

# Journal of Semiconductors

Volume 33 Number 7 July 2012

## SEMICONDUCTOR PHYSICS

- 072001 First-principles study of the electronic structures and optical properties of C–F–Be doped wurtzite ZnO (6 pages)  
Zuo Chunying, Wen Jing, and Zhong Cheng
- 072002 The conductive path in HfO<sub>2</sub>: first principles study (4 pages)  
Zhou Maoxiu, Zhao Qiang, Zhang Wei, Liu Qi, and Dai Yuehua

## SEMICONDUCTOR MATERIALS

- 073001 Humidity sensing properties of Cu<sub>2</sub>O-PEPC nanocomposite films (5 pages)  
Kh. S. Karimov, M. Saleem, Z. M. Karieva, A. Mateen, M. Tariq Saeed Chani, and Q. Zafar
- 073002 Microstructural properties of over-doped GaN-based diluted magnetic semiconductors grown by MOCVD (4 pages)  
Tao Zhikuo, Zhang Rong, Xiu Xiangqian, Cui Xugao, Li Li, Li Xin, Xie ZiLi, Zheng Youdou, Zheng Rongkun, and Simon P Ringer
- 073003 Structural and optical properties of Zn-doped  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> films (4 pages)  
Yue Wei, Yan Jinliang, Wu Jiangyan, and Zhang Liying

## SEMICONDUCTOR DEVICES

- 074001 Fabrication and characterization of a low frequency electromagnetic energy harvester (5 pages)  
Abu Riduan Md. Foisal and Gwi-Sang Chung
- 074002 A different approach for determining the responsivity of n<sup>+</sup>p detectors using scanning electron microscopy (5 pages)  
Omeime Xerviar Esebamen, Göran Thungström, and Hans-Erik Nilsson
- 074003 Effect of a gate buffer layer on the performance of a 4H-SiC Schottky barrier field-effect transistor (5 pages)  
Zhang Xianjun, Yang Yintang, Chai Changchun, Duan Baoxing, Song Kun, and Chen Bin
- 074004 An 88 nm gate-length In<sub>0.53</sub>Ga<sub>0.47</sub>As/In<sub>0.52</sub>Al<sub>0.48</sub>As InP-based HEMT with  $f_{\max}$  of 201 GHz (4 pages)  
Zhong Yinghui, Wang Xiantai, Su Yongbo, Cao Yuxiong, Jin Zhi, Zhang Yuming, and Liu Xinyu
- 074005 A low on-resistance SOI LDMOS using a trench gate and a recessed drain (4 pages)  
Ge Rui, Luo Xiaorong, Jiang Yongheng, Zhou Kun, Wang Pei, Wang Qi, Wang Yuangang, Zhang Bo, and Li Zhaoji
- 074006 Universal trench design method for a high-voltage SOI trench LDMOS (4 pages)  
Hu Xiarong, Zhang Bo, Luo Xiaorong, and Li Zhaoji
- 074007 Giant magnetoresistance in a two-dimensional electron gas modulated by ferromagnetic and Schottky metal stripes (5 pages)  
Lu Jianduo and Xu Bin

(Continued on inside back cover)

- 074008 Enhanced light output power in InGaN/GaN light-emitting diodes with a high reflective current blocking layer (4 pages)**  
Zhang Xiaojie, Yang Ruixia, and Wang Jinghui
- 074009 Investigation of the polysilicon p-i-n diode and diode string as a process compatible and portable ESD protection device (5 pages)**  
Jiang Yibo, Du Huan, and Han Zhengsheng
- 074010 Design and fabrication of an InP arrayed waveguide grating for monolithic PICs (4 pages)**  
Pan Pan, An Junming, Wang Liangliang, Wu Yuanda, Wang Yue, and Hu Xiongwei

#### **SEMICONDUCTOR INTEGRATED CIRCUITS**

- 075001 A uniform phase noise QVCO with a feedback current source (5 pages)**  
Zhou Chunyuan, Zhang Lei, and Qian He
- 075002 A fourth-order bandwidth-reconfigurable delta-sigma modulator for audio applications (6 pages)**  
Wang Junqian, Yang Haifeng, Wei Rui, Xu Jun, and Ren Junyan
- 075003 A 20-GHz ultra-high-speed InP DHBT comparator (5 pages)**  
Huang Zhenxing, Zhou Lei, Su Yongbo, and Jin Zhi
- 075004 A low-phase-noise ring oscillator with coarse and fine tuning in a standard CMOS process (4 pages)**  
Gao Haijun, Sun Lingling, Kuang Xiaofei, and Lou Liheng
- 075005 An integrated CMOS high data rate transceiver for video applications (5 pages)**  
Liang Yaping, Che Dazhi, Liang Cheng, and Sun Lingling
- 075006 A 2-mW 50-dB DR wideband hybrid AGC for a GNSS receiver in 65 nm CMOS (8 pages)**  
Xu Yang, Chi Baoyong, Xu Yang, Qi Nan, and Wang Zhihua
- 075007 A new OLED SPICE model for pixel circuit simulation in OLED-on-silicon microdisplay design (6 pages)**  
Zhao Bohua, Huang Ran, Bu Jianhui, Lü Yinxue, Wang Yiqi, Ma Fei, Xie Guohua, Zhang Zhensong, Du Huan, Luo Jiajun, Han Zhengsheng, and Zhao Yi
- 075008 A high-speed mixed-signal down-scaling circuit for DAB tuners (5 pages)**  
Tang Lu, Wang Zhigong, Xuan Jiahui, Yang Yang, Xu Jian, and Xu Yong
- 075009 A new FPGA with 4/5-input LUT and optimized carry chain (8 pages)**  
Mao Zhidong, Chen Ligang, Wang Yuan, and Lai Jinmei
- 075010 Worst-case total dose radiation effect in deep-submicron SRAM circuits (5 pages)**  
Ding Lili, Yao Zhibin, Guo Hongxia, Chen Wei, and Fan Ruyu
- 075011 A 10 Gb/s burst-mode clock and data recovery circuit (5 pages)**  
Gu Gaowei, Zhu En, Lin Ye, and Liu Wensong