Oxide-based Materials and Devices VII

Ferechteh H. Teherani
David C. Look
David J. Rogers
Editors

14–17 February 2016
San Francisco, California, United States

Sponsored and Published by
SPIE
Contents

vii Authors
ix Conference Committee

TRANSPARENT CONDUCTING OXIDES

9749 02 Debye tail mobility enhancement in ZnO:Ga/ZnO structures [9749-1]

LIGHT EMISSION AND MANAGEMENT

9749 09 Efficient light emission from hybrid inorganic/organic semiconductor structures by energy level optimization (Invited Paper) [9749-7]

9749 0B Preparation and characterizations of aluminoborates powders for the development of a new generation of white phosphors for solid-state lighting (Invited Paper) [9749-9]

9749 0E Study on the persistent luminescence of diopside nanotracers CaMgSi2O6: Eu2+, Mn2+, Pr3+ (Invited Paper) [9749-12]

OPTICAL/PHOTONIC MATERIALS, PROPERTIES, AND DEVICES

9749 0K Magnetic field effects of Rydberg Excitons in Cu2O (Invited Paper) [9749-18]

9749 0N Large persistent photoconductivity in strontium titanate single crystals [9749-21]

9749 0O Temperature-induced changes in optical properties of thin film TiO2-Al2O3 bi-layer structures grown by atomic layer deposition [9749-22]

9749 0P The development of thin film metrology by coherence scanning interferometry (Invited Paper) [9749-23]

9749 0Q ZnO-based multiple channel and multiple gate FinMOSFETs (Invited Paper) [9749-24]

P-TYPE ZNO

9749 0T Optical and structural properties of P-doped ZnO microsphere synthesized by pulsed laser ablation [9749-27]

9749 0U Low temperature preparation of Ag-doped ZnO nanowire arrays for sensor and light-emitting diode applications [9749-28]
BAND GAP ENGINEERING AND PHOTODETECTORS

9749 0W  ZnMgO-based UV photodiodes: a comparison of films grown by spray pyrolysis and MBE (Invited Paper) [9749-31]

9749 0Y  High Mg content wurtzite phase Mg$_x$Zn$_{1-x}$O epitaxial film grown via pulsed-metal organic chemical vapor deposition (PMOCVD) (Invited Paper) [9749-33]

9749 10  Exciton localization and large Stokes shift in quaternary BeMgZnO grown by molecular beam epitaxy [9749-34]

FUNCTIONAL OXIDES AND SPINTRONICS

9749 12  Low-voltage extended gate organic thin film transistors for ion sensing based on semiconducting polymer electrodes (Invited Paper) [9749-36]

9749 16  Electrolysis-induced protonation of VO$_2$ thin film transistor for the metal-insulator phase modulation (Invited Paper) [9749-39]

9749 17  Structural, magnetic, and Magneto optical properties of Fe$_3$O$_4$/NiO bilayers on MgO(001) (Invited Paper) [9749-40]

9749 18  RRAM-based hardware implementations of artificial neural networks: progress update and challenges ahead (Invited Paper) [9749-75]

PHOTOVOLTAICS II

9749 1G  Planar heterojunction type perovskite solar cells based on TiO$_x$ compact layer fabricated by chemical bath deposition (Invited Paper) [9749-44]

9749 1H  Electrodeposition of ZnO-doped films as window layer for Cd-free CIGS-based solar cells [9749-45]

9749 1I  Impact of the deposition conditions of buffer and windows layers on lowering the metastability effects in Cu(In,Ga)Se$_2$/Zn(S, O)-based solar cell (Invited Paper) [9749-49]

9749 1J  Titanium oxide electron-selective layers for contact passivation of thin-film crystalline silicon solar cells [9749-46]

OXIDES AS ENVIRONMENTAL CATALYSTS AND SENSORS

9749 1L  Comparison between different metal oxide nanostructures and nanocomposites for sensing, energy generation, and energy harvesting (Invited Paper) [9749-51]

9749 1O  Zinc-oxide optical sensor for highly sensitive refractive index sensing [9749-55]

9749 1P  Impact of glycerol on zinc-oxide-based thin film transistors with indium molybdenum oxide transparent electrodes [9749-56]
Spatially resolved resistance of NiO nanostructures under humid environment [9749-57]

POSTER SESSION

In2O3 based perovskite solar cells [9749-47]
A novel flexible C2H2 gas sensor based on Ag-ZnO nanorods on PI/PTFE substrate [9749-58]
Highly flexible room temperature NO2 sensor based on WO3 nanoparticles loaded MWCNTs-RGO hybrid [9749-59]
Enhancement in optical and structural properties of Zn0.85Mg0.15O nanorods over thin films synthesized by hydrothermal chemical treatment [9749-65]
Influence of oxygen partial pressure on optical and structural properties of RF sputtered ZnO thin films [9749-66]
Temperature sensing using a Cr:ZnGa2O4 new phosphor [9749-67]
Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Adelung, R., 0U
Alemà, Fikadu, 0Y
Ali, Rizwan, 0Q
Alnoor, Hatim, 1L
Aßmann, M., 0K
Avrutin, Vitaly, 10
Bay, S., 09
Beletsky, Valeria, 0Y
Blumstengel, S., 09
Bos, Adrie, 0E
Bouttemy, Muriel, 11
Burner, P., 0B
Chakrabarti, B., 18
Chakrabarti, S., 20, 21
Chen, Xiaoichi, 1J
Chen, Ji, 1J
Chung, Gwiy-Sang, 1T, 1U
Collins, Liam F., 1Q
Cretu, V., 0U
Dafna, D., 21
Deng, Huiyang, 1J
DeWitt, Daniel, 1J
Djurisic, Aleksandra B., 1S
Dong, Qi, 1S
Elamurug, Elangovan, 1P
Ehag, Sami, 1L
Endo, Kenji, 16
Etcheberry, Arnaud, 11
Ferrier, A., 0B
Flores, Raquel, 1P
Fröhlich, D., 0K
Fujiwara, Y., 0T
Furumoto, Yoshikazu, 1G
Gautier-Lumeau, I., 0B
Ghadi, H., 20
Glais, E., 22
Grönwald, P., 0K
Guimaraes, V. F., 0B
Hafiz, Shohan, 10
Han, Suting, 12
Hariskos, Dimitrios, 1H
Harris, James S., 1J
Hecht, S., 09
Heckel, J., 0K
Heller, E. R., 02
Hertog, Brian, 0Y
Hierro, A., 0W
Higashihata, M., 0T
Hildebrandt, Thibaud, 1H, 11
Honkanen, Seppo, 0O
Huang, Hung-Lin, 0Q
Huo, YiJie, 1J
Ibenez, A., 0B
Ibupoto, Zafar Hussain, 1L
Ilievlev, Anton V., 1Q
Ikebuchi, T., 0T
Ivanov, Iliya N., 1Q
Jacobs, Christopher B., 1Q
Jia, Shiliang, 12
Jia, Jieyang, 1J
Joshi, Pooran C., 1Q
Kamins, Theodore I., 1J
Kang, Yangsen, 1J
Katase, Takayoshi, 16
Kobin, Björn, 09
Koch, N., 09
Kuepper, Karsten, 17
Kurtz, A., 0W
Kuschel, Olga, 17
Kuschel, Timo, 17
Kuwabara, Takayuki, 1G
Lafehr, David T., 1J
Ledaev, Oleg, 0Y
Lee, Ching-Ting, 0Q
Lee, Hsin-Ying, 0Q
Lincot, Daniel, 1H, 11
Liu, Fangzhou, 1S
Liu, Jing, 1O
Liu, Yi, 1J
Look, David C., 02
Lopez-Ponce, M., 0W
Lu, Ching-Ying, 1J
Lupan, O., 0U
Lyu, Zheng, 1J
Majdik, Mateusz, 1P
Mai, L. J. Q., 0B
Maity, S., 20
Mansfield, Daniel, 0P
Marder, S. R., 09
Marín-Borrás, V., 0W
McCluskey, Matthew D., 0N
Merrikh-Bayat, F., 18
Conference Committee

Symposium Chairs

Jean-Emmanuel Broquin, IMEP-LAHC (France)
Shibin Jiang, AdValue Photonics, Inc. (United States)

Symposium Co-chairs

David L. Andrews, University of East Anglia (United Kingdom)
Alexei L. Glebov, OptiGrate Corporation (United States)

Program Track Chair

James G. Grote, Air Force Research Laboratory (United States)

Conference Chairs

Ferechteh H. Teherani, Nanovation (France)
David C. Look, Wright State University (United States)
David J. Rogers, Nanovation (France)

Conference Program Committee

Ivan Bozovic, Brookhaven National Laboratory (United States)
Subhananda Chakrabarti, Indian Institute of Technology Bombay (India)
Kwang-Leong Choy, University College London (United Kingdom)
Jean-Jacques Delaunay, The University of Tokyo (Japan)
Aleksandra B. Djurišić, The University of Hong Kong (Hong Kong, China)
Michael Gerhold, United States Army Research Office (United States)
Silvia Gross, Università degli Studi di Padova (Italy)
Hanns-Ulrich Habermeier, Max-Planck-Institut für Festkörperforschung (Germany)
Michael A. Harper, CIV USN ONR GLOBAL (United States)
Adrián Hierro, Universidad Politécnica de Madrid (Spain)
Axel Hoffmann, Technische Universität Berlin (Germany)
Seref Kalem, TÜBITAK BILGEM (Turkey)
Ching-Ting Lee, National Cheng Kung University (Taiwan)
Tariq Manzur, Naval Undersea Warfare Center (United States)
Fabrice Odobel, Université de Nantes (France)
Tatsuo Okada, Kyushu University (Japan)
Seong-Ju Park, Gwangju Institute of Science and Technology (Korea, Republic of)
Thorrey Pauporté, Ecole Nationale Supérieure de Chimie de Paris (France)
Matthew R. Phillips, University of Technology, Sydney (Australia)
Manijeh Razeghi, Northwestern University (United States)
Vinod Eric Sandana, Graphos (France)
Chong-Xin Shan, Changchun Institute of Optics, Fine Mechanics and Physics (China)
Maria Vamvakaki, Foundation for Research and Technology-Hellas (Greece)
Bruno Viana, Ecole Nationale Supérieure de Chimie de Paris (France)
Magnus Willander, Linköping University (Sweden)
Hideki Yamamoto, NTT Basic Research Laboratories (Japan)

Session Chairs

1. Transparent Conducting Oxides
   David Look, Wright State University (United States)

2. Light Emission and Management
   David J. Rogers, Nanovation (France)

3. Nanomaterials and Related Devices
   David Look, Wright State University (United States)

4. Optical/Photonic Materials, Properties, and Devices
   Ching-Ting Lee, National Cheng Kung University (Taiwan)

5. P-type ZnO
   Bruno Viana, Ecole Nationale Supérieure de Chimie de Paris (France)

6. Band Gap Engineering and Photodetectors
   Adrián Hierro, Universidad Politécnica de Madrid (Spain)
   Michael D. Gerhold, United States Army Research Office (United States)

7. Functional Oxides and Spintronics
   Jean Fompeyrine, IBM Research - Zürich (Switzerland)

8. Photovoltaics I: P-Type Dye-Sensitized Solar Cells
   Fabrice Odobel, Université de Nantes (France)

9. Photovoltaics II
   Fabrice Odobel, Université de Nantes (France)
   Philippe Bove, Nanovation (France)

10. Oxides as Environmental Catalysts and Sensors
    Magnus Willander, Linköping University (Sweden)