

JAPANESE JOURNAL OF APPLIED PHYSICS

Volume 49, Number 7, July 2010 [Issue 1 of 2]

Rapid Communications

- 070201 **Picosecond Carrier Recombination of Single-Crystalline GaN Nanorods Grown on Si(111) Substrates** (3 pages)
Atsushi Tackeuchi, Chan Ho Yoo, Tae Whan Kim, Young Hae Kwon, Tae Won Kang, Takao Nukui, Taisuke Fujita, Yoshiaki Nakazato, Yu Saeki, Sotaro Izumi
- 070202 **Room-Temperature Epitaxial Growth of High-Quality *m*-Plane InAlN Films on Nearly Lattice-Matched ZnO Substrates** (3 pages)
Tomofumi Kajima, Atsushi Kobayashi, Kohei Ueno, Kazuma Shimomoto, Tomoaki Fujii, Jitsuo Ohta, Hiroshi Fujioka, Masaharu Oshima
- 070203 **Electroluminescence Characterization of (20 $\bar{2}$ 1) InGaN/GaN Light Emitting Diodes with Various Wavelengths** (3 pages)
Roy B. Chung, You-Da Lin, Ingrid Koslow, Nathan Pfaff, Hiroaki Ohta, Junseok Ha, Steven P. DenBaars, Shuji Nakamura
- 070204 **An Efficient Threshold Voltage Control in Complementary Metal–Oxide–Semiconductor Field Effect Transistor Using Spacer Stress Engineering** (3 pages)
Chien-Chao Huang, Hao-Yu Chen, Sanboh Lee
- 070205 **Characteristics of Terahertz Radiation Emitted From Fractal Photoconductive Antennas** (3 pages)
Fumiaki Miyamaru, Yu Saito, Mitsuo Wada Takeda, Bo Hou, Weijia Wen, Ping Sheng
- 070206 **Optimization of Device Structures for Bright Blue Semipolar (10 $\bar{1}\bar{1}$) Light Emitting Diodes via Metalorganic Chemical Vapor Deposition** (3 pages)
Yuji Zhao, Junichi Sonada, Ingrid Koslow, Chih-Chien Pan, Hiroaki Ohta, Jun-Seok Ha, Steven P. DenBaars, Shuji Nakamura
- 070207 **New Combined Matrix Model for the Analysis of Merged Optical Fiber Gratings with both Long- and Short-Period Fiber Gratings** (3 pages)
Jinho Bae, Junkye Bae
- 070208 **A Simple Synchronization Method for Optical Sampling Eye Monitor** (3 pages)
Takashi Mori, Akihito Otani
- 070209 **Nonvolatile Memory Effects of ZnO Nanoparticles Embedded in an Amorphous Carbon Layer** (3 pages)
Fushan Li, Maziar Shakerzadeh, Bengkang Tay, Tailiang Guo, Taewhan Kim
- 070210 **Carbon-Nanotube-Enhanced Thermal Contactor in Low Contact Pressure Region** (3 pages)
Takashiro Tsukamoto, Masayoshi Esashi, Shuji Tanaka
- 070211 **Growth of GaAs_{1-x}Bi_x/Al_yGa_{1-y}As Multi-Quantum-Well Structures** (3 pages)
Takuma Fuyuki, Yoriko Tominaga, Kunishige Oe, Masahiro Yoshimoto
- 070212 **Field Emission from a P-Type Silicon Single Emitter Sharpened by Focused Ion Beam Milling** (3 pages)
Tomomi Yoshimoto, Kazuki Sato, Tatsuo Iwata
- 070213 **Synthesis of the Higher-Order Diamondoid Hexamantane Using Low-Temperature Plasmas Generated in Supercritical Xenon** (3 pages)
Sven Stauss, Hiroyuki Miyazoe, Tomoki Shizuno, Koya Saito, Takehiko Sasaki, Kazuo Terashima

Regular Papers

Semiconductors, dielectrics, and organic materials

- 071001 **Crystal Polarity Effects on Magnesium Implantation into GaN Layer** (4 pages)
Kuan-Ting Liu, Shouu-Jinn Chang, Sean Wu, Yoshiji Horikoshi
- 071101 **Thermoelectric Properties of Polycrystalline Ca_{0.9}Yb_{0.1}MnO₃ Prepared from Nanopowder Obtained by Gas-Phase Reaction and Its Application to Thermoelectric Power Devices** (7 pages)
Atsuko Kosuga, Yifeng Wang, Kunio Yubuta, Kunihito Koumoto, Ryoji Funahashi
- 071102 **Method of Decoupling the Bias Temperature Instability Component from Hot Carrier Degradation in Ultrathin High-*k* Metal–Oxide–Semiconductor Field-Effect Transistors** (6 pages)
Akiko Masada, Izumi Hirano, Shigeto Fukatsu, Yuichiro Mitani
- 071103 **Effects of Energetic Ion Bombardment on Structural and Electrical Properties of Al-Doped ZnO Films Deposited by RF-Superimposed DC Magnetron Sputtering** (5 pages)
Norihito Ito, Nobuto Oka, Yasusi Sato, Yuzo Shigesato

(Continued on third cover)

(Continued)

- 071104 **Optimization of the Growth Conditions for Molecular Beam Epitaxy of $Mg_xZn_{1-x}O$ ($0 \leq x \leq 0.12$) Films on Zn-Polar ZnO Substrates** (5 pages)
Hiroyuki Yuji, Ken Nakahara, Kentaro Tamura, Shunsuke Akasaka, Yoshio Nishimoto, Daiju Takamizu, Takeyoshi Onuma, Shigefusa F. Chichibu, Atsushi Tsukazaki, Akira Ohtomo, Masashi Kawasaki
- 071201 **Effect of Heat Treatment on 1.47 eV Band in CdTe Films on GaAs(100) Substrates** (4 pages)
Chikara Onodera, Masaaki Yoshida, Tsunemasa Taguchi
- 071301 **Novel Damascene Gate Metal-Oxide-Semiconductor Field-Effect Transistors Fabricated by *In situ* Arsenic- and Boron-Doped Epitaxy** (5 pages)
Yoshiaki Kikuchi, Yasushi Tateshita, Yuki Miyanami, Hitoshi Wakabayashi, Yukio Tagawa, Naoki Nagashima
- 071302 **Deep-Level Transient Spectroscopy and Photoluminescence Studies of Formation and Depth Profiles of Copper Centers in Silicon Crystals Diffused with Dilute Copper** (8 pages)
Minoru Nakamura, Susumu Murakami
- 071501 **Fabrication of Nonsintered Alumina-Resin Hybrid Films by Inkjet-Printing Technology** (5 pages)
Hun Woo Jang, Jihoon Kim, Hyo-tae Kim, Youngjoon Yoon, Sung-nam Lee, Haejin Hwang, Jonghee Kim
- 071502 **Piezoelectric Loss Performance in $Pb(Mg_{1/3}Nb_{2/3})O_3$ - $PbTiO_3$ Single Crystals** (4 pages)
Aditya Rajapurkar, Seyit O. Ural, Yuan Zhuang, Ho-Yong Lee, Ahmed Amin, Kenji Uchino
- 071503 **Low-Temperature Sintered $Pb(Zr,Ti)O_3$ - $Pb(Mn,Sb)O_3$ - $Pb(Zn,Nb)O_3$ for Multilayer Ceramic Actuators** (6 pages)
Dandan Wan, Qian Li, Joo-Young Choi, Ji-Won Choi, Ying Yang, Seok-Jin Yoon
- 071504 **Atomic Layer Deposition and Properties of Silicon Oxide Thin Films Using Alternating Exposures to SiH_2Cl_2 and O_3** (4 pages)
Won-Jun Lee, Chang-Hee Han, Jae-Kyun Park, Youn-Seoung Lee, Sa-Kyun Rha
- 071505 **Improved Dielectric Properties of Low-Temperature-Sintered (Ba,Sr)TiO₃-Based Ceramics by Ge Substitution** (4 pages)
Jong-Yoon Ha, Seok-Jin Yoon, Dae-Yong Jeong, Ji-Won Choi
- 071601 **Development of a Generating System to Inspect Some Specific Types of Wrinkle** (5 pages)
Huu Phuong Hoang, Sung Lim Ko
- 071602 **Step and Flash Imprint of Fluorinated Silicon-Containing Resist Materials for Three-Dimensional Nanofabrication** (5 pages)
Satoshi Takei
- 071603 **The Charge Transport in Organic Field-Effect Transistor as an Interface Charge Propagation: The Maxwell-Wagner Effect Model and Transmission Line Approximation** (8 pages)
Martin Weis, Jack Lin, Dai Taguchi, Takaaki Manaka, Mitsumasa Iwamoto
- 071604 **Characteristics of Electrically Switchable Wettability Surfaces of Liquid Crystal and Polymer Composite Films** (4 pages)
Ya-Ping Chiu, Cheng-Yu Shen, Yi-Hsin Lin
- 071605 **Self Contact Organic Transistors** (5 pages)
Jun-ichi Inoue, Hiroshi Wada, Takehiko Mori
- 071701 **Thermal Stability of Liquid Crystals on Blended Polyimide Layers Treated by Ion Beam Irradiation** (3 pages)
Dai-Hyun Kim, Hong-Gyu Park, Young-Hwan Kim, Byoung-Yong Kim, Chul-Ho Ok, Jeong-Min Han, Dae-Shik Seo

Photonics, quantum electronics, optics, and spectroscopy

- 072101 **Design of the Ring Remote Phosphor Structure for Phosphor-Converted White-Light-Emitting Diodes** (6 pages)
Ming-Te Lin, Shang-Ping Ying, Ming-Yao Lin, Kuang-Yu Tai, Sheng-chieh Tai, Chih-Hsuan Liu, Jyh-Chen Chen, Ching-Cherng Sun
- 072102 **Effect of Ridge Growth on Wafer Bowing and Light Extraction Efficiency of Vertical GaN-Based Light-Emitting Diodes** (4 pages)
Jae Hyoung Ryu, S. Chandramohan, Hyung Gu Kim, Hee Yun Kim, Hyun Kyu Kim, Nam Han, Ji Hye Kang, Periyayya Uthirakumar, Eun Kyung Suh, Chang-Hee Hong, Hyun Kyong Cho, Hyun Don Song, Ho-Ki Kwon
- 072103 **Self-Heating Effect on the Two-State Lasing Behaviors in 1.3- μ m InAs-GaAs Quantum-Dot Lasers** (4 pages)
Hai-Ming Ji, Tao Yang, Yu-Lian Cao, Peng-Fei Xu, Yong-Xian Gu, Zhan-Guo Wang

(Continued on preceding page)

Japanese Journal of Applied Physics Vol. 49, No. 7 (2010)

発行 社団法人 応用物理学会 〒102-0073 東京都千代田区九段北1丁目12番3号 井門九段北ビル 電話 03-3238-1041
印刷 小宮山印刷工業株式会社 〒162-0808 東京都新宿区天神町78番地 電話 03-3260-5211
2010年7月25日発行 国内定価 10,000円 年額 180,000円 (JAP & APEX)
正会員学会会員の購読料はJAP付加会費として各学会の会費に含む。

(Continued)

- 072104 **Vertical GaN-Based Light-Emitting Diodes Structure on Si(111) Substrate with Through-Holes** (3 pages)
Jingting Wei, Baijun Zhang, Gang Wang, Bingfeng Fan, Yang Liu, Wentao Rao,
Zhicong Huang, Weimin Yang, Tufu Chen, Takashi Egawa
- 072105 **Picosecond-Pulse-Pumped Distributed-Feedback Thick-Film Waveguide Blue Laser Using Fluorescent Brightener 135** (4 pages)
Hirofumi Watanabe, Hirota So, Yuji Oki, Shigehisa Akine, Takashige Omatsu
- 072201 **Origin of UV Sensitivity of SiON Film and Bidirectional UV Trimming of SiON Microring Resonator** (5 pages)
Takashi Tatewaki, Yasuo Kokubun
- 072501 **Three-Dimensional Display System Based on Integral Imaging with Viewing Direction Control** (7 pages)
Minyoung Shin, Ganbat Baasantseren, Ki-Chul Kwon, Nam Kim, Jae-Hyeung Park
- 072502 **Fabrication of Organic Spin-on-Glass Microring Resonator with a Narrow Gap between a Microring Resonator and a Waveguide Using Nanoimprint Lithography** (3 pages)
Hiroyuki Okamoto, Kenzo Yamaguchi, Ken-ichiro Nakamatsu, Hidenori Sogabe,
Shinji Matsui, Masanobu Haraguchi, Toshihiro Okamoto, Masuo Fukui
- 072503 **New Differential Phase Detection Method for Signal Waveform Modulation Multi-Level Discs** (4 pages)
Mingming Yan, Jing Pei, Haizheng Xu, Longfa Pan
- 072504 **Anisotropic Diffusion Filter Based Blob-Mura Defect Detection in Thin Film Transistor Liquid Crystal Display Panel** (5 pages)
Young-Chul Song, Doo-Hyun Choi
- 072601 **Synchrotron-Based X-ray Spectroscopic Investigation of Nitrogen-Doped Ge-Bi (8.4 at. %)-Te Thin Films during the Amorphous-to-Crystalline Structural Phase Transition** (4 pages)
Kihong Kim, M.-C. Jung, Ju Chul Park, Sang Jun Choi, Hyun-Joon Shin
- 072602 **Nanocrystalline Films Formation of 4,7-Bis(4-triphenylamino)benzo-2,1,3-thiadiazole through Electrophoretic Deposition** (6 pages)
Yuanyuan Zhu, Zhengkai Si, Lingfeng Qian, Minzhao Xue, Qiaorong Sheng, Qing Zhang, Yangang Liu
- 072701 **Modeling a Passively Q-Switched Nd:YVO₄ Laser with an Application to Spatio-Temporal Instability** (5 pages)
Ming-Dar Wei
- 072702 **Numerical Approach for Determination of Cutback Length to Estimate Dispersion and Loss Parameters of Terahertz Waveguides** (5 pages)
Ken Ishikawa, Carlito Ponceca, Jr., Elmer S. Estacio, Satoru Takatori, Nobuhiko Sarukura, Makio Ishiguro
- 072703 **Formation of Transparent SiO₂ Protective Layer on Polycarbonate by 157 nm F₂ Laser for Lightweight Automobile Window** (4 pages)
Yoshihiko Nojima, Masayuki Okoshi, Hidetoshi Nojiri, Narumi Inoue

Spintronics, superconductivity, and strongly correlated materials

- 073001 **Perpendicular Magnetic Anisotropy of Iron-Cobalt Silicide Nanowires on Si(110)** (3 pages)
Yutaka Ohira, Takayoshi Tanji
- 073002 **Magnetic and Magneto-Transport Properties of Nickel-Rich Ni-Mn-Ga Heusler Alloys** (5 pages)
Debabrata Pal, Kalyan Mandal

Device physics

- 074101 **Experimental Determination of Shear Stress induced Electron Mobility Enhancements in Si and Biaxially Strained-Si Metal-Oxide-Semiconductor Field-Effect Transistors** (5 pages)
Olivier Weber, Mitsuru Takenaka, Shin-ichi Takagi
- 074102 **Electrically and Continuously Tunable Optical Delay Line Based on a Semiconductor Laser** (3 pages)
Fang-Ming Wu, Peng-Chun Peng, Jason (Jyehong) Chen, Chun-Ting Lin, Gong-Ru Lin, Sien Chi
- 074103 **Turn-Around Phenomenon in the Degradation Trend of n-Type Low-Temperature Polycrystalline Silicon Thin-Film Transistors under DC Bias Stress** (4 pages)
Han-Wen Liu, Si-Ming Chiou, Fang-Hsing Wang
- 074104 **Possible Origins of Extra Threshold Voltage Variability in N-Type Field-Effect Transistors by Intentionally Changing Process Conditions and Using Takeuchi Plot** (4 pages)
Takaaki Tsunomura, Fumiko Yano, Akio Nishida, Toshiro Hiramoto

(Continued on preceding page)