

# Journal of Semiconductors

Volume 31 Number 6 June 2010

## SEMICONDUCTOR PHYSICS

- 062001** **Stability and vibrational properties of the hydrogen atom for p-type AlN doped with group-II: a first-principles study** (6 pages)  
Zhang Jianmin, Xu Guigui, Wu Qingyun, Chen Zhigao, and Huang Zhigao
- 062002** **Tunable spin-diode with a quantum dot coupled to leads** (5 pages)  
Chi Feng, Li Yan, and Sun Lianliang

## SEMICONDUCTOR MATERIALS

- 063001** **Growth of strained-Si material using low-temperature Si combined with ion implantation technology** (4 pages)  
Yang Hongdong, Yu Qi, Wang Xiangzhan, Li Jingchun, Ning Ning, and Yang Mohua
- 063002** **A novel compensation method for polygonized mesa structures on (100) silicon substrate** (6 pages)  
Zhang Han and Li Weihua
- 063003** **Morphology dependence of TiO<sub>2</sub> nanotube arrays on anodization variables and buffer medium** (5 pages)  
Wen Xin, Cao Meng, Wu Jie, Tao Junchao, Sun Yan, and Dai Ning

## SEMICONDUCTOR DEVICES

- 064001** **Continuous surface potential versus voltage equation of intrinsic surrounding-gate MOSFETs and analytic solution from accumulation to strong inversion region** (7 pages)  
He Jin, Zheng Rui, Zhang Lining, Zhang Jian, Lin Xinnan, and Chan Mansun
- 064002** **A new small-signal model for asymmetrical AlGaIn/GaN HEMTs** (5 pages)  
Ma Teng, Hao Yue, Chen Chi, and Ma Xiaohua
- 064003** **A process simplification scheme for fabricating CMOS polycrystalline-Si thin film transistors** (5 pages)  
Juang Miin-Horng, Chang Chia-Wei, Shye Der-Chih, Hwang Chuan-Chou, Wang Jih-Liang, and Jang Sheng-Liang
- 064004** **Conductivity modulation enhanced lateral IGBT with SiO<sub>2</sub> shielded layer anode by SIMOX technology on SOI substrate** (3 pages)  
Chen Wensuo, Zhang Bo, Li Zhaoji, Fang Jian, and Guan Xu
- 064005** **CuPc/C<sub>60</sub> heterojunction thin film optoelectronic devices** (3 pages)  
Imran Murtaza, Ibrahim Qazi, and Khasan S. Karimov
- 064006** **Analysis of a wavelength selectable cascaded DFB laser based on the transfer matrix method** (4 pages)  
Xie Hongyun, Chen Liang, Shen Pei, Sun Botao, Wang Renqing, Xiao Ying, You Yunxia, and Zhang Wanrong
- 064007** **Frequency and wavelength tunable optical microwave source based on a distributed Bragg reflector self-pulsation laser** (3 pages)  
Liu Yang, Sun Yu, Kong Duanhua, Wang Baojun, Bian Jing, An Xin, Zhao Lingjuan, and Wang Wei
- 064008** **Improved light extraction in AlGaInP-based LEDs using a self-assembly metal nanomask** (3 pages)  
Jiang Wenjing, Xu Chen, Shen Guangdi, Fang Rong, and Gao Wei
- 064009** **Analysis of the thermo-optic effect in lateral-carrier-injection SOI ridge waveguide devices** (5 pages)  
Zhao Jiatae, Zhao Yong, Wang Wanjun, Hao Yinlei, Zhou Qiang, Yang Jianyi, Wang Minghua, and Jiang Xiaoqing
- 064010** **Simulation and optimization of a 6H-SiC metal-semiconductor-metal ultraviolet photodetector** (5 pages)  
Chen Bin, Yang Yintang, Li Yuejin, and Liu Hongxia

(Continued on inside back cover)

- 064011 Impedance hygrometer based on cellulose and CuPc** (4 pages)  
Kh. S. Karimov, T. A. Qasuria, and Zubair Ahmad
- 064012 Erase voltage impact on 0.18  $\mu\text{m}$  triple self-aligned split-gate flash memory endurance** (4 pages)  
Dong Yaoqi, Kong Weiran, Nhan Do, Wang Shiuh-Luen, and Lee Gabriel

#### SEMICONDUCTOR INTEGRATED CIRCUITS

- 065001 A 1.5 V 7.656 GHz PLL with I/Q outputs for a UWB synthesizer** (5 pages)  
Chen Pufeng, Zhang Haiying, and Ye Tianchun
- 065002 An ultra-high-speed direct digital frequency synthesizer implemented in GaAs HBT technology** (5 pages)  
Chen Gaopeng, Wu Danyu, Jin Zhi, and Liu Xinyu
- 065003 A low-spurious fast-hopping MB-OFDM UWB synthesizer** (5 pages)  
Chen Danfeng, Li Wei, Li Ning, and Ren Junyan
- 065004 A low power 8-bit successive approximation register A/D for a wireless body sensor node** (5 pages)  
Liu Liyuan, Li Dongmei, Chen Liangdong, Zhang Chun, Wei Shaojun, and Wang Zhihua
- 065005 A novel wideband low phase noise 2 : 1 frequency divider** (7 pages)  
Lei Xuemei, Wang Zhigong, Wang Keping, and Li Wei
- 065006 A current-mode voltage regulator with an embedded sub-threshold reference for a passive UHF RFID transponder** (4 pages)  
Liu Zhongqi, Zhang Chun, Li Yongming, and Wang Zhihua
- 065007 A monolithic 3.1–4.8 GHz MB-OFDM UWB transceiver in 0.18- $\mu\text{m}$  CMOS** (9 pages)  
Zheng Renliang, Jiang Xudong, Yao Wang, Yang Guang, Yin Jiangwei, Zheng Jianqin, Ren Junyan, Li Wei, and Li Ning
- 065008 A low power Gm–C filter with on-chip automatic tuning for a WLAN transceiver** (6 pages)  
Liu Silin, Ma Heping, and Shi Yin
- 065009 Rotary traveling-wave oscillator design using 0.18  $\mu\text{m}$  CMOS** (4 pages)  
Hu Xinyi, Dai Yayue, Zhang Huafeng, Zhou Jinfang, and Chen Kangsheng
- 065010 An advanced monolithic digitalized random carrier frequency spread-spectrum clock generator for EMI suppression** (5 pages)  
Guo Haiyan, Chen Zao, Zhang Bo, and Li Zhaoji
- 065011 A fast lock frequency synthesizer using an improved adaptive frequency calibration** (6 pages)  
Yin Yadong, Yan Yuepeng, Liang Weiwei, and Du Zhankun
- 065012 A low-power CMOS frequency synthesizer for GPS receivers** (5 pages)  
Yu Yunfeng, Yue Jianlian, Xiao Shimao, Zhuang Haixiao, Ma Chengyan, and Ye Tianchun
- 065013 An ultra-low-power 1 kb sub-threshold SRAM in the 180 nm CMOS process** (4 pages)  
Liu Ming, Chen Hong, Li Changmeng, and Wang Zhihua
- 065014 A fast automatic power control circuit for a small form-factor pluggable laser diode drive** (5 pages)  
Wang Huan, Wang Zhigong, Xu Jian, Luo Yin, Miao Peng, Yang Siyong, and Li Wei
- 065015 An 8-b 300MS/s folding and interpolating ADC for embedded applications** (6 pages)  
Lu Yan, Lin Li, Xia Jiefeng, Ye Fan, and Ren Junyan
- 065016 All-CMOS temperature compensated current reference** (4 pages)  
Zhao Zhe, Zhou Feng, and Huang Shengzhan