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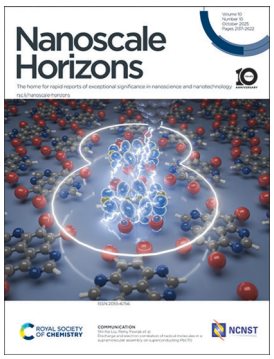

Inside cover
See Shi-Xia Liu, Rémy Pawlak *et al.*, pp. 2365–2373. Image reproduced by permission of Rémy Pawlak from *Nanoscale Horiz.*, 2025, **10**, 2365.

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Katsuhiko Ariga

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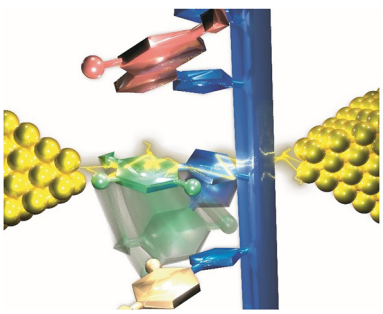
Makusu Tsutsui



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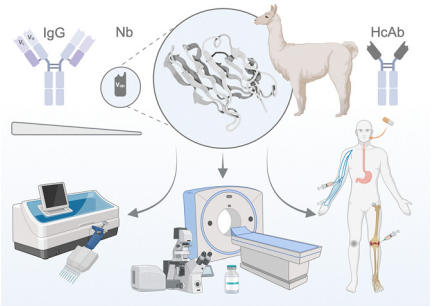
REVIEWS

2158

Small but mighty: the versatility of nanobodies in modern medicine

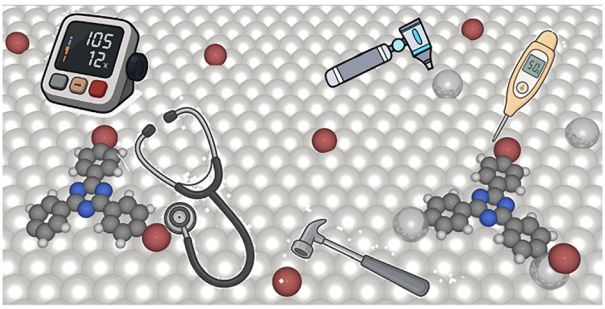
Mike Blueggel, Désirée Gül, Roland H. Stauber and Shirley K. Knauer*



2172

On the utility of complementary analytics for on-surface synthesis

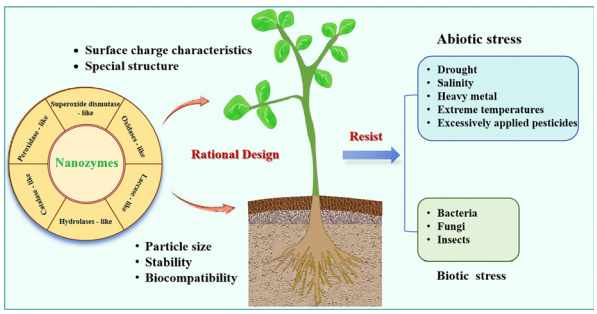
Markus Lackinger



2184

Nanozymes: recent advances for sustainable agricultural development

Runxin Hou, Na Yin,* Yinghui Wang,* Shuyan Song and Hongjie Zhang



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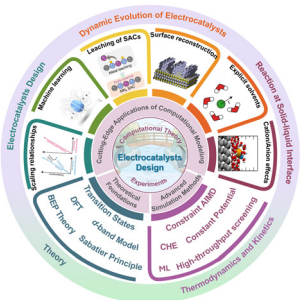
Advances in computational approaches for bridging theory and experiments in electrocatalyst design

Yaqin Zhang, Yu Xiong, Yuhang Wang, Qianqian Wang and Jun Fan*



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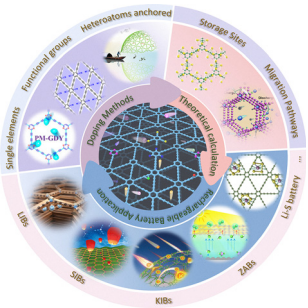

Doped-graphdiyne: synthesis, theoretical prediction and application for electrochemical energy storage

Ziqi Chen, Deyi Zhang, Ze Yang,* Yan Xu,* Xuqi Wang, Hao Huang, Fangcheng Qiu and Changshui Huang*

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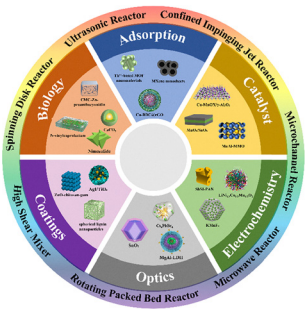
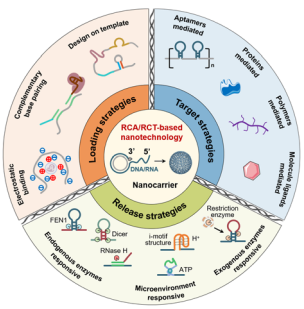


From microchannels to high shear reactors: process intensification strategies for controlled nanomaterial synthesis

Zixuan Feng, Junheng Guo,* Yingcheng Wang, Jiaoyan Shi, Huiwen Shi, Haojie Li, Jinli Zhang and Jiangjiexing Wu*

2285



Rolling circle amplification/transcription-based nanotechnology for efficient delivery of nucleic acid drugs

Xun You, Qingxuan Zeng, Tianshuang Xia, Xiaocui Guo,* Chi Yao* and Dayong Yang*

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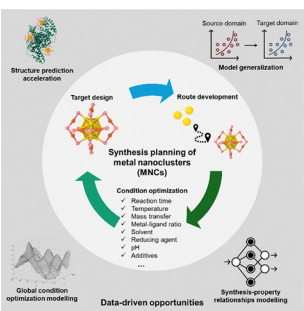

Synthesis planning for atomically precise metal nanoclusters

Jingkuan Lyu, Jing Qian, Zhucheng Yang and Jianping Xie*

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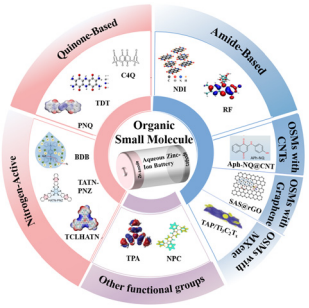
REVIEWS

2340

Organic small-molecule cathodes for aqueous zinc-ion batteries: design strategy, application and mechanism

Lingyan Long, Kailing Mei, Zheyun Hou, Yong Wang, Haijiao Zhang and Weiwei Sun*

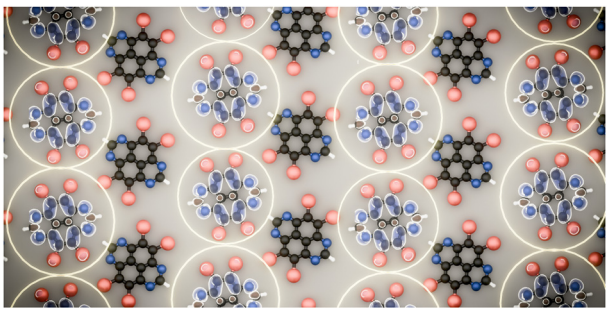


COMMUNICATIONS

2365

Discharge and electron correlation of radical molecules in a supramolecular assembly on superconducting Pb(111)

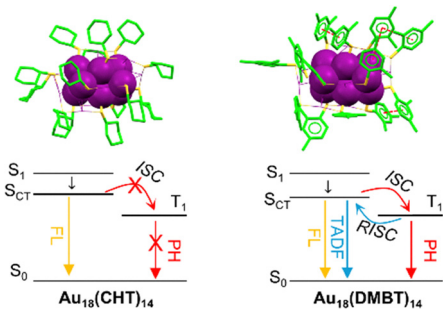
Carl Drechsel, Chao Li, Jung-Ching Liu, Xinyi Liu, Robert Häner, Silvio Decurtins, Ulrich Aschauer, Shi-Xia Liu,* Ernst Meyer and Rémy Pawlak*



2374

Surface ligand networking promotes intersystem crossing in the $Au_{18}(SR)_{14}$ nanocluster

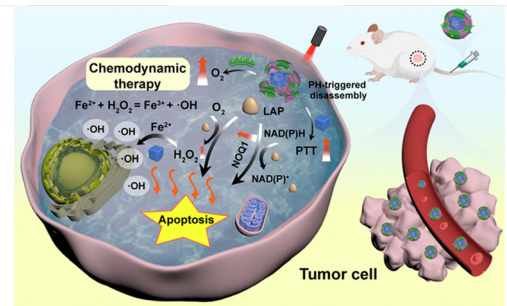
Guiying He, Zhongyu Liu, Yitong Wang, Matthew Y. Sfeir and Rongchao Jin*



2381

Biomimetic nanozymes catalyze cascade reactions for enhanced tumor nanocatalytic therapy

Cong-Min Huo, Peng-Li Ding, Si-Ye Tong, Houjuan Zhu, Shuo Gao, Yun-Yi Li, Jing-Yi Zhu* and Wei Xue



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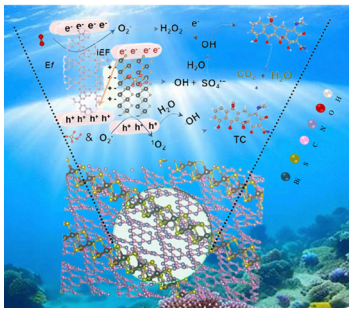
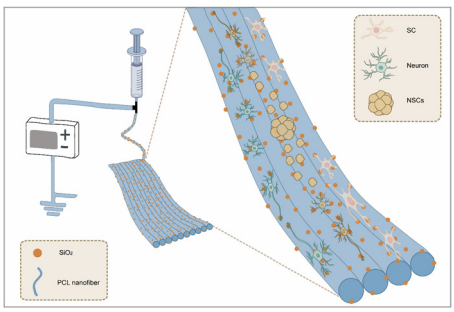


***In situ* interfacial engineering of 1D Bi_2S_3/2D g-C_3N_4 heterostructures for antibiotics degradation in aqueous media *via* light mediated peroxymonosulfate activation**

Muhammad Mateen,* Guanrong Chen, Na Guo* and Wee Shong Chin*

2411



"Cell climbing stones" – varying the surfaces of electrospun nanofibers with protrusions as secondary structures to manipulate neural cell behaviors

Yawen Wang, Xiaopei Zhang, Lijie Yao, Yuying Yan, Yuanfei Wang and Tong Wu*

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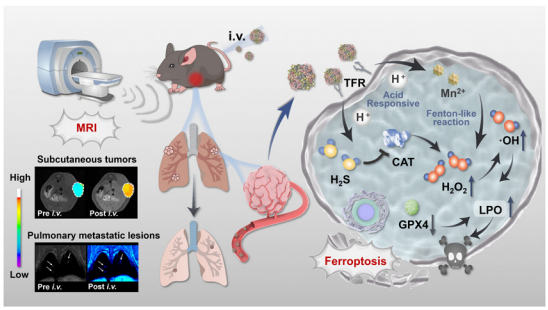

A transferrin-targeted nanoplatform for MRI-guided visualization and potent suppression of tumors and pulmonary metastatic lesions

Liya Tian, Pengju Ma, Wenxiu Zhuang, Yinlong Xu, Lihua Pang, Kai Guo, Ke Ren, Xueli Xu, Xiao Sun* and Shunzhen Zheng*

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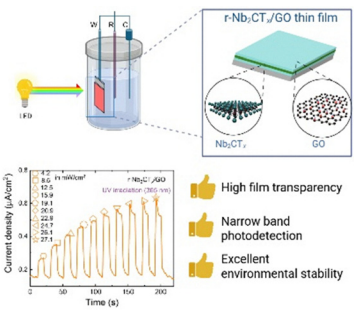

Unraveling interfacial interactions in reduced Nb_2CT_x/GO heterostructures for highly stable and transparent narrow-band photoelectrochemical photodetectors

Muhammad Abiyyu Kenichi Purbayanto,* Subrata Ghosh, Dorota Moszczyńska, Carlo S. Casari and Agnieszka Maria Jastrzębska*

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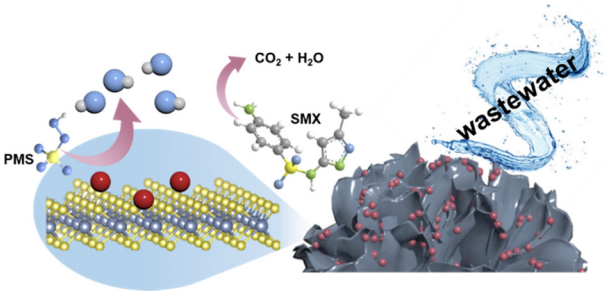
Upscaled wood@MoS_2/Fe_3O_4 bulk catalysts for sustainable catalytic water pollutant removal

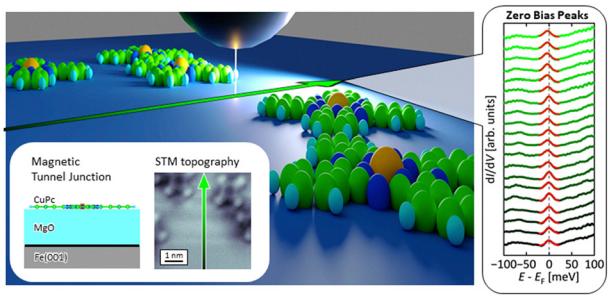
Lingli Zhu, Wei Ren,* Ya Liu, Zhong-Shuai Zhu, Shuang Zhong, Shaobin Wang and Xiaoguang Duan*



2454

Emergence of a zero-bias peak on the MgO/Fe(001) surface induced by the adsorption of a spin-1/2 molecule

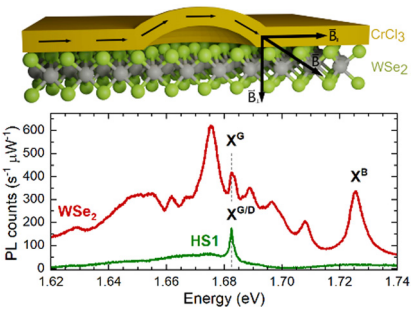
Kyosei Ishii, Nana K. M. Nazriq, Peter Krüger and Toyo Kazu Yamada*



2465

Interplay between charge transfer and magnetic proximity effects in $WSe_2/CrCl_3$ heterostructures

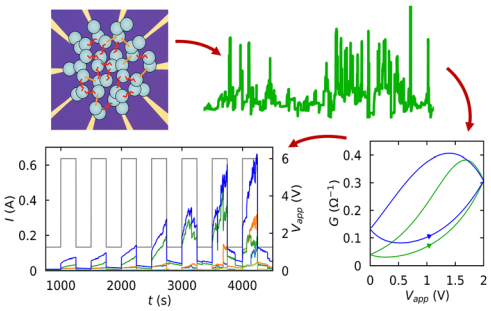
Łucja Kipczak,* Zhaolong Chen, Magdalena Grzeszczyk, Sergey Grebenchuk, Pengru Huang, Kristina Vaklinova, Kenji Watanabe, Takashi Taniguchi, Adam Babiński, Maciej Koperski* and Maciej R. Molas*



2475

Learning and spiking dynamics in brain-like nanoscale networks

B. L. Monaghan, Z. E. Heywood, S. J. Studholme, F. Houard, J. Grisolia, S. Tricard and S. A. Brown*



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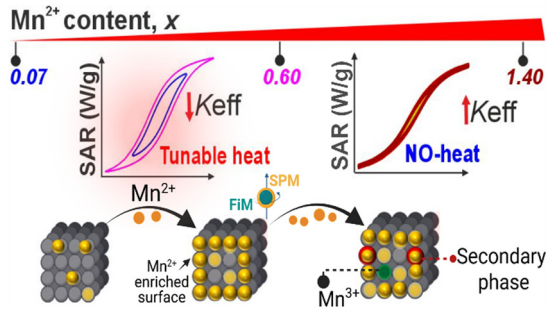
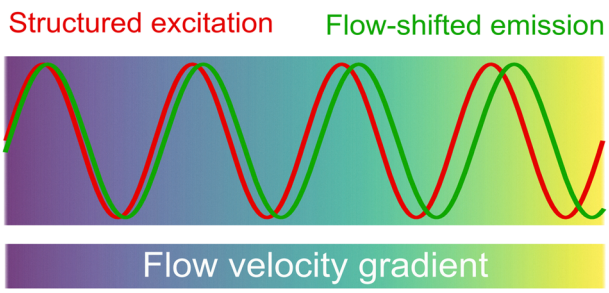


Unraveling the Mn^{2+} substitution effect on the anisotropy control and magnetic hyperthermia of $Mn_xFe_{3-x}O_4$ nanoparticles

Oscar F. Odio, Giuseppina Tommasini, F. J. Teran, Jesus G. Ovejero, Javier Rubín, María Moros* and Susel Del Sol-Fernández*

2504



Photophysical structured illumination velocimetry based on the long-lasting emission response of lanthanide luminescent nanoparticles

Haichun Liu* and Jerker Widengren*

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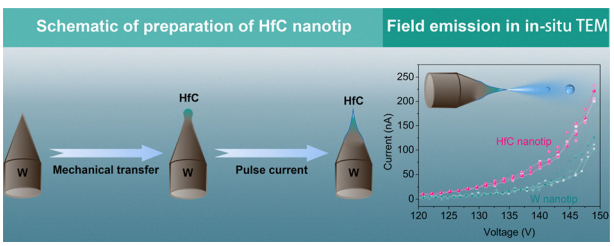
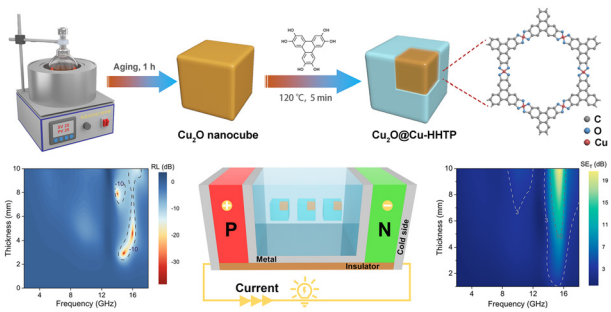


***In situ* growth and field emission of single-crystal HfC nanotips**

Chaojie Li, Jianxun Xu,* Lihua Wang* and Xiaodong Han

2526



A core–shell Cu_2O@Cu-MOF for electromagnetic wave absorption and selective shielding

Ji-You Zong, Zhan-Zhan Wang, Meng-Qi Wang, Jin-Cheng Shu,* Wen-Qiang Cao* and Mao-Sheng Cao*

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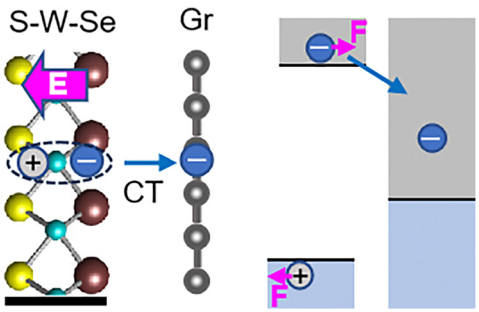
Photodoping of graphene with long-lived electrons by interfacing with Janus WSSe

Ting Zheng, Yu-Chuan Lin,* Zhenhua Ni, Kai Xiao and Hui Zhao*



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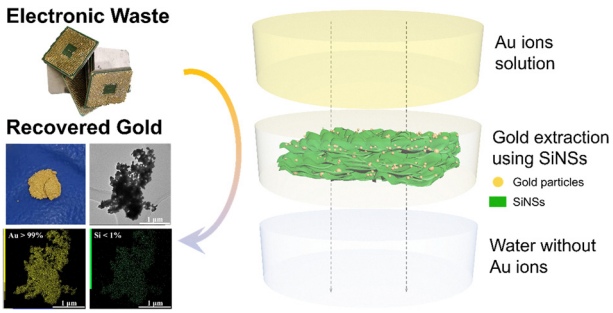
High-efficiency gold recovery from electronic waste with 2D silicon nanosheets

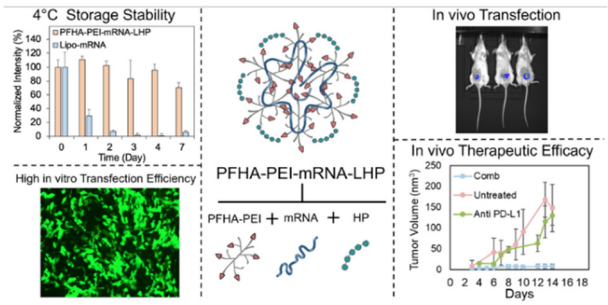
Dingxuan Kang, Chuanwang Xing, Chengcheng Zhang, Shenghua Wang, Yuhang Dong, Deren Yang and Wei Sun*



2550

A modular polymer platform for efficient mRNA delivery in cancer immunotherapy

Guanyou Lin, Jianxi Huang, Xinqi Li, Yunshan Liu, Taylor Juenke, Arthur Finstad and Miqin Zhang*



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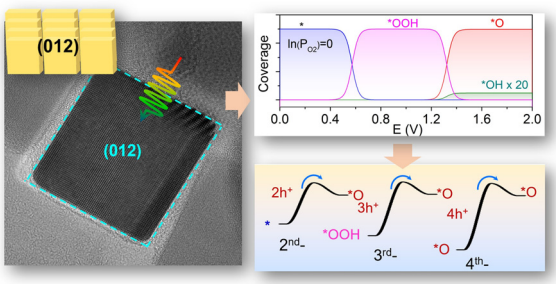
Potential-driven reaction order transitions of water oxidation on hematite photoanodes

Yanjie Liu, Zhixuan Dong, Qingqing Li, Jundie Hu,* Jiafu Qu, Meiying Gong, Wei Sun, Chang Ming Li and Xiaogang Yang*



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COMMUNICATIONS

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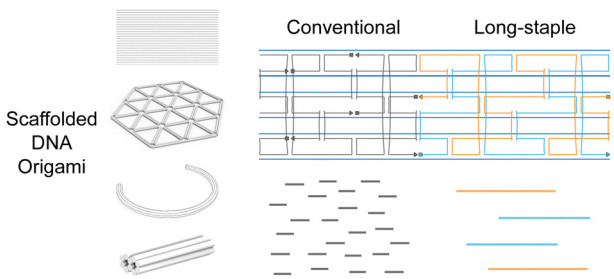
$$\frac{\hat{E}}{k_B\theta} = \frac{E}{k_B T}$$

A finite-size statistical mechanics approach to quantum confinement effects on nanoscale energy-related properties

A. Pérez-Madrid* and I. Santamaría-Holek*

2584



A long-staple design approach towards the scalable production of scaffolded DNA origami

Chanseok Lee,* Yanggyun Kim, Kyounghwa Jeon, Taeyoung Ryu and Do-Nyun Kim*

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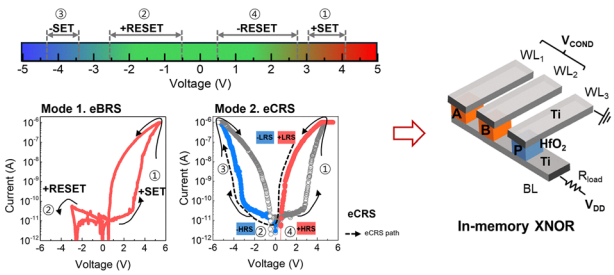

Dual-mode switching of a bidirectional self-rectifying Ti/HfO_2/Ti device for bipolar and electronic complementary resistive switching

Hyun Young Kim, Néstor Ghenzi, Hyungjun Park, Dong Hoon Shin, Dong Yun Kim, Tae Won Park, Jea Min Cho, Taegyun Park* and Cheol Seong Hwang*

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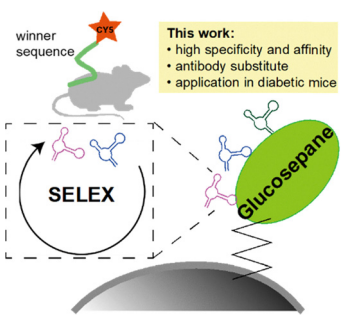

FluMag-SELEX derived specific individual aptamers can fluorescently label the ageing immanent protein-crosslinker glucosepane in diabetic mouse tissues

Runliu Li, Bastian Draphoen, Mika Lindén, Karmveer Singh, Karin Scharffetter-Kochanek, Andreas Stürmer, Frank Rosenau* and Ann-Kathrin Kissmann*

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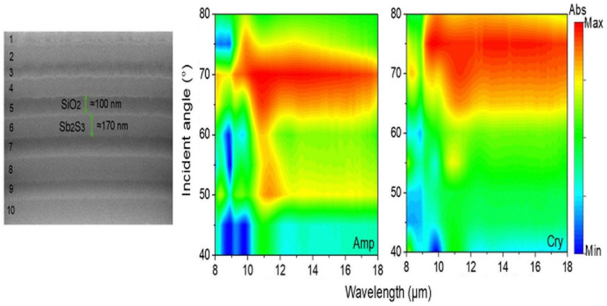
Tunable directional thermal emission using a phase change material-based multilayer structure

Kandammathe Valiyaveedu Sreekanth,*
Qing Yang Steve Wu, Sambhu Jana,
Ranjan Singh and Jinghua Teng*



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