

JAPANESE JOURNAL OF APPLIED PHYSICS

Volume 50, Number 4, April 2011 [Issue 1 of 2]

Rapid Communications

- 040201 Origin of Crossover in Current Density–Voltage Characteristics of Cu(In,Ga)Se₂ Thin Film Solar Cell Fabricated Using Lift-Off Process (3 pages)
Yasuhiro Abe, Takashi Minemoto, Hideyuki Takakura
- 040202 Fabrication of Transparent p-Type Cu_xZn_yS Thin Films by the Electrochemical Deposition Method (3 pages)
Kai Yang, Masaya Ichimura
- 040203 Perfluoropolymer as Planar Alignment Layer for Liquid Crystal Mixtures (3 pages)
Tatipamula Arun Kumar, Hideo Takezoe, Surajit Dhara
- 040204 Efficient Low-Driving-Voltage Blue Phosphorescent Homojunction Organic Light-Emitting Devices (3 pages)
Chao Cai, Shi-Jian Su, Takayuki Chiba, Hisahiro Sasabe, Yong-Jin Pu, Kenichi Nakayama, Junji Kido
- 040205 Intracavity Absorption Spectroscopy Using a Multimode Unidirectional Traveling-Wave Ring Dye Laser with a High Sensitivity of $5 \times 10^{-11} \text{ cm}^{-1}$ (3 pages)
Naoya Kato, Tomoyuki Ueda, Tomohiko Okazaki, Yasuo Sakuragi, Atsuo Morinaga
- 040206 Enhanced Properties in Single-Walled Carbon Nanotubes Based Saturable Absorber for All Optical Signal Regeneration (3 pages)
Hanond Nong, Maud Gicquel-Guézo, Laurent Bramerie, Mathieu Perrin, Frédéric Grillot, Romain Fleurier, Baolai Liang, Diana L. Huffaker, Christophe Levallois, Julie Le Pouliquen, Alain Le Corre, Olivier Dehaese, Slimane Loualiche
- 040207 Low-Temperature Growth of ZnO Films by Spray Pyrolysis (3 pages)
Kenji Yoshino, Yujin Takemoto, Minoru Oshima, Kouji Toyota, Koichiro Inaba, Ken-ichi Haga, Koichi Tokudome
- 040208 Impact of Implantation and Annealing on Channel Strain of Transistors with Embedded Silicon–Germanium Source and Drain (3 pages)
Choun Pei Wong, Jinping Liu, Johnson Kasim, Alex See, Ze Xiang Shen

Regular Papers

Semiconductors, dielectrics, and organic materials

- 041001 Separation of Thin GaN from Sapphire by Laser Lift-Off Technique (6 pages)
Tetsuzo Ueda, Masahiro Ishida, Masaaki Yuri
- 041101 High-Temperature Thermoelectric Property of Layered La_{2-2x}Ca_{1+2x}Mn₂O₇ Manganites ($0.75 \leq x \leq 1.0$) (6 pages)
Takeshi Toyoda, Naoya Sasaki, Kazuhiro Shimada, Maki Okube, Satoshi Sasaki
- 041102 Mechanism for Lower Resistivity of Niobium-Doped Anatase Titanium Dioxide Obtained in Oxygen-Reduced Atmosphere: Investigation by Generalized Gradient Approximation +U Method (6 pages)
Nozomi Orita
- 041301 Nano Structural and Thermoelectric Properties of SiGeAu Thin Films (5 pages)
Hiroaki Takiguchi, Masami Aono, Yoichi Okamoto
- 041302 Double Junction Tunnel Using Si Nanocrystalline Layer for Nonvolatile Memory Devices (6 pages)
Ryuji Ohba, Yuichiro Mitani, Naoharu Sugiyama, Mari Matsumoto, Shinobu Fujita
- 041303 Effect of Introducing β -FeSi₂ Template Layers on Defect Density and Minority Carrier Diffusion Length in Si Region near p- β -FeSi₂/n-Si Heterointerface (4 pages)
Hideki Kawakami, Mitsushi Suzuno, Keiichi Akutsu, Jun Chen, Karolin Jiptner, Takashi Sekiguchi, Takashi Suemasu
- 041501 Leakage Current Reduction Mechanism of Oxide–Nitride–Oxide Inter-Poly Dielectrics through the Post Plasma Oxidation Treatment (6 pages)
Woong Lee, Jeonggeun Jee, Dae-Han Yoo, Eun-Young Lee, Jinkwon Bok, Younwoo Hyung, Seoksik Kim, Chang-Jin Kang, Joo-Tae Moon, Yonghan Roh
- 041502 Ultraviolet-Light-Induced Desorption of Oxygen from SrTiO₃ Surfaces (6 pages)
Toru Hara, Takashi Ishiguro, Kazuo Shinozaki
- 041503 Improvement of Piezoelectric Properties of (K,Na)NbO₃ Films Deposited by Sputtering (7 pages)
Kenji Shibata, Kazufumi Suenaga, Kazutoshi Watanabe, Fumimasa Horikiri, Akira Nomoto, Tomoyoshi Mishima

(Continued on third cover)

- 041601 Effects of Gold Nanoparticles on Pentacene Organic Field-Effect Transistors (5 pages)
Keanchuan Lee, Martin Weis, Wei Ou-Yang, Dai Taguchi, Takaaki Manaka, Mitsumasa Iwamoto
- Photonics, quantum electronics, optics, and spectroscopy**
-
- 042101 Injection-Current-Induced Blue-Shift Laser Diode: Concept of Excess Carrier Conservation (14 pages)
Kengo Murasawa, Takehiko Hidaka, Koki Sato
- 042102 Light Output Power Enhancement of GaN-Based Light Emitting Diodes with Periodic Deflector Embedded on the Wet Etch Patterned Sapphire Substrate (4 pages)
Hyun Kyu Kim, Hyung Gu Kim, Hee Yun Kim, Jae Hyoung Ryu, Ji hye Kang, Nam Han, Bong Jun Kwon, Periyayya Uthirakumar, Myung Soo Han, Sin Ho Kang, Chang-Hee Hong
- 042103 A Nonpolar *a*-Plane GaN Grown on a Hemispherical Patterned *r*-Plane Sapphire Substrate (4 pages)
Geunho Yoo, Hyunsung Park, Hyoungjin Lim, Seunga Lee, Okhyun Nam, Youngbo Moon, Chaerok Lim, Bohyun Kong, Hyungkoun Cho
- 042201 Proposal of Micro-Trichroic Structures for High-Sensitivity Color Image Sensors (5 pages)
Yuta Suzuki, Yasuyuki Ozeki, Tomoki Yoshino, Kazuhiro Yamada, Michihiro Yamagata, Yasuhiro Tanaka, Kazuyoshi Itoh
- 042501 Resonator Fiber Optic Gyro with Bipolar Digital Serrodyne Scheme Using a Field-Programmable Gate Array-Based Digital Processor (6 pages)
Xijing Wang, Zuyuan He, Kazuo Hotate
- 042601 Phase-Change Kinetics of Bi-Fe-(N) Layer for High-Speed Write-Once Optical Recording (6 pages)
Sung-Hsiu Huang, Yu-Jen Huang, Hung-Chuan Mai, Tsung-Eong Hsieh
- 042602 A High-Retardation Polymer Film for Viewing Liquid Crystal Displays through Polarized Sunglasses without Chromaticity Change in the Image (6 pages)
Daisuke Kobayashi, Akihiro Tagaya, Yasuhiro Koike
- 042701 Composition and Characterization of Femtosecond Optical Lattices Using Double Axicon Holographic Pattern (7 pages)
Sung In Hwang, Dong Hoon Song, Do-Kyeong Ko
- 042702 Evaluation of Yields of γ -Rays Produced by Electrons from Gas Jets Irradiated by Low-Energy Laser Pulses: Towards "Virtual Radioisotopes" (4 pages)
Yuji Oishi, Takuya Nayuki, Alexei Zhidkov, Takashi Fujii, Koshichi Nemoto
- 042703 Generation of Quasi-CW Deep Ultraviolet Light below 200 nm by Two Successive Cavity Enhanced Second Harmonic Generators (4 pages)
Yun Zhang, Nobuyoshi Watanabe, Yoshiko Okada-Shudo, Masayoshi Watanabe, Masaharu Hyodo, Xiaoyang Wang, Yong Zhu, Chuangtian Chen, Teruto Kanai, Shuntaro Watanabe
- Device physics**
-
- 044301 Impact of Dot-Size and Dot-Location Variations on Capacitance-Voltage Characteristics and Flat-Band Voltage Shift of Quantum-Dot Non-Volatile Memory Cells (9 pages)
Yasuhsia Omura, Yuta Horikawa
- Nanoscale science and technology**
-
- 045101 Molecular and Electronic Tuning of Si/Carbon Nanotube Hybrid System (4 pages)
Mary Clare Sison Escaño, Tien Quang Nguyen, Hideaki Kasai
- 045102 Anchoring Au and Pt Nanoparticles on Multiwalled Carbon Nanotubes via Electron Beam Induced Amorphous Carbon Encapsulation (4 pages)
Wooseok Song, Sung Hwan Kim, Youseok Kim, Soo Youn Kim, Cheolho Jeon, Won Chel Choi, Byung Cheol Lee, Chong-Yun Park
- Crystal growth, surfaces, interfaces, thin films, and bulk materials**
-
- 045701 Density Functional Theory Investigation on the Dissociation and Adsorption Processes of N₂ on Pd(111) and Pd₃Ag(111) Surfaces (5 pages)
Allan Abraham B. Padama, Nobuki Ozawa, Yogi Wibisono Budhi, Hideaki Kasai
- 045801 Electronic and Optical Properties of Indium Zinc Oxide Thin Films Prepared by Using Nanopowder Target (5 pages)
Hwa-Min Kim, Kang Bae, Sunyoung Sohn
- 045802 High Rate Reactive Sputter Deposition of TiO₂ Films for Photocatalyst and Dye-Sensitized Solar Cells (10 pages)
Yasushi Sato, Takahiro Hashimoto, Amica Miyamura, Singo Ohno, Nobuto Oka, Koichi Suzuki, Daniel Glöß, Peter Frach, Yuzo Shigesato

(Continued on preceding page)

(Continued)

- 045803 **Self-Assembled Nano-heterostructural Thin Film for Optical Lens (5 pages)**
Kouji Fujimoto, Kyu-Hong Kyung, Seimei Shiratori
- 045804 **Effect of Heat Treatment on Ion Conductivity of Hydrated ZrO_2 Thin Films Prepared by Reactive Sputtering Using H_2O Gas (5 pages)**
Ning Li, Yoshio Abe, Midori Kawamura, Katsutaka Sasaki, Hidenobu Itoh, Tsutomu Suzuki
- 045805 **Crystallization Properties of $Ge_{1-x}Sb_x$ Thin Films ($x = 0.58\text{--}0.88$) (5 pages)**
Byeong Geun Kim, Jun-Hyun Bae, Seong-Min Jeong, Soon-Mok Choi, Hong-Lim Lee
- 045806 **Importance of Starting Procedure for Film Growth in Substrate-Type Microcrystalline-Silicon Solar Cells (5 pages)**
Jakapan Chantana, Yuichi Tsutsui, Yasushi Sobajima, Chitose Sada, Akihisa Matsuda, Hiroaki Okamoto
- 045807 **Microstructure Affecting Magnetoresistance of a $Cu_{75}\text{--}Fe_5\text{--}Ni_{20}$ Alloy (4 pages)**
Sung Kang, Mahoto Takeda, Dong-Sik Bae, Koki Takanashi, Masaki Mizuguchi

Device processing, fabrication and measurement technologies, and instrumentation

- 046501 **Research on Reaction Method of High Removal Rate Chemical Mechanical Polishing Slurry for 4H-SiC Substrate (5 pages)**
Hirosi Nitta, Akira Isobe, Park Jae Hong, Takashi Hirao
- 046502 **Electromagnetic Imprint Technique Combined with Electrophoretic Deposition Technique in Forming Microelectrode Structures (6 pages)**
Yung Chun Weng, Yung Jin Weng, Huang Sheng Fang, Sen Yeu Yang
- 046503 **Double Patterning Using Multilayer Hard Mask Process with Perhydropolysilazane (7 pages)**
Mamoru Terai, Masaaki Shinohara, Kazumasa Yonekura, Takuya Hagiwara, Tetsuro Hanawa, Teruhiko Kumada
- 046504 **Improved Resistive Switching Properties of Solution-Processed TiO_x Film by Incorporating Atomic Layer Deposited TiO_2 layer (3 pages)**
Insung Kim, Seungjae Jung, Jungho Shin, Kuyyadi P. Biju, Kyungah Seo, Manzar Siddik, Xinjun Liu, Jaemin Kong, Kwanghee Lee, Hyunsang Hwang
- 046505 **Uniform Magnetic Dot Fabrication by Nanoindentation Lithography (4 pages)**
Nobuaki Kikuchi, Tomohiko Hashimoto, Satoshi Okamoto, Ze Shen, Osamu Kitakami
- 046601 **Experimental Investigation of Mode Conversions of the T(0, 1) Mode Guided Wave Propagating in an Elbow Pipe (7 pages)**
Hideo Nishino, Toshiro Tanaka, Saori Katashima, Kenichi Yoshida
- 046602 **A New Technique for Enhancing Sensitivity of the 2ω Method by Applying a Bismuth Film Thermoreflectance Sensor on Top of the Metal Film-Dielectric Substrate Sample (4 pages)**
Ryozo Kato, Yibin Xu, Masahiro Goto

Cross-disciplinary areas

- 047301 **Analysis of High-Intensity Focused Ultrasound Source Using Time Reversal: Effect of Lamb-Like Waves (4 pages)**
Yasuhiro Kaneshima, Shin Yoshizawa, Shin-ichiro Umemura

Brief Notes

- 048001 **Nonreciprocal Propagation Characteristics of 2.5 THz Submillimeter Wave in Two-Layer Parallel-Plate Waveguide Containing n-InSb Slab at Room Temperature (2 pages)**
Shinichi Yodokawa, Yutaka Fujieda, Tetsuo Obunai
- 048002 **Nonconfocal Differential Interferometry Sensing Scheme for Scanning Probe Microscopy (2 pages)**
Yu-Cheng Lin, Stone Cheng
- 048003 **Transparent Cell for Protein Crystallization under Low Applied Voltage (2 pages)**
Takashi Wakamatsu, Yuuki Ohnishi
- 048004 **Light Controlled Piezoelectric Transformer (2 pages)**
Lucjan Kozielski