

Journal of Semiconductors

Volume 33 Number 1 January 2012

INVITED PAPERS

- 011001** **MOS Capacitance–Voltage Characteristics: IV. Trapping Capacitance from 3-Charge-State Impurities** (*19 pages*)
Jie Binbin and Sah Chihtang

SEMICONDUCTOR PHYSICS

- 012001** **Effect of rhenium doping on various physical properties of single crystals of MoSe₂** (*5 pages*)
Mihir M. Vora and Aditya M. Vora
- 012002** **First principle study of the electronic structure of hafnium-doped anatase TiO₂** (*4 pages*)
Li Lezhong, Yang Weiqing, Ding Yingchun, and Zhu Xinghua

SEMICONDUCTOR MATERIALS

- 013001** **Ferromagnetism in Fe-doped CuO nanopowder** (*3 pages*)
Zhao Jing, Xia Qinglin, and Li Jinmin
- 013002** **Effect of substrate temperature on the properties of deep ultraviolet transparent conductive ITO/Ga₂O₃ films** (*5 pages*)
Li Ting, Yan Jinliang, Ding Xingwei, and Zhang Liying
- 013003** **Aluminum/MoO₃ anode thin films: an effective anode structure for high-performance flexible organic optoelectronics** (*4 pages*)
Ding Lei, Zhang Fanghui, Ma Ying, and Zhang Maili

SEMICONDUCTOR DEVICES

- 014001** **Continuous analytic *I*–*V* model for GS DG MOSFETs including hot-carrier degradation effects** (*6 pages*)
Toufik Bentrcia, Faycal Djeffal, and Abdel Hamid Benhaya
- 014002** **Characteristics of AlGaN/GaN/AlGaN double heterojunction HEMTs with an improved breakdown voltage** (*5 pages*)
Ma Juncai, Zhang Jincheng, Xue Junshuai, Lin Zhiyu, Liu Ziyang, Xue Xiaoyong, Ma Xiaohua, and Hao Yue
- 014003** **A Ku band internally matched high power GaN HEMT amplifier with over 30% of PAE** (*4 pages*)
Ge Qin, Chen Xiaojuan, Luo Weijun, Yuan Tingting, Pu Yan, and Liu Xinyu
- 014004** **High breakdown voltage InGaAs/InP double heterojunction bipolar transistors with $f_{\max} = 256$ GHz and $BV_{CEO} = 8.3$ V** (*3 pages*)
Cheng Wei, Zhao Yan, Gao Hanchao, Chen Chen, and Yang Naibin
- 014005** **Impact of parasitic resistance on the ESD robustness of high-voltage devices** (*5 pages*)
Lin Lijuan, Jiang Lingli, Fan Hang, and Zhang Bo
- 014006** **Total dose irradiation and hot-carrier effects of sub-micro NMOSFETs** (*4 pages*)
Cui Jiangwei, Xue Yaoguo, Yu Xuefeng, Ren Diyuan, Lu Jian, and Zhang Xingyao
- 014007** **Improved spectral characteristics of 980 nm broad area slotted Fabry–Perot diode lasers** (*4 pages*)
Gao Zhuo, Wang Jun, Xiong Cong, Liu Yuanyuan, Liu Suping, and Ma Xiaoyu

(Continued on inside back cover)

- 014008 SEE characteristics of small feature size devices by using laser backside testing (5 pages)**
Feng Guoqiang, Shangguan Shipeng, Ma Yingqi, and Han Jianwei
- 014009 Influence of doping position on the extinction ratio of Mach–Zehnder-interference based silicon optical modulators (3 pages)**
Zhao Yong, Wang Wanjun, Shao Haifeng, Yang Jianyi, Wang Minghua, and Jiang Xiaoqing
- SEMICONDUCTOR INTEGRATED CIRCUITS**
- 015001 A 3 to 5 GHz low-phase-noise fractional- N frequency synthesizer with adaptive frequency calibration for GSM/PCS/DCS/WCDMA transceivers (6 pages)**
Pan Yaohua, Mei Niansong, Chen Hu, Huang Yumei, and Hong Zhiliang
- 015002 A 1500 mA, 10 MHz on-time controlled buck converter with ripple compensation and efficiency optimization (7 pages)**
Yu Jiale, Lü Danzhu, and Hong Zhiliang
- 015003 A wideband LNA employing gate-inductive-peaking and noise-canceling techniques in 0.18 μm CMOS (8 pages)**
Bao Kuan, Fan Xiangning, Li Wei, Zhang Li, and Wang Zhigong
- 015004 High performance power-configurable preamplifier in a high-density parallel optical receiver (6 pages)**
Wang Xiaoxia and Wang Zhigong
- 015005 A high dynamic range linear RF power detector with a preceding LNA (7 pages)**
Dai Yingbo, Han Kefeng, Yan Na, and Tan Xi
- 015006 Design of a 0.5 V CMOS cascode low noise amplifier for multi-gigahertz applications (6 pages)**
Liu Baohong, Zhou Jianjun, and Mao Junfa
- 015007 A 18-mW, 20-MHz bandwidth, 12-bit continuous-time $\Sigma\Delta$ modulator using a power-efficient multi-stage amplifier (7 pages)**
Li Ran, Li Jing, Yi Ting, and Hong Zhiliang
- 015008 A high-performance MUX-direct digital frequency synthesizer with quarter ROMs (4 pages)**
Hao Zhikun, Zhang Qiang, Ni Weining, and Shi Yin
- 015009 A 0.8–3 GHz RF-VGA with 35 dB dynamic range in 0.13 μm CMOS (6 pages)**
Qin Xi, Huang Xingli, Qin Yajie, and Hong Zhiliang
- 015010 An IO block array in a radiation-hardened SOI SRAM-based FPGA (7 pages)**
Zhao Yan, Wu Lihua, Han Xiaowei, Li Yan, Zhang Qianli, Chen Liang, Zhang Guoquan, Li Jianzhong, Yang Bo, Gao Jiantou, Wang Jian, Li Ming, Liu Guizhai, Zhang Feng, Guo Xufeng, Zhao Kai, Stanley L. Chen, Yu Fang, and Liu Zhongli
- 015011 An offset cancellation technique in a switched-capacitor comparator for SAR ADCs (5 pages)**
Tong Xingyuan, Zhu Zhangming, and Yang Yintang
- 015012 Direct extraction of equivalent circuit parameters for on-chip spiral transformers (6 pages)**
Wei Jiaju, Wang Zhigong, and Li Zhiqun