

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:

| | | | |
|----------------|-----------|----------|--------|
| July 2016 | Volume 12 | Number 7 | IJDTAL |
| August 2016 | Volume 12 | Number 8 | |
| September 2016 | Volume 12 | Number 9 | |

For the July 2016 issue, see p. 665 for the Table of Contents.

For the August 2016 issue, see p. 771 for the Table of Contents.

For the September 2016 issue, see p. 879 for the Table of Contents.



A JOINT IEEE / OSA PUBLICATION



Journal of **Display Technology**

A JOINT IEEE / OSA PUBLICATION

SEPTEMBER 2016

VOLUME 12

NUMBER 9

IJDTAL

(ISSN 1551-319X)

PAPERS

Liquid Crystal Displays

- Temperature-Dependent Behavioral Model of Active-Matrix Liquid Crystal Displays for All Types of Liquid Crystals ...
..... *J.-M. Kim, D.-G. Lee, and S.-W. Lee* 881

TFT Backplanes

- Analytical Extraction Method for Density of States in Metal Oxide Thin-Film Transistors by Using Low-Frequency Capacitance–Voltage Characteristics
..... *W.-J. Wu, C.-L. Chen, X. Hu, X.-H. Xia, L. Zhou, M. Xu, L. Wang, and J.-B. Peng* 888
- Real-Time External Compensation of Threshold Voltage Shift Using Double-Gate Oxide TFTs in a Gate Driving System
..... *B.-H. You, S.-Y. Lee, S.-H. Hong, J.-H. Lee, H.-C. Kim, H.-R. Ju, M.-C. Choi, and D.-K. Jeong* 892
- TFT Compact Modeling
..... *X. Cheng, S. Lee, G. Yao, and A. Nathan* 898

3-D Displays

- A Silicon Microsystem for Generation of Infrared Patterned Light
..... *F. Carpignano, G. Rigamonti, D. Riccardi, M. De Fazio, and S. Merlo* 907
- Effect of Ocular Dominance on Touch Position
..... *S.-R. Kim, J.-M. Kim, J. Kim, and S.-W. Lee* 912
-

(Contents Continued on Page 880)

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 M5W3J4, Canada. IEEE prohibits discrimination, harassment and bullying. For more information, visit <http://www.ieee.org/nondiscrimination>. Printed in U.S.A.



Phosphors

| | | |
|--|---|-----|
| Photoluminescence Behavior of ZrO_2 : Eu^{3+} With Fixed Concentration of Eu^{3+} as a Function of Annealing Temperature | R. K. Tamrakar and K. Upadhyay | 917 |
| Structural Characterization of Gd_2O_3 Phosphor Synthesized by Solid-State Reaction and Combustion Method Using X-Ray Diffraction and Transmission Electron Microscopic Techniques | R. K. Tamrakar, D. P. Bisen, I. P. Sahu, K. Upadhyay, and M. Sahu | 921 |
| UV Induced Thermoluminescence and Photoluminescence Studies of Sm^{3+} Doped LaAlO_3 Phosphor | J. Kaur, D. Singh, N. S. Suryanarayana, and V. Dubey | 928 |
| Near UV-Blue Emission From Cerium Doped Zirconium Dioxide Phosphor for Display and Sensing Applications | N. Tiwari, V. Dubey, J. Dewangan, and N. Jain | 933 |

LEDs

| | | |
|---|---|-----|
| An On-Board Life Estimation Technique for Lights Using High Power White LEDs | F. Ruknudeen, S. Gervasis, V. Viswambharan, and S. Asokan | 938 |
| Self-Adaptive Conformal-Remote Phosphor Coating of Phosphor-Converted White Light Emitting Diodes | C. Li, H. Rao, W. Zhang, C. Zhou, Q. Zhang, and K. Zhang | 946 |
| Multifacet Microrod Light-Emitting Diode With Full Visible Spectrum Emission | Y.-J. Li, J.-R. Chang, S.-P. Chang, B.-W. Lin, Y.-H. Yeh, H.-C. Kuo, Y.-J. Cheng, and C.-Y. Chang | 951 |

Touch Interactivity

| | | |
|---|--|-----|
| Reduction of Noise Spikes in Touch Screen Systems by Low Pass Spatial Filtering | S. Gao, D. McLean, J. Lai, C. Micou, and A. Nathan | 957 |
|---|--|-----|

Image Quality

| | | |
|--|----------------------------|-----|
| Edge Collapse-Based Dehazing Algorithm for Visibility Restoration in Real Scenes | B.-H. Chen and S.-C. Huang | 964 |
| Haze Model and Dispersion Control for LCD Antiglare Cover Glass by Silk-Screen Printing Method | J. Choi | 971 |
| Correlation Between Peak Velocity of Saccades and Susceptibility to Motion Blur | M. Emoto and H. Fukuda | 976 |

Micro-Projection Displays

| | | |
|---|--|-----|
| Compact and High-Brightness Helmet-Mounted Head-Up Display System by Retinal Laser Projection | T. North, M. Wagner, S. Bourquin, and L. Kilcher | 982 |
|---|--|-----|
