

■ SPECIAL TOPIC ON SEMICONDUCTOR MATERIALS GENOME INITIATIVE: NEW CONCEPTS AND DISCOVERIES

Preface

Su-Huai Wei, Junwei Luo, Bing Huang

071001 Data-driven material discovery for photocatalysis: a short review

Jinbo Pan and Oimin Yan [10 pages]

071002 Approaches to design inorganic semiconductors while maintaining structural motifs

Xiuwen Zhang and Jianbai Xia [7 pages]

Recent progress in Pb-free stable inorganic double halide perovskites 071003

Zhenzhu Li and Wanjian Yin [6 pages]

Crystal structure prediction in the context of inverse materials design 071004

G. Trimarchi [10 pages]

First-principle high-throughput calculations of carrier effective masses of 072001

two-dimensional transition metal dichalcogenides

Yuanhui Sun, Xinjiang Wang, Xin-Gang Zhao, Zhiming Shi, and Lijun Zhang [7 pages]

■ INVITED REVIEW PAPERS

A review: crystalline silicon membranes over sealed cavities for pressure sensors 071005 by using silicon migration technology

Jiale Su, Xinwei Zhang, Guoping Zhou, Changfeng Xia, Wuqing Zhou, and Qing'an Huang

■ SEMICONDUCTOR PHYSICS

Hot electron transport in wurtzite-GaN: effects of temperature and doping 072002

concentration

[6 pages] Aritra Acharyya

[7 pages]

■ SEMICONDUCTOR MATERIALS

Controlling morphology evolution of AIN nanostructures: influence of growth 073001

conditions in physical vapor transport

Lei Jin, Hongjuan Cheng, Jianli Chen, Song Zhang, Yongkuan Xu, and Zhanping Lai [5 pages]

SEMICONDUCTOR DEVICES

Small-signal model parameter extraction of E-mode N-polar GaN MOS-HEMT 074001

using optimization algorithms and its comparison

D. K. Panda, G. Amarnath, and T. R. Lenka [8 pages]



074002 Impact of crystal orientation and surface scattering on DG-MOSFETs in quasi-ballistic region

[5 pages] Lei Shen, Shaoyan Di, Longxiang Yin, Yun Li, Xiaoyan Liu, and Gang Du

O74003 Research on the hydrogen terminated single crystal diamond MOSFET with MoO₃ dielectric and gold gate metal

[5 pages] Zeyang Ren, Jinfeng Zhang, Jincheng Zhang, Chunfu Zhang, Pengzhi Yang, Dazheng Chen, Yao Li, and Yue Hao

074004 A GaN/InGaN/AIGaN MQW RTD for versatile MVL applications with improved logic stability

[11 pages] Haipeng Zhang, Qiang Zhang, Mi Lin, Weifeng Lü, Zhonghai Zhang, Jianling Bai, Jian He, Bin Wang,

and Dejun Wang

074005 Micro-plasma noise of 30 krad gamma irradiation broken-down GaN-based LED

[4 pages] Yu'an Liu and Wenlang Luo

074006 Comparative analysis of memristor models and memories design

[12 pages] Jeetendra Singh and Balwinder Raj

■ SEMICONDUCTOR INTEGRATED CIRCUITS

O75001 A BFSK and OOK IF demodulation circuit with 2.8 μs settling time and re-configurable image rejection functions for MICS/BCC applications

[6 pages] Tongqiang Gao, Zhenxiong Chen, Siqi Zhao, Haigang Yang, and Xinxia Cai