Light Source on Flat-Panel Display Tzu-An Chou (Taiwan)
P-09-02	Curved Characteristic and Flicker Interaction Effect of Flexible Displays Shao-Tang Hung (Taiwan)
P-10-01	A Highly Stable Full-Color Device for Display and VLC applications Konhoujam James Singh (Taiwan)
P-10-02	Dynamic Information Smoothing Technology in an Interactive Windows of Smart Mobile Vehicles Yi-Wei Luo (Taiwan)
P-10-03	3D Conformal Laminating Simulation and Verification of Flexible Substrate on Rigid Carrier for Vehicle Application Hsiao-Fen Wei (Taiwan)
P-10-04	Diffuser-Based Optical Encryption for Face Recognition System Ming-Husan Wu (Taiwan)
P-11-01	Polyimide-Free Planner Alignment of Nematic Liquid Crystal on Organic Single-Crystal Rubrene Pravinraj Selvaraj (Taiwan)
P-11-02	Novel 2-Domain Polymer Sustained Alignment LCD with Dual Gamma Technology Jia-Long Wu (Taiwan)
P-11-03	Liquid Crystal Privacy Films using Dual Liquid Crystal Alignment Structures Ching-An Chih (Taiwan)
P-11-04	Immediate Detection of Polarization States of Unknown Polarized Lights Using Dichroic Dyes-Doped Liquid Crystals Shu-Ching Chang (Taiwan)
P-11-05	Waveguide Liquid Crystal Devices with Asymmetrical Light Scattering Properties and their Applications Yuan-Chang Tsai (Taiwan)
P-11-06	Flicker Simulation Model with Different Refresh Rate in VA liquid Crystal Display Shun-Ling Hou (Taiwan)
P-11-07	The Improvement of Motion Blur with Fast Response Time VA Tzu-Wei Kuo (Taiwan)