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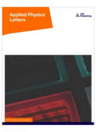

All Issues

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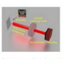
EISSN 1077-3118

In this Issue

OPTICS, PHOTONICS, AND ELECTROMAGNETISM
PHYSICS OF SURFACES AND INTERFACES
METASURFACES, METAMATERIALS, AND NANOTECHNOLOGY
MATERIALS PHYSICS
PHYSICS OF SEMICONDUCTORS
PHONONIC, ACOUSTIC, AND THERMAL PROPERTIES
MAGNETISM AND SPINTRONICS
DIELECTRICS, FERROELECTRICS, AND MULTIFERROICS
LOW-DIMENSIONAL AND TOPOLOGICAL PHYSICS
ELECTRONICS AND OPTOELECTRONICS

OPTICS, PHOTONICS, AND ELECTROMAGNETISM



High-capacity data transmission with 24-bit orbital angular momentum multiplexing under dynamic scattering media 🛒

Junlei Zhou; Yaling Yin; Binqi Chen; Chaoxiu Guo; Yong Xia

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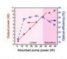

High-power and efficient operation of $Ho:Lu_2O_3$ ceramic laser at 2.1 μm spectral gain region 🛒

Chuanyong Ren; Yaocong Han; Haotian Wang; Jun Wang; Fei Wang; Dingyuan Tang; Deyuan Shen

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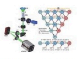

Subpixel-registered dual-mode imaging enables label-free inference of mitochondria in living cells 🛒

Ying Ma; Haixin Xue; Taiqiang Dai; Xin Liu; Qilong Tan; Zhanqiang Li; Lan Ma

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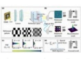

Physics-constrained autofocus in fiber-coupled single-pixel microscopy 🛒

Lianhao Zhang; Hanlei Gong; Guan Wang; Yiqi Jia; Haojia Jiang; Huaxia Deng; Xinglong Gong

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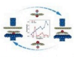

Phthalocyanine-based molecular memristor consisting of a tin-bridged heterojunction F 🛒

Chao Yang; Xin Xiao; Changcheng Tang; Bo Guo; Kuan-Rong Hao; Lizhi Zhang

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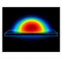
METASURFACES, METAMATERIALS, AND NANOTECHNOLOGY



Single-sided magnetic-field generation based on transformation optics with a multilayer coil structure F 🛒

Xuhong Ling; Xu Zhang; Shuhang Chen; Jiaqi Cui; Yuzhen Lou; Qi Zhu

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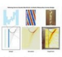

Tailoring arbitrary convex self-bending and low-diffraction elastic waves via deep-subwavelength metasurfaces EP 🛒

Xinze Guo; Ming Ma; He Gao; Zhongqing Su

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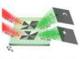

Spin-selective nonlinear imaging in real and Fourier space via chiral metasurfaces 🛒

Yanchun Wang; Yuebian Zhang; Yuexin Sun; Haoyu Wang; Wenwei Liu; Hua Cheng; Shuqi Chen

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MATERIALS PHYSICS

Deep learning-based prediction of highly efficient optical probes for two-photon fluorescence imaging and photodynamic therapy of tumor 🛒

Yubiao Yang; Donghua Lin; Jie Huang; Wen Han; Yi Tang; Jinchang Yin

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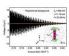

Cyclotron mass-selective de Haas–van Alphen measurements using temperature modulation 🛒

Michelle Hollricher; Andreas Bauer; Leo Maximov; Louw Feenstra; Christian Pfleiderer; Marc A. Wilde

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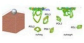

Dislocation dynamics in noble-metal high-entropy alloys under nanoindentation: Neuroevolution potential insights 🛒

Wenyi Huo; Hyoung Seop Kim; Peter K. Liaw

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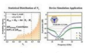

C-axis textured M-type hexaferrite with tailored magnetic properties and narrow FMR linewidth for Ka-band self-biased circulator applications 🛒

Yongjie Liao; Qian Liu; Ziyang Li; Xiao Tan; Yuxin Wu; Houjiao Chen; Chang Li; Xin You; Chongsheng Wu; Yuanming Lai

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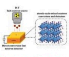

Electronic structure and fast neutron direct-conversion detection in organic–inorganic hybrid perovskites 🛒

Qi Zhang; Xiaohai Zheng; Ming-Zi Wang; Ruirui Fan; Hong-Jian Feng

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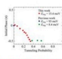
PHYSICS OF SEMICONDUCTORS



Bloch oscillations in a semiconductor superlattice shifting from capacitive to conductive responses with electric-field-induced interminiband mixing 🛒

Takeya Unuma; Keita Okada; Kosuke Ueda; Nobuko Hino; Naomi Nagai; Kazuhiko Hirakawa

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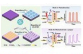

Wavelength-dependent C8-BTBT/C_{60} heterojunction transistor array for optical communication and image recognition functions 🛒

Honglin Song; Yuan Zhao; Fengyu Li; Yingwei Wang; Xiaoliang Liu; Mei Fang; Leyong Jiang; Ming Cheng; Jie Jiang

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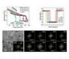

Alleviating the trade-off between thermal stability and fast switching in Ru-doped Sb_3Te phase change films 🛒

Chengnuo Zhang; Yuan Xue; Yonghui Zheng; Guangjie Shi; Dongning Yao; Sannian Song; Zhitang Song; Yan Cheng

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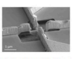

Fabrication of fully suspended Hall crosses in GaAs/AlGaAs heterostructures and scaling of submicron AuGeNi ohmic contacts EP

G. Stefanou; J. R. A. Dann; E. Miele; C. Chen; B. Ramsay; A. Lowe; D. A. Ritchie; C. G. Smith

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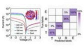

Light harvesting and carrier separation in N-doped graphene clusters/Si heterojunctions for photodetection and spatial image recognition 🛒

Genqiang Cao; Hui Ma; Fanghao Zhu; Kuan Qian; Shubo Li; Shixia Luan; Wenwu Xu; Xu Wang; Qinglei Guo; Gang Wang

Appl. Phys. Lett. 129, 042105 (2026) https://doi.org/10.1063/5.0346201

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PHONONIC, ACOUSTIC, AND THERMAL PROPERTIES

Diverse ratio of electronic and internal-strain piezoelectricity in half-Heusler semiconductor for the design of multifunctional piezoelectric devices 🛒

Zun-Yi Deng; Yingrong Wan; Xiaqing Zhang; Xingan Jiang; Yongheng Li; Qiyi Zhao; Qixiang Yin; Xueyun Wang; Yuxiang Zhao

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MAGNETISM AND SPINTRONICS

Analog-to-digital converter based on spin–orbit torque magnetic tunnel junctions 🛒

X. H. Li; Y. Q. Xu; R. Zhang; C. H. Wan; S. L. Xiong; D. H. Kong; J. H. Xia; G. Q. Yu; X. F. Han

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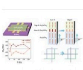

Dual-tunable polarity reversal of exchange bias in the Fe_3GaTe_2/O-Fe_3GaTe_2 heterostructures 🛒

Hanxuan Cui; Yujie Cui; Hecheng Luo; Lujun Wei; Wei Niu; Liang Zha; Ping Liu; Yong Pu

Appl. Phys. Lett. 129, 042402 (2026) https://doi.org/10.1063/5.0322086

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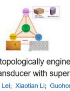
DIELECTRICS, FERROELECTRICS, AND MULTIFERROICS



A topologically engineered honeycomb-like (2-0)-2 piezoceramic composite ultrasonic transducer with superior sensitivity 🛒

Yu Lei; Xiaotian Li; Guohong Gan; Wei Bai; Bing Wang; Ziyan Gao; Xinyi Zheng; Xiangmeng Lv; Zhonghui Yu; Zewei Hou; Jiawang Hong; Shuxiang Dong

Appl. Phys. Lett. 129, 042901 (2026) https://doi.org/10.1063/5.0330598

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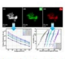

Enhancing the electrical insulation performance of epoxy resin composites via *in situ* grafted Cu_2S nanoparticles 🛒

Chenhao Jia; Jie Li; Boya Zhang; Xiao Yuan; Xingwen Li

Appl. Phys. Lett. 129, 042902 (2026) https://doi.org/10.1063/5.0342548

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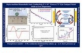

Defect-mediated remarkable ionic conductivity in undoped nickel oxide at low temperature

Ananda Kamal Sur; Anirban Chowdhury

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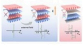

Intrinsic layer Hall effect with half-quantization in $\mathcal{PT}$-broken magnetic topological insulators

Di Han; Yu Zhang; Yuanzheng Chu; Hao Tian; Xuqi Li; Shifei Qi

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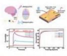
ELECTRONICS AND OPTOELECTRONICS



Defect-engineering induced sub-bandgap stimulation in BeZnO for optoelectronic synapse

Zekun Qu; Peiyang Han; Sheng-Yu Chen; Hongyu Chen; Longxing Su

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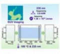

Rubidium copper iodide single crystals for deep-ultraviolet detection and imaging SCI F

Zhongqing Zeng; Linfeng Chen; Baiqian Wang; Lunan Pei; Zhigang Zang; Wensi Cai

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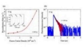

Measuring carrier lifetimes of an InGaAs/GaAsSb T2SL using an optical phase-shift technique

P. Petluru; P. T. Webster; S. D. Hawkins; A. J. Muhowski

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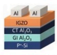

UV-ozone-induced quasi-tunnel layer for charge-trapping synaptic transistors and its application in neuromorphic computing

Haochen Cui; Yifan Wang; Guangtan Miao; Kaiyue Li; Minghao Wang; Guoxia Liu; Fukai Shan

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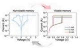
DEVICE PHYSICS



Volatile and nonvolatile resistive switching reconfiguration in CeO_2-based memristor

Shuai Zhong; Lirou Su; Yufeng Hu; Guangyu Li; Xuemeng Fan; Yishu Zhang

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Thermally stable GaN RF HEMTs on proton irradiated GaN substrates for low-noise applications

Kangkai Fan; Chengcheng Xu; Jiajun Han; Yiyang Li; Bin Li; Zhian Huang; Haihong Wu; Zhixiang Zhong; Jingting Luo; Jianbo Liang; Jun He; Hezhou Liu; Xun Luo; Hsien-Chin Chiu; Junfa Mao; Xinke Liu

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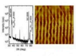

Excitation and imaging of GHz surface acoustic waves in $Al_{1-x}Sc_xN$ grown on SiC by molecular-beam epitaxy

Mingyun Yuan; Duc V. Dinh; Jonathan E. Gordon; Madeleine Msall; Oliver Brandt; Paulo V. Santos

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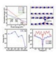

Regulation of vacancy formation in h-BN via carbon doping toward improved resistive switching

Guangyu Yan; Yifan Zhang; Yang Ge; Shengbo Sang; Xiaojie Chai; Yan Liu

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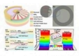

Recorded 1.4 kV/1.24 GW/cm^2 BFOM AlGaN/GaN Schottky barrier diodes grown on Si substrate with fan-shaped AlGaN polarization superjunction

Jingting He; Fuping Huang; Chunshuang Chu; Kangkai Tian; Shuting Cai; Yonghui Zhang; Xiao Wei Sun; Zi-Hui Zhang

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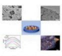
BIOIMAGING, BIOSENSORS, AND MEDICAL PHYSICS



Rice straw-derived 3D porous carbon-based electrochemical immunosensor for ultrasensitive detection of alpha-fetoprotein

Zheng Yang; Wenyu Wang; Wei Yang; Rumeng Dai; Congwen Huang; Chaofan Wu; Linlin An; Li Wang; Suhua Fan; Hai Wu

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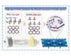
ENERGY CONVERSION AND STORAGE



Ultra-long-life zinc-iodine batteries enabled by efficient conversion of iodine on high-spin Fe single-atom sites embedded into 3D porous graphene F

Xinxin Xu; Wenli Zhu; Pingping Lan; Congxiu Li; Jiawang Li; Kaichun Qin; Libin Xu; Xianlu Lu; Pei Kang Shen; Zhi Qun Tian

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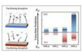

Cross-state prediction of dynamic ferroelectric catalysis: Efficient screening for bypassing the Sabatier limit

Zi-Xuan Yang; Lei Li; Tao Huang; Hui Wan; Can Leng; X. S. Wang; Gui-Fang Huang; Wangyu Hu; Wei-Qing Huang

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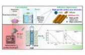

Electrochemical hydrogen pumps powered by *in situ* waste heat recovery and enhanced by 3D MXene-CNT carriers

Yongjiu Tang; Liulin Que; Xiaoming Li; Liang Zhang; Jun Li; Yongsheng Zhang; Xun Zhu; Qiang Liao

Appl. Phys. Lett. 129, 043903 (2026) https://doi.org/10.1063/5.0344256

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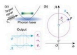

Single-atom sensor for low-frequency electric field

Quan Yuan; Shuang-Qing Dai; Tai-Hao Cui; Pei-Dong Li; Yuan-Zhang Dong; Zhuo-Zhu Wu; Ji Li; Fei Zhou; Jian-Qi Zhang; Liang Chen; Mang Feng

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ERRATA

Erratum: “An electrothermally actuated high-power MOEMS optical switch with a state-latching mechanism” [Appl. Phys. Lett. **128**, 173303 (2026)] FREE

Yun Cao; Yibo Liu; Haipeng Xie; Xiaoyu Kong; Tianhe Cong; Xiaoyi Gu; Zhanwen Xi

Appl. Phys. Lett. 129, 049901 (2026) https://doi.org/10.1063/5.0350526

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Online ISSN 1077-3118 Print ISSN 0003-6951

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