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Journal of Materials Chemistry C

Materials for optical, magnetic and electronic devices

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REVIEWS

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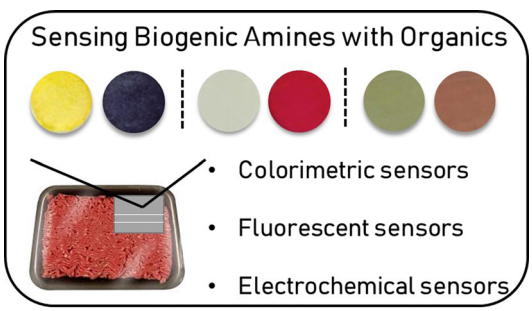
Biogenic amine sensors using organic π-conjugated materials as active sensing components and their commercialization potential

Michael J. Grant, Kathryn M. Wolfe, Cayley R. Harding and Gregory C. Welch*



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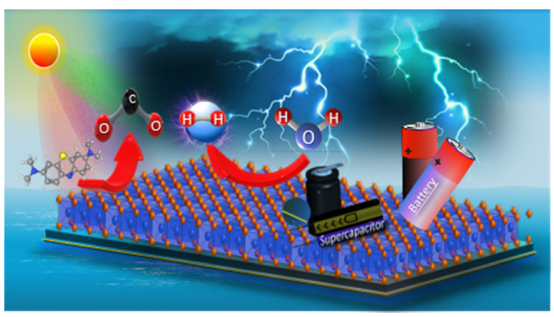
Versatility of group VI layered metal chalcogenide thin films synthesized by solution-based deposition methods

Vikas V. Magdum, Yogesh M. Chitare, Shirin P. Kulkarni, Prashant D. Sawant, Shraddha A. Pawar, Shweta V. Talekar, Chandrakant D. Lokhande, Umakant M. Patil, Sharad B. Patil and Jayavant L. Gunjakar*



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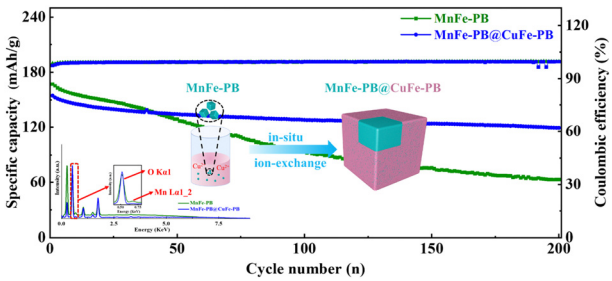
COMMUNICATION

9787

Ion exchange to construct a high-performance core–shell MnFe-PB@CuFe-PB cathode material for sodium ion batteries

Hongyu Cheng, Yi-Nuo Liu, Zhuo-Er Yu, Yingying Song, Yinping Qin, Maomao Zhang, Riming Chen, Jingjing Zhou, Yang Liu* and Bingkun Guo*



PAPERS

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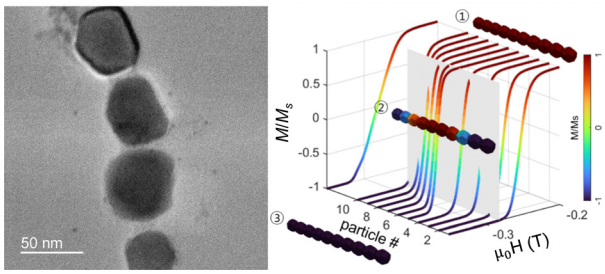
Magnetization reversals in magnetosome linear-chain assemblies extracted from magnetotactic bacteria: an experimental and micromagnetic simulation study

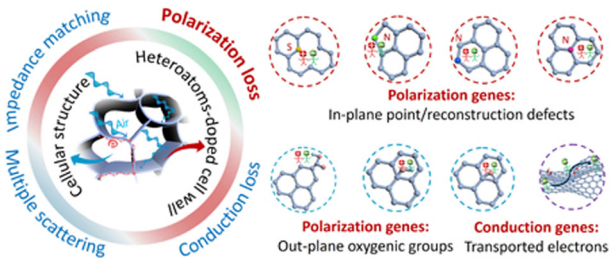
Gyuyoung Park, Hyeonah Jo, Yeon-Ju Oh, Saurabh Pathak and Sang-Koog Kim*



9804

Polarization genes dominated heteroatom-doped graphene aerogels toward super-efficiency microwave absorption

Xiaogu Huang,* Lan Zhang, Gaoyuan Yu, Jiawen Wei and Gaofeng Shao*



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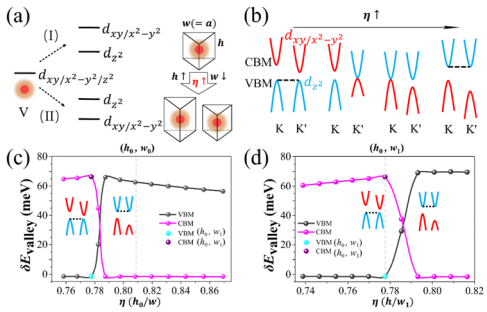
Effects of crystal deformation on spin-valley interplay and topological phase transition: a case study on VSi_2X_4 (X = N or P) monolayers

Zhenning Sun, Xinru Li,* Zhuojun Zhao, Yaojie Zeng, Yadong Wei* and Jian Wang



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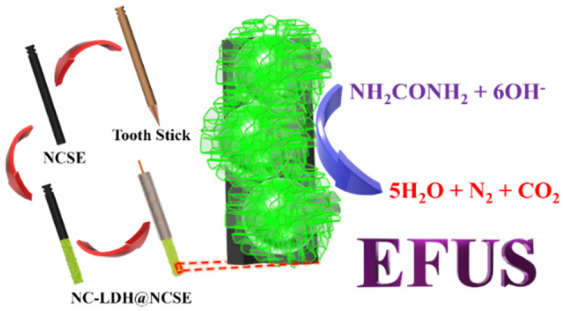

Exploration of 3D NiCu-layered double hydroxide flowers tailored on a biomass-derived N-doped carbon stick electrode as a binder-less enzyme-free urea sensing probe

Ameer Farithkhan, N. S. K. Gowthaman, Hong Ngee Lim* and S. Meenakshi*

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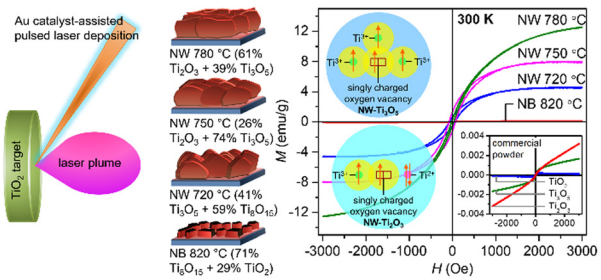

Oxygen-deficient dopant-free Ti_3O_5 and Ti_2O_3 ferromagnetic two-dimensional nanostructures for spin-based electronic devices

Md Anisur Rahman, Joseph Palathinkal Thomas, Mahdi Beedel, Xiaoyi Guan, Nina F. Heinig, Lei Zhang and Kam Tong Leung*

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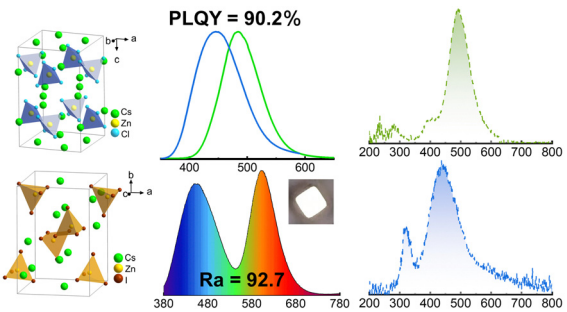

Efficient emission in copper-doped Cs_3ZnX_5 (X = Cl, I) for white LEDs and X-ray scintillators

Yubin Yang, Jianghua Wu, Tianrui Zhou, Yunluo Wang, Jiaqian Zheng, Ruifeng Liu, Jingshan Hou, Xiang Li, Lianjun Wang, Wan Jiang and Haijie Chen*

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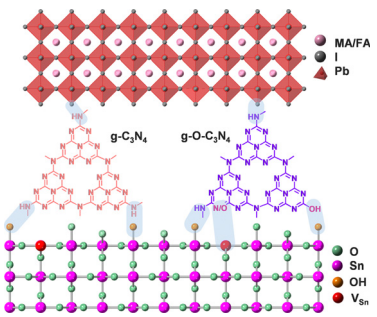

Trap engineering using oxygen-doped graphitic carbon nitride for high-performance perovskite solar cells

Yaling Lei, Xiaoyan Li, Jingying Liang, Junzhe Shi, Yunhao Wei, Pingli Qin,* Hong Tao, Jianjun Chen, Zuojun Tan* and Hongwei Lei*

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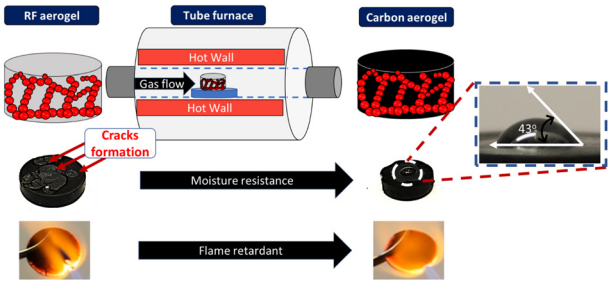
Next generation thermal insulators for operation in high-temperature and humid environments through aerogel carbonization

Mohammed Alshrah, Lun Howe Mark, Piyapong Buahom, Jung Hyub Lee, Sasan Rezaei, Hani E. Naguib and Chul B. Park*



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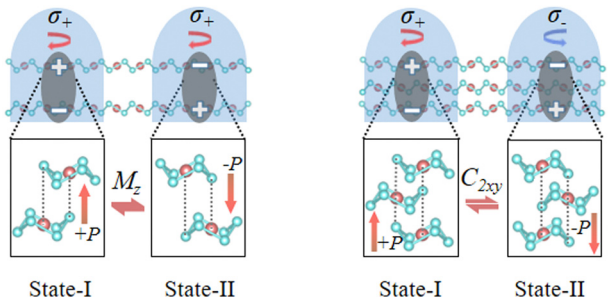
Tunable valley-selective circular polarization in vdW multilayers consisting of inversion-symmetric monolayers

Xikui Ma, Weifeng Li, Yangyang Li, Xiangdong Liu, Xian Zhao* and Mingwen Zhao*



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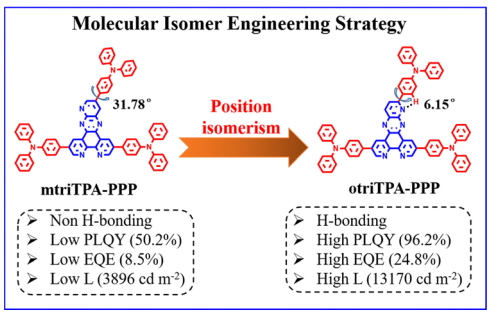
Isomerization design for improving the efficiency of red thermally activated delayed fluorescence emitters based on pyridopyrazinophenanthroline acceptor

Guo Yuan, Da-Hao Wang, Feng-Ming Xie, Bo Zhang, Ying-Yuan Hu, Qiang Zhang, Hao-Ze Li, Yan-Qing Li,* Jian-Xin Tang* and Xin Zhao*



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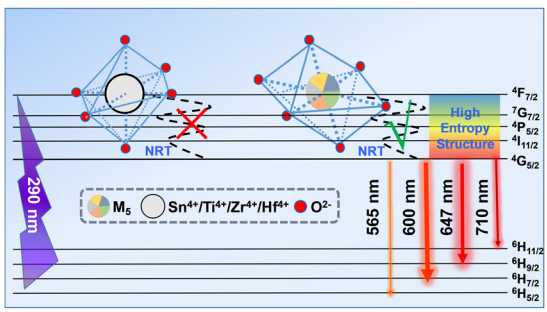
Superlattice-stabilized structure and charge transfer assisted photoluminescence enhancement in a samarium-doped high entropy perovskite oxide

Lei Xia, Zhan Mao, Xin Wang, Jing Zhu, Jiyang Xie, Zhe Wang and Wanbiao Hu*



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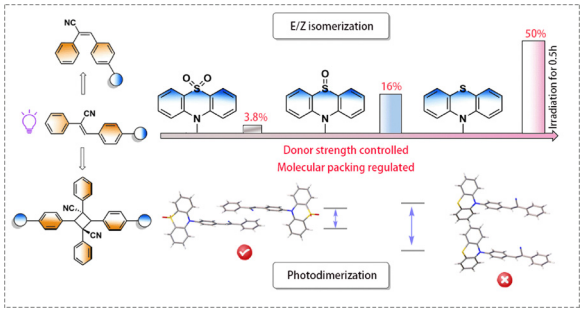

Modulating the electron-donating ability of aggregation-induced emission molecules for improved photo-responsive properties

Ri-Na Su, Qing-Qing Pan, Guan-Yu Ding, Jing Sun,* Li-Li Wen,* Kui-Zhan Shao, Si-Bo Wang, Guo-Gang Shan* and Zhong-Min Su

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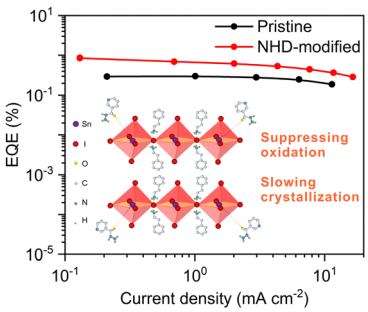

Regulated crystallization with minimized degradation for pure-red lead-free perovskite light-emitting diodes

Zong-Guang Ma, Yang Shen,* Kai Zhang, Long-Xue Cao, Hao Ren, Wei-Shuo Chen, Huai-Xin Wei, Yan-Qing Li,* Satoshi Kera and Jian-Xin Tang*

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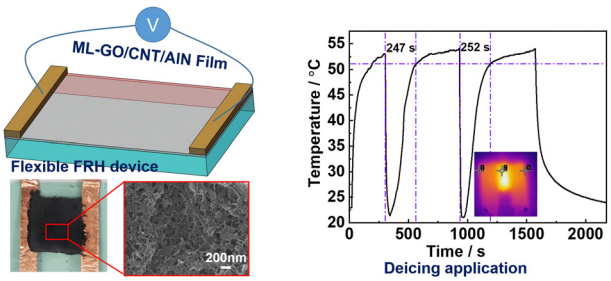

Multi-scale GO/CNT/AlN nanocomposites for high-performance flexible electrothermal film heaters

Zhaoling Huang, Siyuan Li, Hao Guo, Caiping Huang, Yuyu Bian, Yubing Gong, Jiaqiang Huang* and Qi Zeng*

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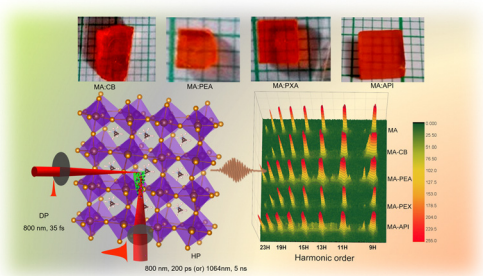

Additive engineering in $CH_3NH_3PbBr_3$ single crystals for terahertz devices and tunable high-order harmonics

Sarvani Jowhar Khanam, Srinivasa Rao Konda,* Azmeera Premalatha, Ravi Ketavath, Wufeng Fu, Wei Li* and Banavoth Murali*

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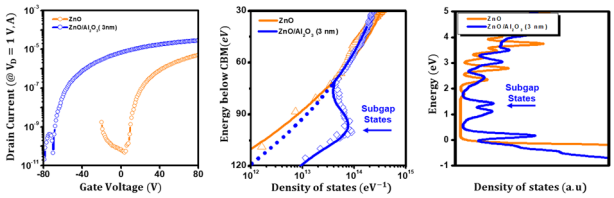
Subgap states in aluminium- and hydrogen-doped zinc-oxide thin-film transistors

Minho Yoon,* Dongho Hyun and Heung-Sik Kim*



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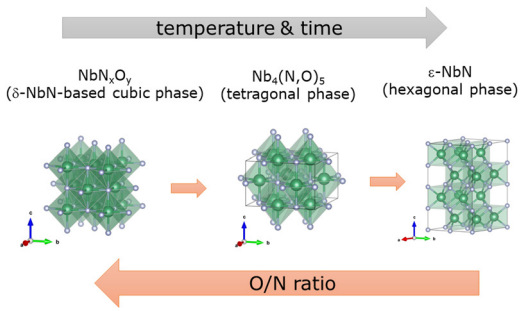
The effect of ammonolysis conditions on the structural properties and oxidation kinetics of cubic niobium oxynitride

Vanessa C. D. Graça,* Laura I. V. Holz, Francisco J. A. Loureiro, Glenn C. Mather and Duncan P. Fagg*



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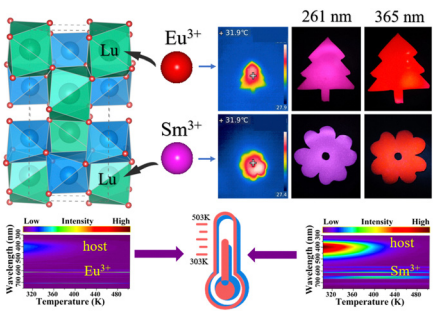
Tunable luminescence in Eu^{3+}/Sm^{3+} single-doped $LuNbO_4$ for optical thermometry and anti-counterfeiting

Yuqi Chen, Yu Xue, Qinan Mao, Lang Pei, Yang Ding, Yiwen Zhu, Meijiao Liu and Jiasong Zhong*



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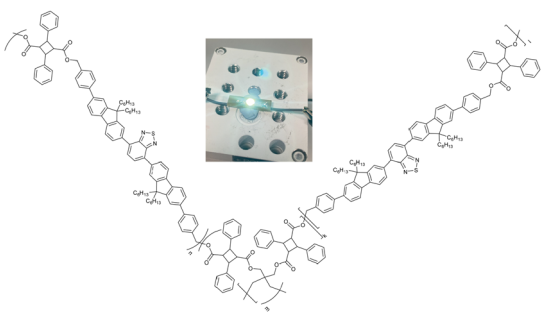
A cross-linkable, organic down-converting material for white light emission from hybrid LEDs

Hao Yang, Jochen Bruckbauer, Lyudmyla Kanibolotska, Alexander L. Kanibolotsky, Joseph Cameron, David J. Wallis, Robert W. Martin* and Peter J. Skabara*



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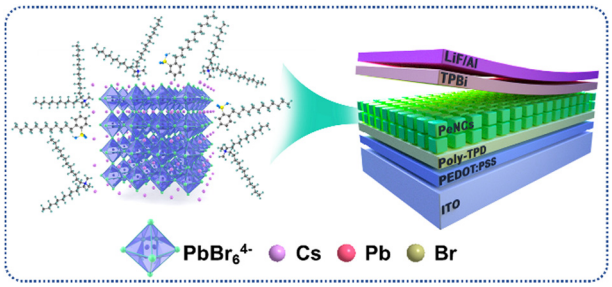

Trap states engineering toward all-inorganic $CsPbBr_3$ perovskite nanocrystals for highly efficient light-emitting diodes

Xudong Jin, Yanqin Miao, Jianhua Dong, Jingkun Wang, Qiqing Lu, Min Zhao,* Bingshe Xu* and Junjie Guo*

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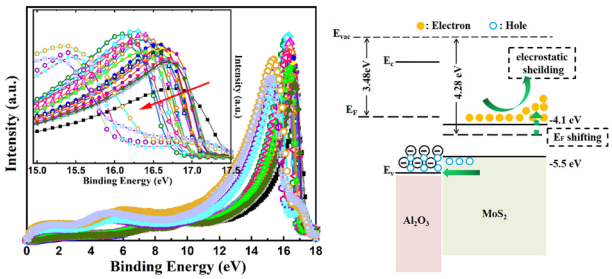

The effect of Al_2O_3 electrical shielding on MoS_2 energy structure modulation in MoS_2/p-Si heterojunction solar cells

Yu Zhang,* Zening Li, Peiyi Tong, Lukai Zhang, Wei Yu and Xiuling Liu*

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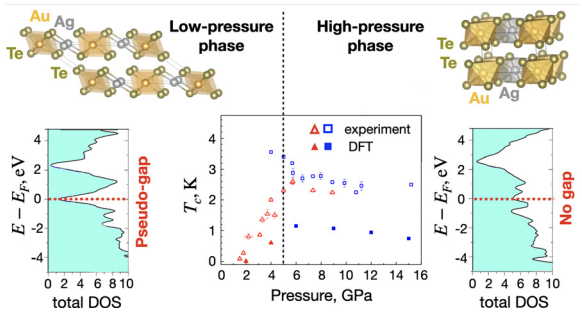
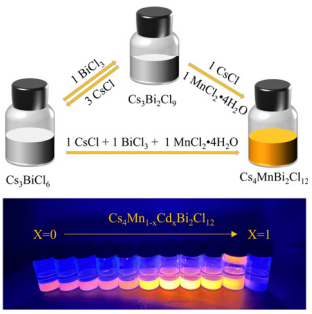


Silvanite $AuAgTe_4$: a rare case of gold superconducting material

Yehezkel Amiel, Gyanu P. Kafle, Evgenia V. Komleva, Eran Greenberg, Yuri S. Ponosov, Stella Chariton, Barbara Lavina, Dongzhou Zhang, Alexander Palevski, Alexey V. Ushakov, Hitoshi Mori, Daniel I. Khomskii, Igor I. Mazin, Sergey V. Streltsov, Elena R. Margine and Gregory Kh. Rozenberg*

10025



Continuous synthesis of all-inorganic low-dimensional bismuth-based metal halides $Cs_4MnBi_2Cl_{12}$ from reversible precursors Cs_3BiCl_6 and $Cs_3Bi_2Cl_9$ under phase engineering

Chunli Zhao, Yuan Gao* and Jianbei Qiu*

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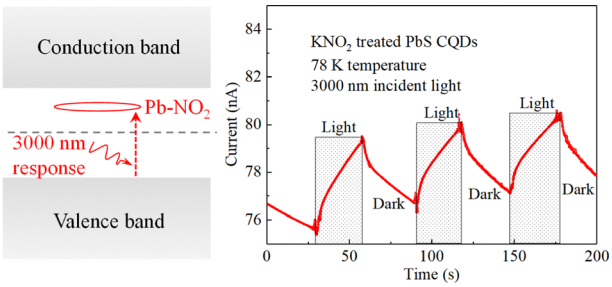
10033

Mid-infrared response of PbS colloidal quantum dot solids

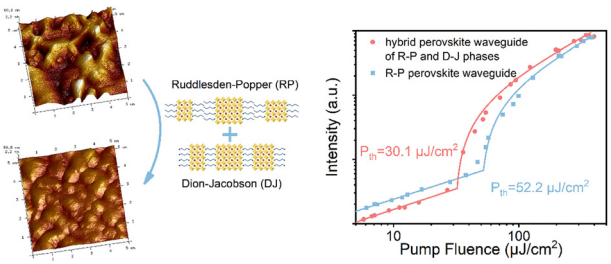
Jungang He,* Xianchang Zhou, Ya Wang, Mohan Yuan, Hang Xia, Xiao Chen, You Ge, Xia Wang, Liang Gao* and Jiang Tang



10043

Amplified spontaneous emission from waveguides based on hybrid quasi-2D perovskites of Dion–Jacobson and Ruddlesden–Popper phases

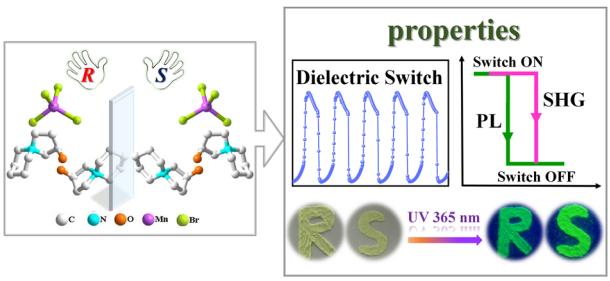
Yang Tang, Junhan Guo, Bin Liu, Liang Qin,* Zhenbo Deng, Yufeng Hu, Feng Teng, Zhidong Lou and Yanbing Hou*



10051

Dielectric/SHG/PL triple-channel properties in chiral spirocyclic organic–inorganic hybrids

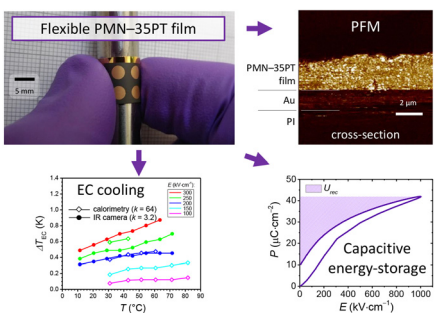
Xin-Ran Fan, Meng-Meng Lun, Zhi-Jie Wang, Bo-Wen Deng, Da-Wei Fu,* Chang-Feng Wang, Hai-Feng Lu* and Zhi-Xu Zhang*



10058

Multifunctional flexible ferroelectric thick-film structures with energy storage, piezoelectric and electrocaloric performance

Matej Sadl, Uros Prah, Veronika Kovacova, Emmanuel Defay, Tadej Rojac, Andrej Lebar, Joško Valentinčič and Hana Ursic*



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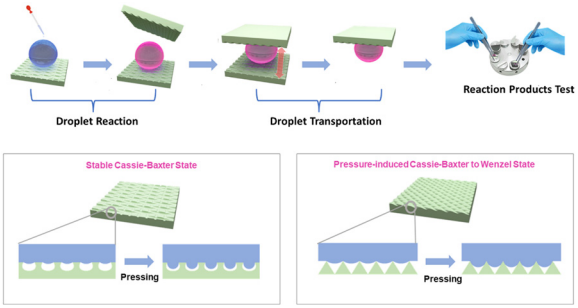
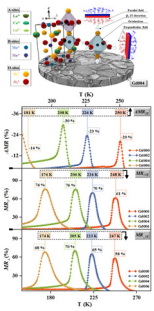
10069



Stretchable superhydrophobic elastomers with on-demand tunable wettability for droplet manipulation and multi-stage reaction

Xiaohong Ding, Yunchi Cai, Guofei Lu, Jiapeng Hu, Jinyun Zhao, Longhui Zheng, Zixiang Weng, Huanyu Cheng,* Jing Lin* and Lixin Wu*

10079



Polycrystalline $La_{0.66}Gd_{0.04}Ca_{0.3}MnO_3$ for magnetic-response applications: concurrent anisotropic magnetoresistance and magneto-transport under a low magnetic field

Sheng'an Yang, Junfeng Li, Jin Hu, Ruidong Xu, Hui Zhang, Lingde Kong, Xiang Liu, Ji Ma* and Qingming Chen*

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