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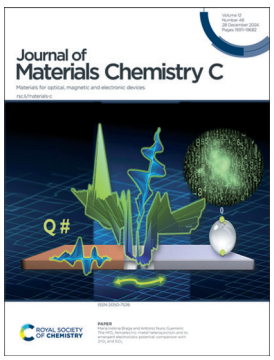

Cover
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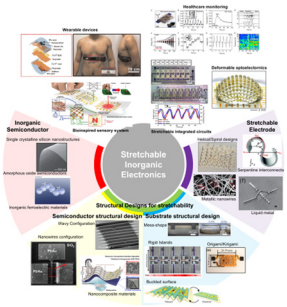
REVIEW

19323

Stretchable electronics based on inorganic semiconducting materials

Seung-Han Kang, Jeong-Wan Jo, Jaehyun Kim* and Sung Kyu Park*

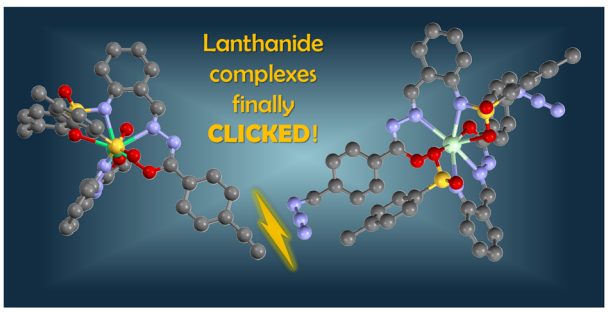


COMMUNICATIONS

19352

Heterometallic NIR-emitting nanothermometers by click-reaction between two lanthanide complexes

Daniil. S. Koshelev,* Aleksei V. Medved'ko, Alexander S. Goloveshkin, Yulia V. Nelubina, Olga A. Maloshitskaya, Elnara S. Safiullina, Yulia A. Gracheva, Evgeny A. Nikitin, Leonid S. Lepnev, Sergey Z. Vatsadze and Valentina V. Utochnikova*



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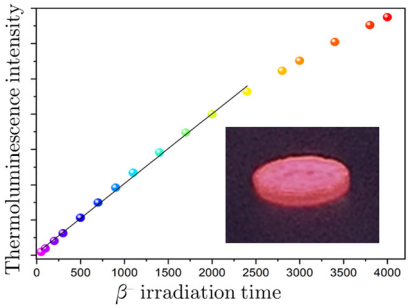
COMMUNICATIONS

19359

Photoluminescence, persistent luminescence and thermoluminescence studies of Cr-doped zinc gallogermanate (ZGGO:Cr)

Duarte M. Esteves,* Maria S. Batista, Joana Rodrigues, Ana V. Girão, Luís C. Alves, Ana L. Rodrigues, M. Isabel Dias, Florinda M. Costa, Katharina Lorenz, Sónia O. Pereira, Teresa Monteiro and Marco Peres



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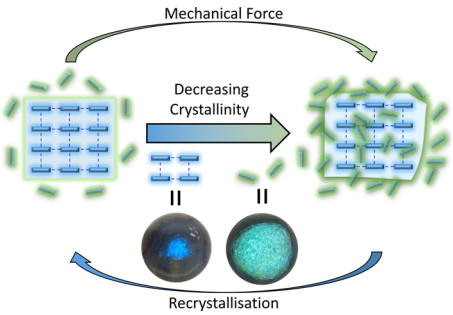
Fluorescence modulation of pyridinium betaines: a mechanofluorochromic investigation

Peter W. McDonald, Jingjing Xu, Dale R. Lonsdale, Isabelle Jones, Benjamin Poggi, Rosalind P. Cox, Stéphane Aloise, Andrew D. Scully, Clémence Allain, Laurence Bodelot, Stephen A. Moggach, Toby D. M. Bell, Rémi Métivier, Sebastian G. B. Furness, Lars Goerigk and Chris Ritchie*

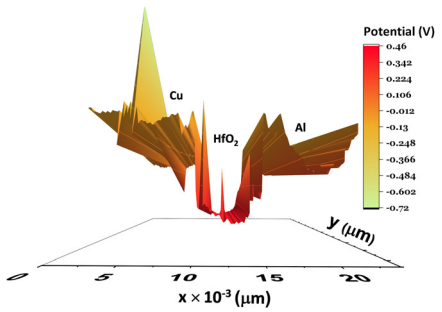


PAPERS

19386

The HfO_2 ferroelectric–metal heterojunction and its emergent electrostatic potential: comparison with ZrO_2 and SiO_2

Maria Helena Braga* and Antonio Nuno Guerreiro



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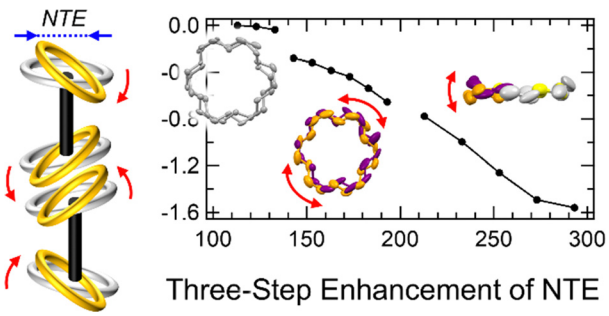
A three-step change in uniaxial negative thermal expansion by switching supramolecular motion modes in a ferromagnetically coupled nickel dithiolate lattice

Masato Haneda, Kiyonori Takahashi,* Naohiro Hasuo, Rui-Kang Huang, Chen Xue, Jia-bing Wu, Shin-ichiro Noro and Takayoshi Nakamura*



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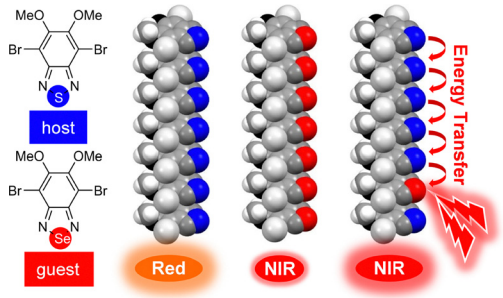
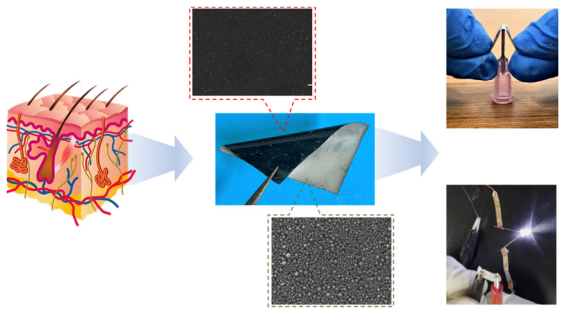
19404



Enhanced near-infrared phosphorescence found in a structurally similar host–guest system

Tsutomu Ishi-i,* Misuzu Nakaya, Tomoya Umeki, Taisuke Matsumoto, Jun Hyeon Lee and Takuma Yasuda

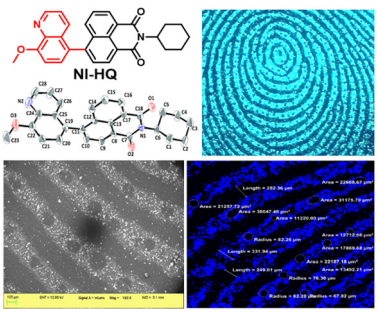
19412



Skin-inspired laminated liquid metal doped hydrogel with mechanical toughness and high electrical conductivity

Junlong Wang, Xiaosheng Huo, Wenjun Huang, Junbin Xu, Pengcheng Yu, Xiangqian Zhang, Zhenhua Cong* and Jian Niu*

19424



A novel TICT-based molecular rotor: synthesis, crystal structure and application in high resolution imaging of sweat pores

Sanjeev Kumar, Balkaran Singh Sran, Dharmendra Gahalot, Prakash Chandra Mishra and Prabhpreet Singh*

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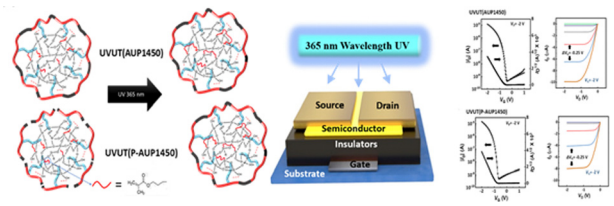

Low-voltage operated organic thin film transistors and integrated devices with photo-cured and patterned siloxane based organic–inorganic hybrid high-*k* dielectrics

Rixuan Wang, Hong Nhung Le, Xiaowu Tang, Heqing Ye, Zhijun Li, Hyeok-jin Kwon,* Juyoung Kim* and Se Hyun Kim*

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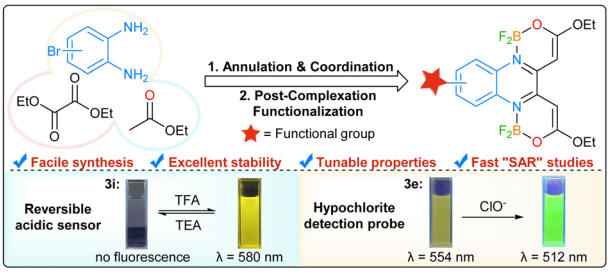
Diversity-oriented synthesis enables the rapid development of quinoxaline-based bis-boron fluorophores: photophysical properties and sensing applications

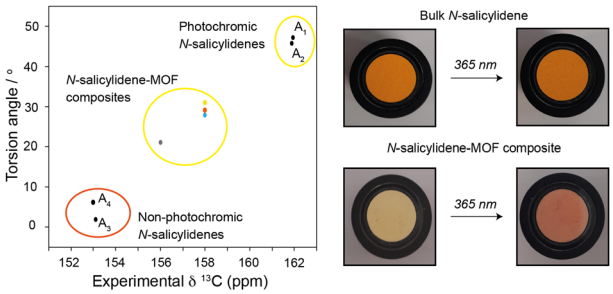
Chaochao Jin, Jiongpei Zhang, Zhihua Wang,* Daniel B. Werz* and Jiajing Tan*



19453

Molecular insights into solid-state photochromism in bulk and confined *N*-salicylidenes

Kieran Griffiths, Harry Brough, Ryan J. Bragg, Nathan R. Halcovitch and John M. Griffin*



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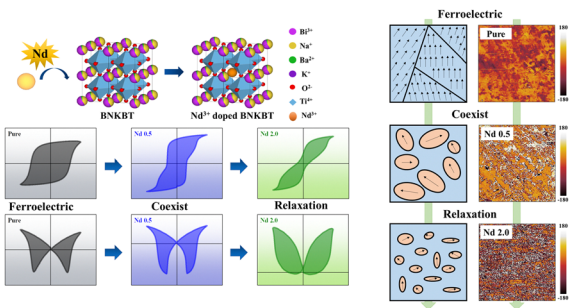
Unveiling the dynamics of phase-transition from ferroelectric to relaxor behavior in Nd-doped BNT-based lead-free piezoelectric ceramics

Jaegyeong Eom, Gwangseop Lee, Mohsin Saleem,* Masaya Ichimura, Muhammad Zubair Khan, Muhammad Bilal Hanif, Rizwan Ahmed Malik and Jung-Hyuk Koh*



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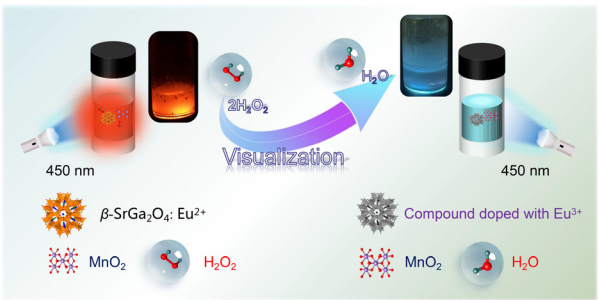
A polymorphic $SrGa_2O_4$:Eu^{2+} red phosphor for warm illumination and *operando* visualization of H_2O_2 catalytic reaction

Tao Hu,* Zelong Jiang, Hong Yang, Wei Lv, Ruijing Fu, Qingguang Zeng, Xiaodong Yi and Yan Gao*



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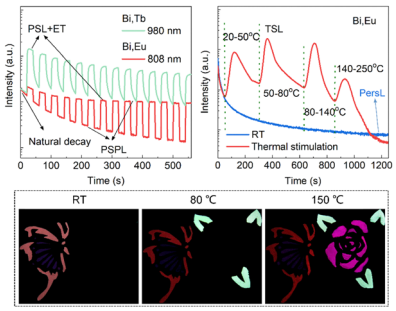
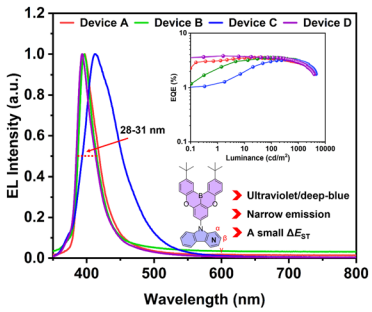


Controllable persistent luminescence in bismuth activated memory phosphors by trap management for artificial intelligence anti-counterfeiting

Dangli Gao,* Chengxue Du, Yuqiang Wang, Wenqian Xu, Wenna Gao, Qing Pang and Yuhua Wang*

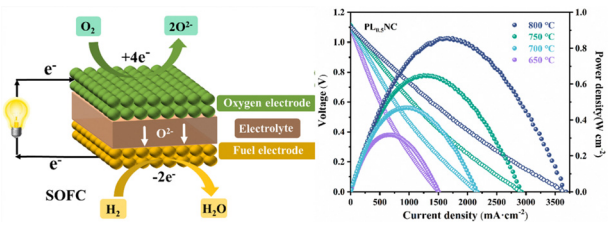
19498



Narrow emission band ultraviolet/deep-blue thermally activated delayed fluorescence emitters modified with carbazole/carboline as a donor

Pengcheng Jin, Xilin Yang, Wen-Tao Su, Shu-Hang Zhan, Xiliang Chen, Huaming Sun, Ben Yang, Shi-Jian Su* and Jian-Yong Hu*

19506



Enhanced oxygen electrode performance in solid oxide fuel cells *via* La-doping of $Pr_2NiO_{4+\delta}$-based Ruddlesden–Popper perovskites

Zihao Liao, Yiping Yang, Dingrong Ou, Yuan Tang, Bo Wang, Binbin He, Yu Zeng, Yunfeng Tian* and Bo Chi

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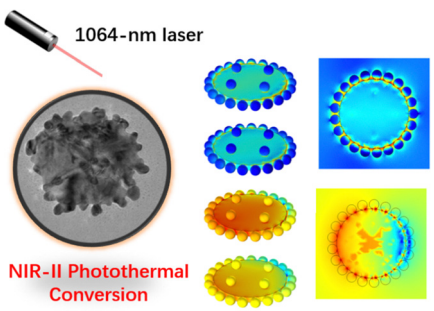

Enhancing near-infrared II photothermal conversion through anchoring numerous nanospheres to the edge of a gold nanosheet

Yajie Kong, Qi He, Heng Zhang, Haoyu Sun, Yi Wang,* Xiaohu Wu,* Yanyun Ma and Yiqun Zheng*

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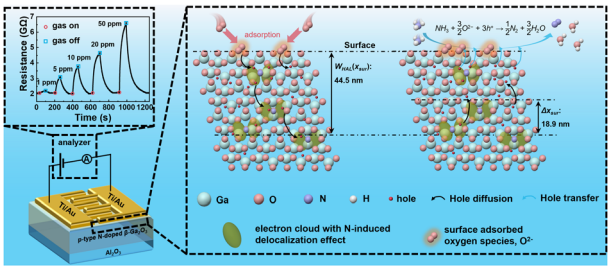
p-Type β-Ga_2O_3 film room-temperature NH_3 gas sensors with fast gas sensing and a low limit of detection

Hongchao Zhai, Zhengyuan Wu,* Kai Xiao, Meiying Ge, Chenxing Liu, Pengfei Tian, Jing Wan, Jianlu Wang, Junyong Kang, Junhao Chu and Zhilai Fang*



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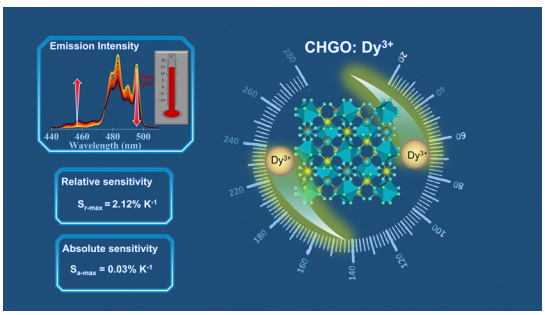
Achieving high sensing sensitivity in a Dy^{3+} doped garnet phosphor toward optical thermometry

Shichang Long, Minfeng Tian, Dan Zhang, Xixian Luo, Wen Xu, Ying Tian* and Shuangyu Xin*



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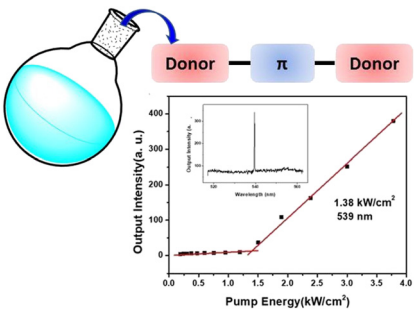
Ladder-type materials with D–π–D architectures as robust gain media for organic lasers

Cheng-Fang Liu, Kun Gao, Ting Zhao, Lin Si, Chuanqi Ding, Xu Liu, Xiangchun Li and Wen-Yong Lai*



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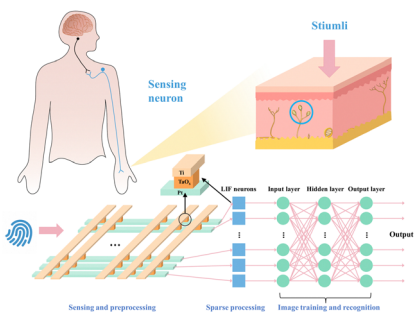
A TaO_x-based self-rectifying memristor for a highly compact thermal in-sensor computing system

Lijuan Cao, Yunhao Luo, Jiaping Yao, Xiang Ge, Maoyuan Luo, Jiaqi Li, Xiaomin Cheng,* Rui Yang and Xiangshui Miao



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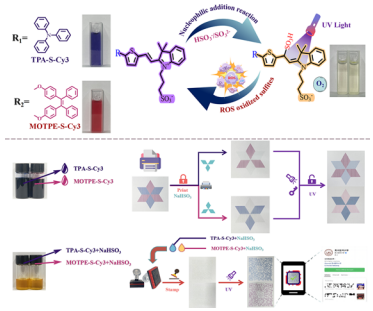

New anti-counterfeiting materials based on hemicyanine dyes: HSO_3^-/SO_3^{2-} encryption and UV light decryption

Xiaofeng Shan, Xu Zhou, Qian Wang, Linyi Shen, Hong Xu,* Carl Redshaw, Xing Feng* and Qilong Zhang*

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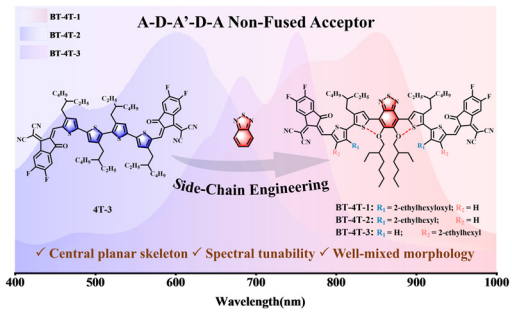
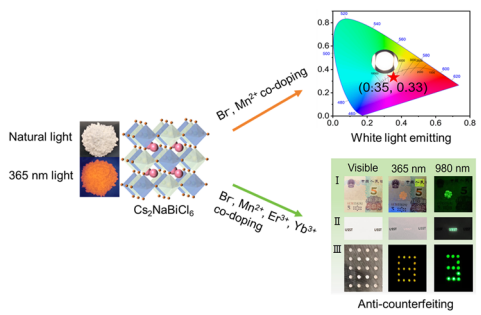


Spectra tunable non-fused ring electron acceptors *via* incorporation of an electron-deficient unit and side-chain engineering

Wenjing Liu, Yu Mi, Shuaishuai Shen and Jinsheng Song*

19578



Ion-doped lead-free double perovskite $Cs_2NaBiCl_6$ with multiple excitation and tunable emission towards light emitting and anti-counterfeiting applications

Junxiang Pei, Haofeng Li, Xiaodong Yuan, An Su, Dechao Yu* and Dawei Zhang

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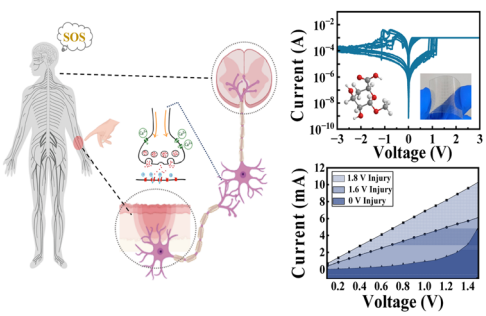

A pectin-based artificial nociceptor enabling actual tactile perception

Linqing Zhou, Junqing Wei,* Zewen Li, Kuibo Lan, Guoxuan Qin, Fang Wang* and Kailiang Zhang*

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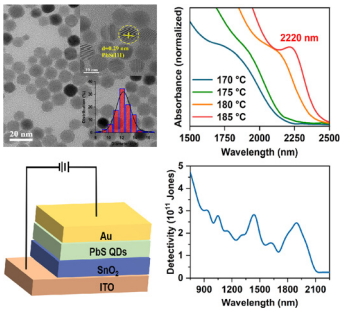
Size-controllable fabrication of PbS quantum dots for NIR–SWIR photodetectors with extended wavelengths

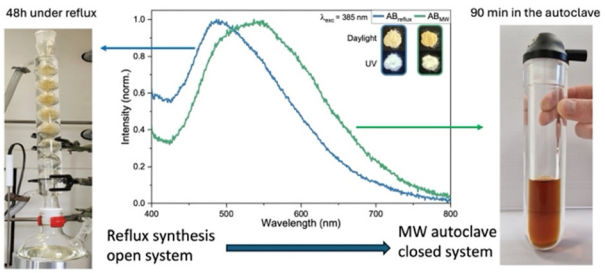
Qilong Wang, Congya You, Qi Yan, Qingjuan Xie, Wenjie Deng, Ming Liu, Huiyu Li,* Songlin Yu* and Yongjun Feng*



19603

Investigation on the role of nitrates in the microwave-assisted autoclave Pechini synthesis of aluminoborate phosphors

Jérémy Cathalan, Mathieu Salaün,* Audrey Potdevin, François Réveret, Geneviève Chadeyron and Isabelle Gautier-Luneau*



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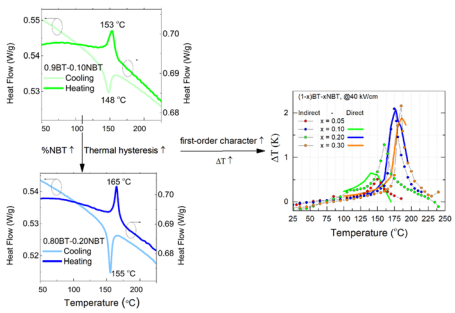
Stabilization of the first-order phase transition character and enhancement of the electrocaloric effect by $Na_{0.5}Bi_{0.5}TiO_3$ substitution in $BaTiO_3$ ceramics

Merve Karakaya, İrem Gürbüz, Lovro Fulanović and Umut Adem*



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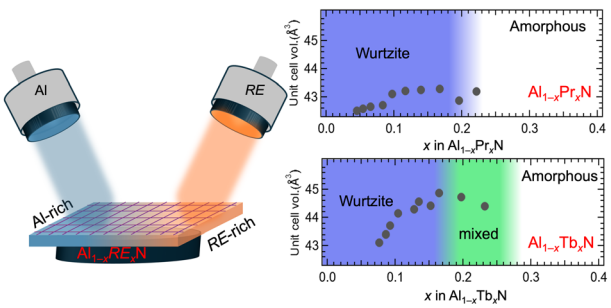
Combinatorial synthesis and characterization of thin film $Al_{1-x}RE_xN$ (RE = Pr^{3+} and Tb^{3+}) heterostructural alloys

Binod Paudel,* John S. Mangum, Christopher L. Rom, Kingsley Egbo, Cheng-Wei Lee, Harvey Guthrey, Sean Allen, Nancy M. Haegel, Keisuke Yazawa, Geoff L. Brennecka and Rebecca W. Smaha*



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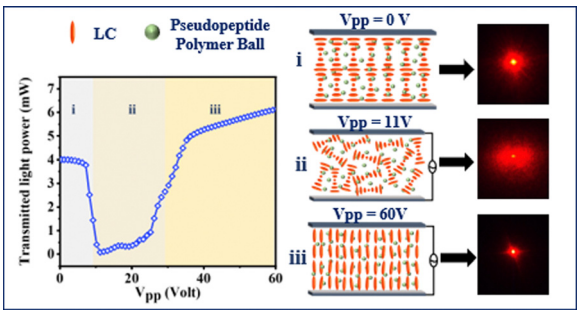
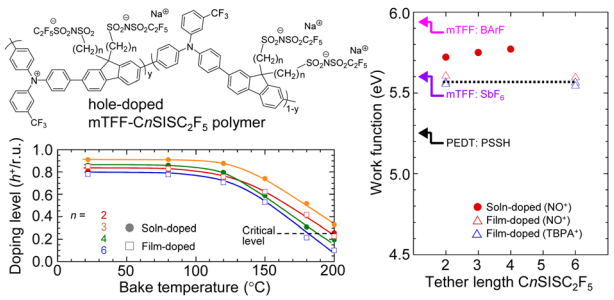


A tunable light scattering device fabricated using pseudopeptide polymer incorporated chiral nematic liquid crystal

Rishikesh Kushawaha, Sagar Jawla, V. Haridas and Aloka Sinha*

19643



Effect of counterion tether length on stability, work function and application of a self-compensated, hole-doped triarylamine-*alt*-fluorene model polymer

Qi-Mian Koh, Kevin Christopher Boellaard, Yu Wang, Cindy G. Tang, Qiu-Jing Seah, Peter. K. H. Ho, Rui-Qi Png* and Lay-Lay Chua*

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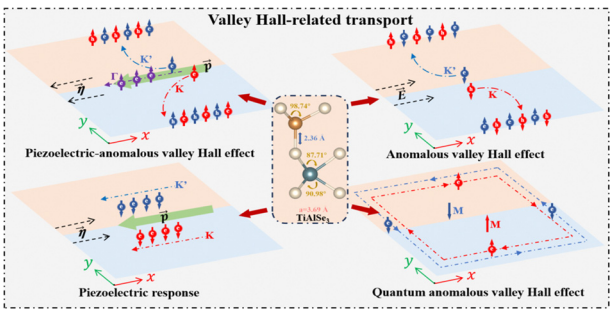
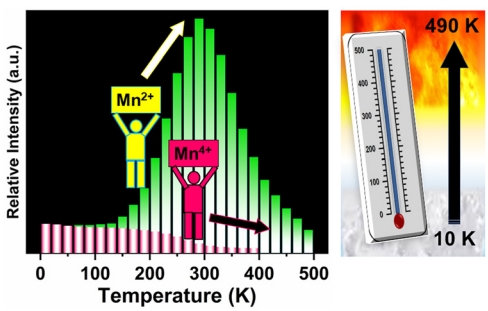


Piezoelectric polarizations and valley-related multiple Hall effects in $TiAlX_3$ monolayers (X = Se, Te)

Jia Li,* Jianke Tian, Hengbo Liu, Yan Li, Linyang Li, Jun Li, Guodong Liu and Junjie Shi

19671



Abnormal anti-thermal quenching of Mn^{2+} and reverse thermal response of Mn^{2+}/Mn^{4+} luminescence in garnet phosphor for wide-range temperature sensing

Annu Balhara, Santosh K. Gupta,* G. D. Patra, Boddu S. Naidu and Kathi Sudarshan