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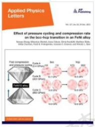

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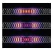

Multimode nanobeam photonic crystal cavities for Purcell enhanced quantum dot emission ✓

Junyeob Song; Ashish Chanana; Emerson G. Melo; William Eshbaugh; Craig R. Copeland; Luca Sapienza; Edward B. Flagg; Jindong Song; Kartik Srinivasan; Marcelo Davanco

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Nano-light source generation by electron beam irradiation of $CsPbBr_3/Cs_4PbBr_6$ composites EP ✓

Hikaru Saito; Kotaro Kihara; Midori Ikeuchi; Sotatsu Yanagimoto; Tetsuya Kubota; Keiichirou Akiba; Takumi Sannomiya

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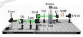

High-fidelity ghost diffraction through complex media using a single-photon detector ✓

Yang Peng; Yining Hao; Wen Chen

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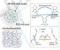

Molecular engineering of PEDOT:PSS for enhancing open-circuit voltage in organic/silicon heterojunction solar cells ✓

Leiming Yu; Rui Yang; Xiangdong Duan; Zhuo Wu; Suicai Zhang; Xiaohui Song; Yurong Jiang; Congxin Xia

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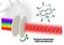
METASURFACES, METAMATERIALS, AND NANOTECHNOLOGY



Long-range structural anisotropy governs macroscopic chiroptical response in twisted anodic aluminum oxide membranes ✓

Yu-Ying Chang; Yun-Kai Hsu; Yi-Sheng Hsu; Yan-Lin Zhong; Jun-Xiao Lin; Tzu-Fang Hsu; Hua-Shu Hsu

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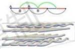

Quantized topological transport mediated by the long-range couplings ✓

Ekaterina S. Lebedeva; Maxim Mazanov; Alexey V. Kavokin; Maxim A. Gorlach

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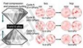
MATERIALS PHYSICS



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Takahiko Yanagitani

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Effect of pressure cycling and compression rate on the bcc-hcp transition in an FeNi alloy SCI F ✓

Yanyao Zhang; Sébastien Merkel; Anna Celeste; Silvia Pandolfi; Matthew Ricks; Stella Chariton; Vitali B. Prakapenka; Arianna E. Gleason; Wendy L. Mao

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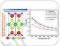

Rattling-induced anharmonicity and multi-valley enhanced thermoelectric performance in layered SmZnSbO material ✓

Shuwei Tang; Guowei Wang; Shulin Bai; Pengfei Zhang; Peng Ai; Song Pei; Yilong Xiao; Yujie Bao; Zhanpeng Xu; Da Wan

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Photoluminescence excitation spectroscopy of quantum wire-like dislocation states in ZnS ✓

Alexander Blackston; Alexandra Fonseca Montenegro; Sevim Polat Genlik; Maryam Ghazisaeidi; Roberto C. Myers

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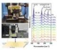

Uniaxial strain-induced giant Raman enhancement in few-layer γ-InSe ✓

Xiangnan Gong; Zhihao Wu; Chuanyao Yang

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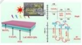

Transparent $CuGaO_2/BaTiO_3$ nanoarray pn junction with high-entropy perovskite quantum dots for enhanced photoelectric response ✓

Dingwei Wang; Rui Wang; Chengyu Jia; Bo He; Jun Cao; Wenzhen An; Lei Shi; Jiaqi Pan; Shifeng Deng; Chaorong Li

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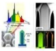
PHYSICS OF SEMICONDUCTORS



Formation and optical characteristics of AlGaN:Tb/GaN core–shell nanowires grown by organometallic vapor phase epitaxy ✓

J. Tatebayashi; T. Yoshimura; K. Sato; S. Ichikawa; Y. Fujiwara

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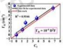

Correlation between microstructural changes and phonon shifts in O^--implanted FeS_2 thin films ✓

Rudra Narayan Chakraborty; Dipta Suryya Mahanta; Kasilingam Senthilkumar

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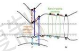

Ultrafast carrier dynamics of indirect bandgap exciton and band-nesting excitons in mechanically exfoliated **α**-In_2Se_3 flakes ✓

Zi-Fan Hu; Hao-Ran Ma; Ting-Ting Wang; Lin Cui; Bing-Nan Yang; Dan Wang; Hai-Yu Wang; Lei Wang

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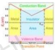

Microscopic origin of metal–insulator transition in two-dimensional Bi_2O_2Se unraveled by first-principles simulations ✓

Chen-Min Dai; Feifan Bian; Chunlan Ma; Menglin Huang; Zenghua Cai; Shiyou Chen

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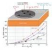

Indium bilayer mediated InGaN surface decomposition: A comprehensive phenomenological model of epitaxial kinetic mechanisms ✓

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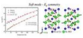
PHONONIC, ACOUSTIC, AND THERMAL PROPERTIES



Soft phonon mode as the origin of the reduced thermal conductivity in Ta-based trirutiles ✓

R. Tartaglia; A. F. Lima; N. Prasai; A. B. Christian; J. J. Neumeier; J. L. Cohn; E. Granado

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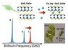

Large elastic anisotropy in Brillouin scattering of copper-intercalated GaS and GaSe ✓

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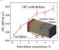

Enhanced interfacial thermal conductance across Si/defected SiC interface 🔓

Kairolla S. Sekerbayev; Omid Farzadian; Azat Abdullaev; Yanwei Wang; Zhandos N. Utegulov

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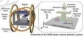
MAGNETISM AND SPINTRONICS



Rapid malaria detection using a spin Hall magnetoresistance sensor F ✓

Jiaqi Wang; Tingxuan Zhang; Yuteng Ma; Jiayi Xu; Yuxin Si; Yihong Wu

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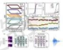

Cross-modal neuromorphic computing in GdFeCo devices by spin–orbit torque induced field-free magnetization switching ✓

Huiyun Hu; Tao Zhu; Likun Qian; Buyun Huang; Ke Wang; Liu Yang; Fang Jin; Kaifeng Dong

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Efficient spin transport across a disordered interface in a low damping magnetic insulator/heavy metal bilayer EP ✓

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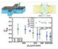

Decoupling of spin–orbit torque components in Py/W bilayers unveiled through variation of W-resistivity ✓

Abu Bakkar Miah; Harekrishna Bhunia; Dhananjaya Mahapatra; Soumik Aon; Partha Mitra

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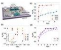

Magneto-ionic control of perpendicular anisotropy in epitaxial Mn_4N films

Silvia Damerio; Teodor Apetrei; Can Onur Avci

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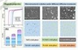

A tailored two-step process enabling high efficiency light rare earth diffusion in Ce-rich Nd–Ce–Fe–B magnet

Qing Feng; Shuainan Xu; Deliang Zhang; Wei Li; Shiying Chen; Mingpeng Kou; Chaochao Zeng; Hongya Yu; Youlin Huang; Zhongwu Liu

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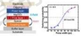

Ultrafast voltage-induced switching enabled by coupling dynamics in perpendicular magnetic tunnel junction

Qi Jia; Yu-Chia Chen; Yang Lv; Delin Zhang; Shuang Liang; Yifei Yang; Jian-Ping Wang

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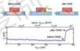
SUPERCONDUCTIVITY AND SUPERCONDUCTING ELECTRONICS



Superconducting readout of current-induced magnetization switching

Lukas Kammermeier; Elke Scheer

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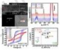
DIELECTRICS, FERROELECTRICS, AND MULTIFERROICS



Thin Ga_2O_3 insertion layer for phase structure and electrical property evolutions in ferroelectric $Hf_{0.5}Zr_{0.5}O_2$ capacitors

Chi Xie; Zi-Ying Huang; Zhan-Yuan Huang; Ying-Guo Yang; Chao Xu; Ye Zhu; Zhiming Wu; Ming Li; David Wei Zhang; Hong-Liang Lu

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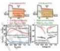

Theoretical investigation of performance-improved ferroelectric tunnel junction based on trap-assisted tunneling

Shi-Xi Kong; Tuo-Hung Hou

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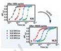

Evolution of polarization switching kinetics in an $Al_{0.8}Sc_{0.2}N$ ferroelectric film with electric field cycling

Jinyang Sui; Wenjin Zhao; Dayu Zhou; Yongsong Zhao; Yi Tong; Xinpeng Wang

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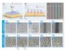
LOW-DIMENSIONAL AND TOPOLOGICAL PHYSICS



Periodic micro/nanostructures on few-layer $PtSe_2$ irradiated by femtosecond laser pulses

Bin Zhang; Lijuan Shi; Lingrui Chu; Lingqi Li; Saulius Juodkazis; Feng Chen

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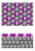

Atomic configuration of flat honeycomb lattice structure of bismuthene on Ag(111) ✓

Yuki Fukaya; Iwao Matsuda

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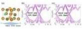

Electrical and magneto-transport properties of GdPdBi half-Heusler thin films ✓

Shivangi Srivastava; Devendra K. Pandey; Divya P. Dubey; Anupam Bhattacharya; Ratnamala Chatterjee

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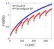
ELECTRONICS AND OPTOELECTRONICS



Reconfigurable exceptional points for adaptive high-precision sensing ✓

Yusen Yang; Manshi Wang; Lei Chen; Xiangyang Gong; Haichuan Li; Gui-Shi Liu; Yaofei Chen; Yunhan Luo; Zhe Chen

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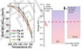

Temperature-induced absolute energy shift of the electronic spectrum in HgTe nanocrystals ✓

Tommaso Gemo; Dario Mastrippolito; Mariarosa Cavallo; Giorgia Strobbia; Albin Colle; Marco Paye; Jiho Roh; Adrien Khalili; Clement Gureghian; Erwan Bossavit; Sandrine Ithurria; Yoann Prado; Sébastien Sauvage; Mathieu G. Silly; Nicolas Péré-Laperne; Debora Pierucci; Emmanuel Lhuillier

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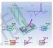

All-optically controlled multifunctional logic gates based on the positive and negative photoresponse of a one-dimensional ZnO/$CH_3NH_3PbBr_3$ heterostructure ✓

Wendong Lu; Xiaoxuan Wang; Yi Ma; Wanyu Wang; Zhenhua Zhang; Wei Xia; Chaoyang Huang; Feifei Qin; Zengliang Shi; Chunxiang Xu

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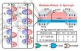

Nonvolatile spin logic-in-memory strategy by fully electrically multistate modulation in two-dimensional A-type antiferromagnets ✓

Zhi Yang; Bao-Fu Ruan; Bing-Xin Liu; Xun-Wang Yan; Gang Chen; Chuan-Kui Wang; Zong-Liang Li; Shuai Qiu

Appl. Phys. Lett. 127, 263501 (2025) https://doi.org/10.1063/5.0307787

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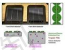

Spontaneous generation of athermal phonon bursts within bulk silicon causing excess noise, low energy background events, and quasiparticle poisoning in superconducting sensors EP ✓

C. L. Chang; Y.-Y. Chang; M. Garcia-Sciveres; W. Guo; S. A. Hertel; X. Li; J. Lin; M. Lisovenko; R. Mahapatra; W. Matava; D. N. McKinsey; P. K. Patel; B. Penning; H. D. Pinckney; M. Platt; M. Pyle; Y. Qi; M. Reed; I. Rydstrom; R. K. Romani; B. Sadoulet; B. Serfass; P. Sorensen; B. Suerfu; V. Velan; G. Wang; Y. Wang; M. R. Williams; V. G. Yefremenko; TESSERACT Collaboration

Appl. Phys. Lett. 127, 263502 (2025) https://doi.org/10.1063/5.0281876

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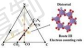
ENERGY CONVERSION AND STORAGE



Enhancing the energy density of CNO compounds through distorted carbon tetrahedra ✓

Yiqing Cao; Guanghui Zhang; YuQiu Zhang; Bo Zhao; Shengli Zhang; Wencai Yi; Xiaobing Liu

Appl. Phys. Lett. 127, 263901 (2025) https://doi.org/10.1063/5.0306229

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Design of high-efficiency Ga_2O_3-based betavoltaic battery utilizing the MG-HJ-PND structure ✓

Shiyu Sun; Hui Guo; Leidang Zhou; Chiwen Qian; Xiangjian Hu; Nan Zhang; Liang Chen; Sen Yang; Yuming Zhang; Xiaoping Ouyang

Appl. Phys. Lett. 127, 263902 (2025) https://doi.org/10.1063/5.0294422

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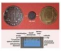

Photovoltaic nuclear electric battery based on single-crystal diamond core activated with carbon-14 ✓

Boris E. Burakov; Sergey N. Bocharov; Vitaliy S. Kalinovskii; Evgeny V. Kontrosh; Kseniia N. Orekhova; Grigorii A. Gusev; Petr A. Dementev; Aleksandr N. Trofimov; Vlad A. Kravets; Ivan A. Tolkachev; Kseniia K. Prudchenko; Ekaterina V. Dementeva; Maria V. Zamoryanskaya

Appl. Phys. Lett. 127, 263903 (2025) https://doi.org/10.1063/5.0310821

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Predicting anode coatings for solid-state lithium metal batteries via first-principles thermodynamic calculations and hierarchical ion-transport algorithms ✓

Bo Liu; Daguo Jiang; Yuxian Xie; Feng Lv; Haipeng Guo; Shenlin Zhou; Donglan Wu; Xianshi Zeng; Siqi Shi

Appl. Phys. Lett. 127, 263904 (2025) https://doi.org/10.1063/5.0307123

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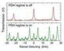

Mitigation of the magnetic-field-induced frequency shift in coherent-population-trapping atomic clocks ✓

D. V. Brazhnikov; V. I. Vishnyakov; M. N. Skvortsov

Appl. Phys. Lett. 127, 264001 (2025) https://doi.org/10.1063/5.0305867

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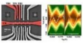

Active noise reduction in gated quantum devices ✓

Rajat Bharadwaj; Parvathy Gireesan; Harikrishnan Sundaresan; Chithra H. Sharma; Lucky Donald L. Kynshi; Prasad Muragesh; D. Bougeard; Madhu Thalakulam

Appl. Phys. Lett. 127, 264002 (2025) https://doi.org/10.1063/5.0303853

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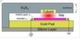

Voltage-tunable, femtometer-precision cantilever displacement and squeezing in a plasmomechanical system F ✓

Rasim Volga Ovali; Mehmet Emre Tasgin

Appl. Phys. Lett. 127, 264003 (2025) https://doi.org/10.1063/5.0293856

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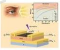
EMERGING AND INTERDISCIPLINARY APPLIED PHYSICS



Single-crystal PMN-PT gated ferroelectric field-effect transistor for artificial visual application ✓

Zhe Wu; Zishuo Fan; Wei Li; Xiaojian Chen; Xiaoyue Huang; Qiuxiang Zhu; Bobo Tian; Jie Jiao; Chang Yang; Anran Gao; Chun-Gang Duan

Appl. Phys. Lett. 127, 264101 (2025) https://doi.org/10.1063/5.0295247

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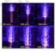

Insight into discharge mode transition in spatially confined pulsed bubbles-plasma system ✓

Hezhi Guo; Zhijie Liu; Zekai Zhang; Rui Zhu; Qiangwei Wu; Xin Li; Yuting Gao; Bolun Pang

Appl. Phys. Lett. 127, 264102 (2025) https://doi.org/10.1063/5.0309682

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Injection locking and coupling dynamics in superconducting nanowire-based cryogenic oscillators

Md Mazharul Islam; Md Shafayat Hossain; Kathleen E. Hamilton; Ahmedullah Aziz

Appl. Phys. Lett. 127, 264103 (2025) https://doi.org/10.1063/5.0297721

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