

Display Systems and  
Engineering

Materials and  
Components

Optical Design

Lighting  
Technologies

Display Drivers  
and Interfaces

Display Packaging

Manufacturing  
Technologies

Reliability and  
Testing

Applications

*Journal of*  
**Display  
Technology**

*This Print Collection Contains the Following Issues:*

April 2016	Volume 12	Number 4	IJDTAL
May 2016	Volume 12	Number 5	
June 2016	Volume 12	Number 6	

---

For the April 2016 issue, see p. 313 for the Table of Contents.

For the May 2016 issue, see p. 423 for the Table of Contents.

For the June 2016 issue, see p. 513 for the Table of Contents.

---



A JOINT IEEE / OSA PUBLICATION



# Journal of Display Technology

A JOINT IEEE / OSA PUBLICATION

APRIL 2016

VOLUME 12

NUMBER 4

IJDTAL

(ISSN 1551-319X)

---

## PAPERS

### Liquid Crystal Displays

- A Block Truncation Coding Algorithm and Hardware Implementation Targeting 1/12 Compression for LCD Overdrive ..  
..... *S. Kim, D. Lee, J.-S. Kim, and H.-J. Lee* 376
- Light Leakage Induced by Spontaneous Distortion of the Nematic Director in Bulk Defect Structures .....  
..... *Y. Wang, Z. Zhang, and X. Zhou* 402

### TFT Backplanes

- Correlation Between Carrier Concentration Distribution,  $I-V$  and  $C-V$  Characteristics of a-InGaZnO TFTs .....  
..... *C.-C. Hsu, H.-P. Chen, and W.-C. Ting* 328
- The Current Behaviors of the Amorphous In-Ga-Zn-O Thin-Film Transistor Under Varying Illumination Conditions ...  
..... *Y.-H. Tai, C.-Y. Chang, and Y.-W. Chen* 351

### Holographic Displays

- Speckle Reduction by Spatial-Domain Mask in Digital Holography ..... *T. Fukuoka, Y. Mori, and T. Nomura* 315
- Achromatization in Optical Reconstruction of Computer Generated Color Holograms .....  
..... *J. Wang, H.-D. Zheng, and Y.-J. Yu* 390
- High-Efficiency Video-Rate Holographic Display Using Quantum Dot Doped Liquid Crystal .....  
..... *X. Li, C. P. Chen, Y. Li, P. Zhou, X. Jiang, N. Rong, S. Liu, G. He, J. Lu, and Y. Su* 362

---

(Contents Continued on Page 314)

JOURNAL OF DISPLAY TECHNOLOGY (ISSN 1551-319X) is published monthly by The Institute of Electrical and Electronics Engineers, Inc. Responsibility for the contents rest upon the authors and not upon the IEEE, the Society/Council, or its members. **IEEE Corporate Office**, 3 Park Avenue, 17th Floor, New York, NY 10016-5997. **IEEE Operations Center**, 445 Hoes Lane, Piscataway, NJ 08854-4141. **NJ Telephone**: +1 732 981 0060. **Price/Publication Information**: Individual copies: IEEE Members \$20.00 (first copy only), nonmembers price \$248.00 per copy. (Note: Postage and handling charge not included.) Member and nonmember subscription prices available on request. Available in microfiche and microfilm. **Copyright and Reprint Permissions**: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy for private use of patrons, provided the per-copy fee of \$31.00 is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. For all other copying, reprint, or republication permission, write to Copyrights and Permissions Department, IEEE Publications Administration, 445 Hoes Lane, Piscataway, NJ 08854-4141. Copyright © 2016 by The Institute of Electrical and Electronics Engineers, Inc. All rights reserved. **Postmaster**: Send address changes to JOURNAL OF DISPLAY TECHNOLOGY, IEEE, 445 Hoes Lane, Piscataway, NJ 08854-4141. GST Registration No. 125634188. CPC Sales Agreement #40013087. Return undeliverable Canada addresses to: Pitney Bowes IMEX, P.O. Box 4332, Stanton Rd., Toronto, ON M5W 3J4, Canada. IEEE prohibits discrimination, harassment and bullying. For more information, visit <http://www.ieee.org/nondiscrimination>. Printed in U.S.A.

---

### Light-Emitting Diodes

Electroluminescent Properties of WLEDs With the Structures of Ce:YAG Single Crystal/Blue Chip and Sr <sub>2</sub> Si <sub>5</sub> N <sub>8</sub> :Eu <sup>2+</sup> /Ce:YAG Single Crystal/Blue Chip .....	<i>Y. Du, C. Shao, Y. Dong, and Q. Yang</i>	323
Two Photolithographic Patterning Schemes for PEDOT:PSS and Their Applications in Organic Light-Emitting Diodes ..	<i>D. Wang, S. Ouyang, Y. Xie, T. Tan, D. Zhu, X. Xu, and H. H. Fong</i>	338
High-Power LED Chip-on-Board Packages With Diamond-Like Carbon Heat-Spreading Layers .....	<i>P.-Y. Tsai, H.-K. Huang, C.-M. Sung, M.-C. Kan, and Y.-H. Wang</i>	357
Fabrication and Characterization of High-Voltage LEDs Using Photoresist-Filled-Trench Technique .....	<i>X. Zou, Y. Cai, W. C. Chong, and K. M. Lau</i>	397
Dual-Color InGaN/GaN Pyramidal Micro Light-Emitting Diode Selectively Grown on SiO <sub>2</sub> Masked Si Substrate .....	<i>W. Chen, J. Lin, Y. Chen, X. Han, J. Chen, Q. Liao, Y. Qiu, Z. Wu, Y. Liu, and B. Zhang</i>	412

### Image Quality

A Morphological Mean Filter for Impulse Noise Removal .....	<i>P.-H. Lin, B.-H. Chen, F.-C. Cheng, and S.-C. Huang</i>	344
A Power-Saving Histogram Adjustment Algorithm for OLED-Oriented Contrast Enhancement .....	<i>L.-M. Jan, F.-C. Cheng, C.-H. Chang, S.-J. Ruan, and C.-A. Shen</i>	368

### 3D Displays

Full-Color Stereoscopic Imaging With a Single-Pixel Photodetector .....	<i>E. Salvador-Balaguer, P. Clemente, E. Tajahuerce, F. Pla, and J. Lancis</i>	417
---	--	-----

---