

Journal of Semiconductors



Volume 37 Number 2 February 2016

INVITED REVIEW PAPERS

- 021001 Surface acoustic wave devices for sensor applications (9 pages)**
Liu Bo, Chen Xiao, Cai Hualin, Mohammad Ali Mohammad, Tian Xiangguang, Tao Luqi, Yang Yi, and Ren Tianling
- SEMICONDUCTOR PHYSICS**
- 022001 Effects of reductive annealing on insulating polycrystalline thin films of Nb-doped anatase TiO₂: recovery of high conductivity (4 pages)**
Shoichiro Nakao, Yasushi Hirose, and Tetsuya Hasegawa
- 022002 Impact of stray charge on interconnect wire via probability model of double-dot system (6 pages)**
Chen Xiangye, Cai Li, Zeng Qiang, and Wang Xinqiao
- SEMICONDUCTOR MATERIALS**
- 023001 Catalyst-free growth of ZnO nanowires on various-oriented sapphire substrates by pulsed-laser deposition (5 pages)**
Tetsuya Shimogaki, Masahiro Takahashi, Masaaki Yamasaki, Taichi Fukuda, Mitsuhiro Higashihata, Hiroshi Ikenoue, Daisuke Nakamura, and Tatsuo Okada
- 023002 Ammonia-assisted synthesis method for CoTiO₃ nanoporous matrix (3 pages)**
Morteza Enhessari, Ali Salehabadi, Zeinab Nasrollahi, and Keyvan Ozaee
- 023003 The optimization functions of ICP discharge in preparation of Cu-Zn-Sn precursors and CZTS films by co-evaporation (5 pages)**
Li Ye, Chen Junfang, Ma Junhui, and Zhou Lifen
- 023004 Band gap bowing and crossing of B_xGa_{1-x}N alloy investigated by hybrid functional method (6 pages)**
Jiang Jiaping, Gai Yanqin, and Tang Gang
- 023005 Electronic structure and optical property of p-type Zn-doped SnO₂ with Sn vacancy (6 pages)**
Sun Guipeng, Yan Jinliang, Niu Peijiang, and Meng Delan
- SEMICONDUCTOR DEVICES**
- 024001 Comprehensive and fully self-consistent modeling of modern semiconductor lasers (12 pages)**
W. Nakwaski and R. P. Sarzala
- 024002 Thermo-electronic solar power conversion with a parabolic concentrator (9 pages)**
Olawole C. Olukunle and Dilip K. De
- 024003 Transient performance estimation of charge plasma based negative capacitance junctionless tunnel FET (5 pages)**
Sangeeta Singh, P. N. Kondekar, and Pawan Pal
- 024004 A threshold-voltage model for small-scaled GaAs nMOSFET with stacked high-k gate dielectric (6 pages)**
Liu Chaowen, Xu Jingping, Liu Lu, Lu Hanhan, and Huang Yuan

(Continued on inside back cover)

- 024005 Fabrication of a novel RF switch device with high performance using $In_{0.4}Ga_{0.6}As$ MOSFET technology (4 pages)**
Zhou Jiahui, Chang Hudong, Zhang Xufang, Yang Jingzhi, Liu Guiming, Li Haiou, and Liu Honggang
- 024006 Fabrication of 80-nm T-gate high indium $In_{0.7}Ga_{0.3}As/In_{0.6}Ga_{0.4}As$ composite channels mHEMT on GaAs substrate with simple technological process (5 pages)**
Ji Xian, Zhang Xiaodong, Kang Weihua, Zhang Zhili, Zhou Jiahui, Xu Wenjun, Li Qi, Xiao Gongli, Yin Zijun, Cai Yong, Zhang Baoshun, and Li Haiou
- 024007 70-nm-gated InAlN/GaN HEMTs grown on SiC substrate with $f_T/f_{max} > 160$ GHz (4 pages)**
Han Tingting, Dun Shaobo, Lü Yuanjie, Gu Guodong, Song Xubo, Wang Yuangang, Xu Peng, and Feng Zhihong
- 024008 Simulation study on single event burnout in linear doping buffer layer engineered power VDMOSFET (4 pages)**
Jia Yunpeng, Su Hongyuan, Jin Rui, Hu Dongqing, and Wu Yu
- 024009 A high performance InAlN/GaN HEMT with low R_{on} and gate leakage (3 pages)**
Ma Chunlei, Gu Guodong, and Lü Yuanjie
- 024010 High power 980 nm broad area distributed feedback laser with first-order gratings (3 pages)**
Dong Zhen, Zhao Yihao, Zhang Qi, Wang Cuiluan, Li Wei, Liu Suping, and Ma Xiaoyu
- 024011 A high-conductivity insulated gate bipolar transistor with Schottky hole barrier contact (5 pages)**
Jiang Mengxuan, Z. John Shen, Wang Jun, Yin Xin, Shuai Zhikang, and Lu Jiang

SEMICONDUCTOR INTEGRATED CIRCUITS

- 025001 High-stage analog accumulator for TDI CMOS image sensors (11 pages)**
Li Jianxin, Huang Fujun, Zong Yong, and Gao Jing
- 025002 Design and implementation of IEEE 802.11ac MAC controller in 65 nm CMOS process (6 pages)**
Cheng Peng, Wu Bin, and Hei Yong
- 025003 A power-efficient switchable CML driver at 10 Gbps (4 pages)**
Chen Peipei, Li Lei, and Liu Huihua
- 025004 An ultra-low-voltage rectifier for PE energy harvesting applications (5 pages)**
Wang Jingmin, Yang Zheng, Zhu Zhangming, and Yang Yintang
- 025005 A transient-enhanced NMOS low dropout voltage regulator with parallel feedback compensation (6 pages)**
Wang Han and Tan Lin
- 025006 A highly linear power amplifier for WLAN (5 pages)**
Jin Jie, Shi Jia, Ai Baoli, and Zhang Xuguang
- 025007 A multi-channel analog IC for *in vitro* neural recording (6 pages)**
Yuan Feng, Wang Zhigong, and Lü Xiaoying

SEMICONDUCTOR TECHNOLOGY

- 026001 Characterization of the effects of nitrogen and hydrogen passivation on $SiO_2/4H-SiC$ interface by low temperature conductance measurements (7 pages)**
Wang Yiyu, Peng Zhaoyang, Shen Huajun, Li Chengzhan, Wu Jia, Tang Yachao, Zhao Yanli, Chen Ximing, Liu Kean, and Liu Xinyu
- 026002 The effect of nitridation and sulfur passivation for $In_{0.53}Ga_{0.47}As$ surfaces on their Al/Al₂O₃/InGaAs MOS capacitors properties (5 pages)**
Lin Zizeng, Cao Mingmin, Wang Shengkai, Li Qi, Xiao Gongli, Gao Xi, Liu Honggang, and Li Haiou
- 026003 The optimization of FA/O barrier slurry with respect to removal rate selectivity on patterned Cu wafers (5 pages)**
Hu Yi, Li Yan, Liu Yuling, and He Yangang