

Eurodisplay 2024

Grenoble, France
18 - 20 September 2024

ISBN: 979-8-3313-2349-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2024) by Society for Information Display
All rights reserved.

Printed by Curran Associates, Inc. (2025)

For permission requests, please contact Society for Information Display
at the address below.

Society for Information Display
1475 S. Bascom Ave.
Suite 114
Campbell, California 95008-4006
USA

Phone: (408) 879-3901
Fax: (408) 879-3833

office@sid.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Graphene MODulator (GMOD) Technology.....	1
<i>N/A</i>	
Innovative Test Cost Reduction Methodology on Micro-LED Device Production by One Pass High Parallel Testing of Electric-Luminescence and Electrical Test.....	2
<i>K. Hasegawa, K. Miyauchi, H. Kaga</i>	
Optimized Low-Voltage PDLC Materials	6
<i>V. Lapanik, S. Timofeev</i>	
A Study on User Preference Towards HDR Format Decoding Strategies in Smartphones	9
<i>T. Cabana, P.R. Biswas, A. Carmone, P. Bernardi, E. Zalczer, F. Guichard</i>	
Multi-Output Gate Drivers Based on LTPS/LTPO TFTs for Mobile Displays.....	13
<i>H.W. Woo, H. Im, K.C. Moon, Y.S. Kim</i>	
Synthesis of Zinc Oxide-Based Conductive Films Applying for Antimicrobial Display Surfaces.....	16
<i>T. Ikuta, C. Li</i>	
Chiral Additives for Liquid Crystal Matrixes Based on Nano-Clay Doped with Quaternary Ammonium Salts.....	18
<i>A. Kasich, A.L. Hurski, A. Budko, A.P. Lugovski, A.A. Lugovski, V. Lapanik, S. Timofeev</i>	
High-Resolution Patterning Via Electrohydrodynamic (EHD)-Jet Printing for Quantum Dot Light-Emitting Diodes.....	21
<i>Y. Kim, M. Gensler, J. Kim, C. Boeffel, C.J. Han, K. Park, M.S. Oh, A. Wedel</i>	
GaN Microleds Modelling for Optical Communication.....	24
<i>S.E. Badaoui, P. Le Maitre, A. Bibie, C. Ballot, J. Simon, B. Miralles, B. Aventurier, R.E. De Lamaestre, P. De Martino, S. Jacob, Y. Le Guennec</i>	
Quantum Dot Color Conversion for microLED Displays: Current Limitations and Perspectives	28
<i>I. Nakonechnyi, W. Walravens</i>	
Characterization of GaN-On-Si Micro LEDs Matrix Using a New Ultra Wide Field of View Imaging Photometer Resolving Micro LED Pixel Size Down to 2.5 Mm	29
<i>P. Le Maitre, X. Leboeuf, A. Lardeau-Falcy, C. Ballot, T. Diagne, J. Simon, P. De Martino, T. Bignon, M. Bacci, M. Luet, T. Leroux</i>	
Riemannian Color Difference Metric for Spatial Color Gratings.....	33
<i>P. Candry, P. De Visschere, K. Neyts</i>	
Waveguide-Mode Light Scattering Devices Based on Polymer-Network Liquid Crystals	38
<i>C.T. Wu, Y.C. Tsai, C.T. huang, S.W. Wang, K.T. Cheng</i>	
Experimental and Theoretical Approaches to Detect Latent Lateral Leakage Current of OLED Device.....	40
<i>K. Morimoto, R. Satoh, S. Noh, T. Miyamae</i>	
Investigating of Sputtering Power Effects on Photoluminescence of Zinc Oxide Thin Film on Aluminum Doped Zinc Oxide Film.....	44
<i>S. Komatsu, C. Li</i>	

Automotive Switchable Privacy Displays: Measurements and Evaluations.....	47
<i>K. Blankenbach, B. Civanlar, S. Reichel</i>	
Large-Area Hydrogenated Amorphous Silicon Schottky-Photosensor Arrays for Display Integration.....	51
<i>M.M. Dettling, P. Schalberger, N. Fruehauf</i>	
Printed Chip Interconnects for MicroLED Displays	54
<i>K. Waldner, H. Baur, P. Schalberger, N. Fruehauf, E. Fuchs, P. Ramaswamy, N.V. Bulcke, D. Keeshan, S. Drozdek</i>	
Property and Reliability Analysis of Flexible ITZO DG TFTs Under Bias Stress	58
<i>D. Lin, R. Chen, M.C. Tseng, F.S.Y. Yeung, H.S. Kwok</i>	
Two Color microLED Photoluminescence Emission from 3.5 Mm Sub-Pixels by Successive Epitaxial Growth on 200 Mm GaN on Silicon	61
<i>M. Charles, S. Torrengo, M. Lafossas, G. Veux, F. Barbier, P. Ferret, F. Rol, J.C. Pillet, B. Aventurier, M. Douma, F. Fedeli, P. Le Maitre, J. Simon, F. Levy, A. Dussaigne</i>	
Digital LEDs with Photonic Crystals Integration	64
<i>A. Lardeau, C. Talagrand, S. Altazin, Q. Abadie, K. Abadie, M. Arch, F. Baudin, N. Bernard-Henriques, J. Bilde, V. Chambinaud, J. Dechamp, S. Dominguez, L. Gabelle, A. Ghazouani, A. Lagrange, F. Laulagnet, F. Mercier, A. Pinos, S. Poncet, J. Ramer, F. Rol, A. Tavernier, L. Truong, M. Volpert, M. Broell</i>	
Ultra-Low-Power, High-Brightness Color Microdisplay for AR Eyewear.....	68
<i>L. Charrier, M. Chapran, G. Haas</i>	
Red Emitting InGaN Nanopyramids Grown on 2D material/SiC for Monolithic RGB Micro-Displays.....	72
<i>A. Dussaigne, C. Paillet, N. Rochat, D. Cooper, A. Grenier, Z. Saghi, A. Jannaud, S. Vezian, B. Damilano, A. Michon, B. Hyot</i>	
Impact of Epi-Structure, Current Density and Micro-LED Dimensions on Angular Distribution of Electroluminescence Far-Field Emission	73
<i>F. Rol, S. Altazin, N. Michit, B. Miralles, C. Ballot, B. Aventurier, P. De Martino, P. Le Maitre, J. Simon</i>	
Enhancing OLED Microdisplay Performance Using Microlens Arrays.....	77
<i>G.T. Ayenew, R. Debard, G. Haas, J. Hauptmann, L. Mendizabal, N. Miloud-Ali, T. Offermans, T. Scharf, M. Schnieper, S. Siitonan, C. Steiner</i>	
Europe's Dependence on Display Imports from Asia – How to Secure Crucial Technologies for Key Industries and Defense	81
<i>B. Slischka</i>	
InP/ZnSe/ZnS QDs with Increased Absorption and Stability	85
<i>J. Niehaus</i>	
Color Converter Based on Giant Shell Quantum Dot/Polymer Composites	87
<i>S. Becker, J. Niehaus</i>	
Nematic Hosts and Alignment Layers for Monodomain Blue-Phase	89
<i>S. Chauhan, D. Cuypers, M. Wahle, G. Lazarev, H. De Smet</i>	
Chiral Liquid Crystal Diffraction Gratings for Display Applications.....	92
<i>K. Neyts, X. Ke, M. Stebryte, R. Sharma, I. Nys</i>	

Evaluation of Inorganic Halide Perovskite Thin Films Realized by Pulsed Laser Deposition for microLEDs Color Conversion Layer.....	94
<i>E. Parrat, F. Dupont, F. Templier</i>	
Cathodoluminescence Study of Carrier Diffusion Length in InGaN/GaN Quantum Wells to Improve μLEDs Efficiency.....	98
<i>S. Litschgi, N. Rochat, A. Dussaigne, Q. Durlin, G. Veux, F. Barbier, B. Gayral, F. Rol</i>	
Harnessing of Visible Light in Emissive III-V on Si Microstructures: Application to Multiple-Quantum-Well Color Conversion Layers	101
<i>A. Ndiaye, A. Ghazouani, R. Sommer, E. Vermande, M. Rabarot, C. Seassal, E. Drouard, C. Jany, B.B. Bakir</i>	
Submicron Narrow-Band Phosphors in Luminescent Color Filters & Next Generation MiniLED and MicroLED Displays.....	105
<i>J. Murphy, D. Brewer, S. Camardello, Z. Chen, D. DePuccio, F. Pavinatto, J. Presley, A. Setlur, O. Siclovan, A. Yakimov</i>	
Optimization of Complex Process, Based on Design of Experiments, a Generic Methodology	108
<i>J. Baderot, Y. Cauchepin, A. Seiller, R. Fontanges, S. Martinez, J. Foucher E. Fuchs, M. Daanoune, V. Grenier, V. Barra, A. Guillen</i>	
Goniometric Measurements Using Photometric Robots with Imaging Luminance Measurement Devices (ILMDs).....	112
<i>K. Kirchhoff, I. Rotscholl, U. Kruger</i>	
Multi-Domain Azo-Dye Photo-Alignment LCD for Vertically Aligned Technology	116
<i>M.C. Tseng, H.W. Chiu, H.C. Chan, Y.L. Cheung, O. Vashchenko, V. Vaschenko, S.T. Tang, F.S.Y. Yeung, H.S. Kwok</i>	
Perovskite QDs – Essential for Color, Brightness and Power of Displays.....	120
<i>N.A. Luechinger</i>	
Commercializing Nanowire LEDs	123
<i>D. Laleyan, B. Le, G. Frolov, M. Stevenson, S. Coe-Sullivan</i>	
Progress in Ferroelectric Liquid Crystal Displays (invited Paper)	124
<i>H.S. Kwok, Z.B. Sun, Z.N. Yuan, S. Abhishek</i>	
Mass Transfer of Efficient <5μm MicroLED Chips for Efficient and High Performance SmartWatch Displays	125
<i>P. Gilet, M. Broell, M. Mairy, P. Tchoulfian, C. Talagrand, W. Ludurczak, T. Lacave, I.C. Robin, X. Hugon</i>	
Molecular Seeding Technology: Enabling Display and Sensing Applications of the Future.....	129
<i>N/A</i>	
How to Reach MicroLED Display Promises?	130
<i>I.C. Robin, H. Lebrun</i>	
Overview of AR/MR Optical Display Architectures	134
<i>N/A</i>	
Holographic Displays for Mass-Market Augmented Reality.....	135
<i>E. Buckley, A. Kaczorowski</i>	

What Limits the Scale of microLED Displays?.....	141
<i>I. Kymissis, R. Alshanbari, K. Behrman, O. Durnan, V. Kumar, C. McGinn, M. Noga</i>	
High Throughput Elastomer Stamp Mass-Transfer for MicroIC Display Drivers	142
<i>J. Brown</i>	
Key Technologies Used in Medical Displays to Guarantee Highest Possible Image Quality and Consistency	143
<i>T. Kimpe, J. Rostang, B. Diricx</i>	
IRIS: Integrating 3D Sensing with LCD Screens for Enhanced Touch Interaction.....	144
<i>E. Hemery, E. Santoul</i>	
Design and Synthesis of III-V Semiconductor Colloidal Quantum Dots for the Integration of NIR/SWIR Imaging Capabilities on micro-LED Displays.....	146
<i>P. Reiss</i>	
Navigating the Challenges of the Augmented Reality Paradigm.....	147
<i>E. Marcellin-Dibon</i>	
Colloidal Quantum Dot Infrared Image Sensors Supporting Augmented Vision Applications	148
<i>P.E. Malinowski, V. Pejovic, A.B. Siddik, S. Lee, A.U. Zaman, I. Lieberman, J.H. Kim, T. Weydts, M.J. Lim, L.M. Hagelsieb, I.P. Monroy, W. Song, M. Vildanova, N. Papadopoulos, Z. Zahiri, J. Bentell, S. Thijs, N. Chandrasekaran, A. Malainou, G. Karve, P. Heremans, J. Lee, D. Cheyns</i>	
Adoption Dynamics of microLEDs in AR.....	149
<i>R. Mermet-Lyaudoz, E. Virey, Z. Bouhamri</i>	
Combinatorial Patterning of Core/Shell Quantum Nanoplatelets by e-MCP Nanoxerography for High Resolution Color Converter Microdisplays	150
<i>P. Tyagi, E. Yassitepe, E. Palleau, S. Raffy, A. Cuche, S. Poncet, J.C. Pillet, S. Altazin, F. Guerin, Y.P. Lin, M. D'Amico, L. Ressier</i>	
Thin Camera Using Tomography in a Slab Waveguide.....	155
<i>A.R.L. Travis</i>	

Author Index