

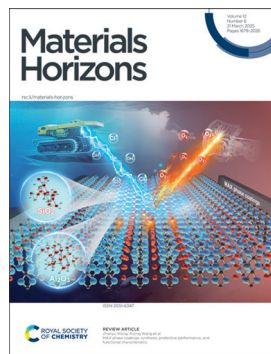
Materials Horizons

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See Zhenyu Wang, Aiyang Wang *et al.*, pp. 1689–1710. Image reproduced by permission of Zhenyu Wang from *Mater. Horiz.*, 2025, 12, 1689.



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See Chih-Hao Chang *et al.*, pp. 1796–1807. Image reproduced by permission of Mehmet Kepenekci and Chih-Hao Chang from *Mater. Horiz.*, 2025, 12, 1796.

REVIEWS

1689

MAX phase coatings: synthesis, protective performance, and functional characteristics

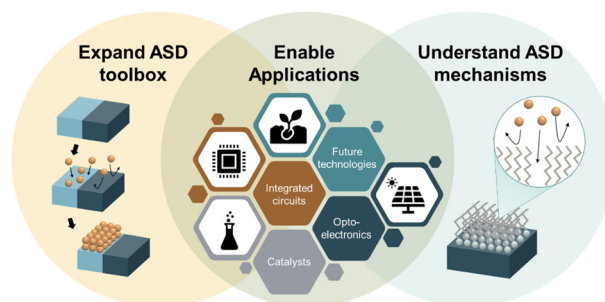
Guanshui Ma, Anfeng Zhang, Zhenyu Wang,* Kaihang Wang, Jiayue Zhang, Kaixuan Xu, Yuxi Xu, Shenghao Zhou and Aiyang Wang*



1711

Nanostructure fabrication by area selective deposition: a brief review

Tzu-Ling Liu and Stacey F. Bent*



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Fundamental questions
Elemental answers

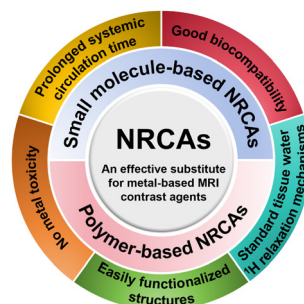


REVIEWS

1726

Nitroxide radical contrast agents for safe magnetic resonance imaging: progress, challenges, and perspectives

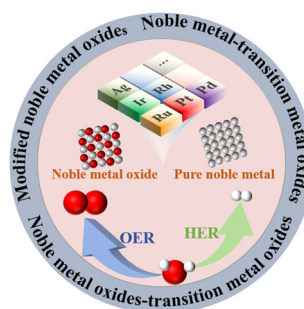
Xunchun Yuan, Haojie Yu,* Li Wang,* Md Alim Uddin and Chenguang Ouyang



1757

Recent achievements in noble metal-based oxide electrocatalysts for water splitting

Feng Wang, Linfeng Xiao, Yuwei Jiang, Xijun Liu, Xue Zhao,* Qingquan Kong, Abdukader Abd McKayum* and Guangzhi Hu*

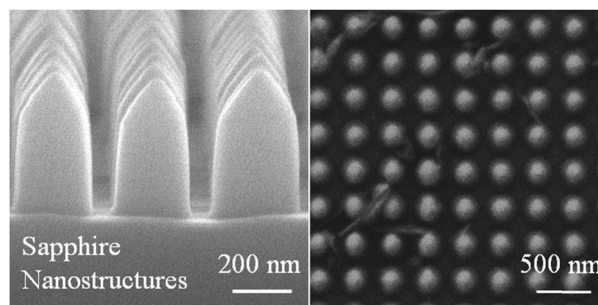


COMMUNICATIONS

1796

Scratch-resistant sapphire nanostructures with anti-glare, anti-fogging, and anti-dust properties

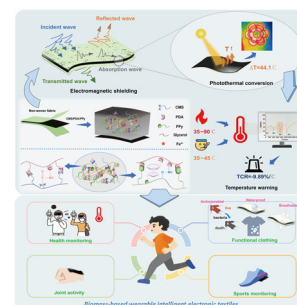
Kun-Chieh Chien, Mehmet Kepenekci, Andrew Tunell and Chih-Hao Chang*



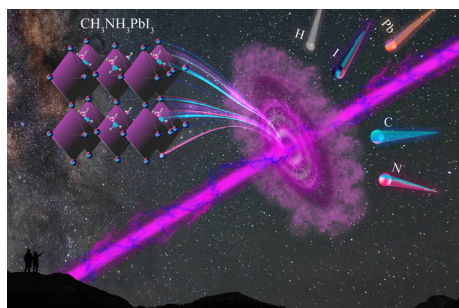
1808

A biomass-derived multifunctional conductive coating with outstanding electromagnetic shielding and photothermal conversion properties for integrated wearable intelligent textiles and skin bioelectronics

Xugang Dang,* Yufei Fei, Xinhua Liu, Xuechuan Wang and Haijun Wang*



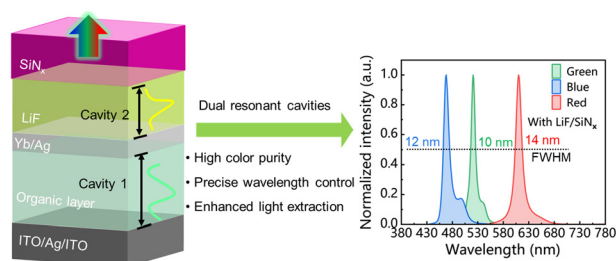
1826



Pioneering non-thermal plasma as a defect passivator: a new Frontier in ambient metal halide perovskite synthesis

Milad Mahiny,* Hossein Lotfi, Maryam Beigmohammadi, Mehdi Pooriraj, Maryam Heydari, Alireza Shirzad, Hamidreza Mahfouzi, Mohammad Khaja Nazeeruddin,* Abd. Rashid Bin Mohd Yusoff* and Hossein Movla*

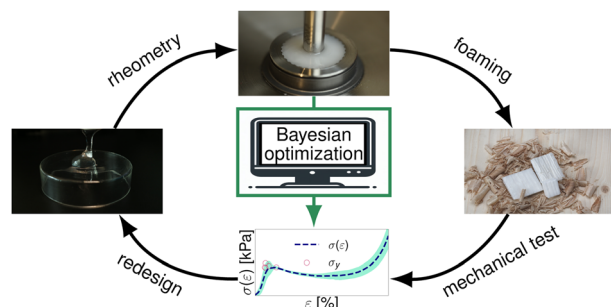
1845



Narrowband emission and enhanced stability in top-emitting OLEDs with dual resonant cavities

Wei He, Qi Sun, Zi-Yi Jin, Hao-Feng Zheng, Shuang-Qiao Sun, Jun-Gui Zhou, Shao-Cong Hou, Yue-Min Xie,* Feiyu Kang, Guodan Wei* and Man-Keung Fung*

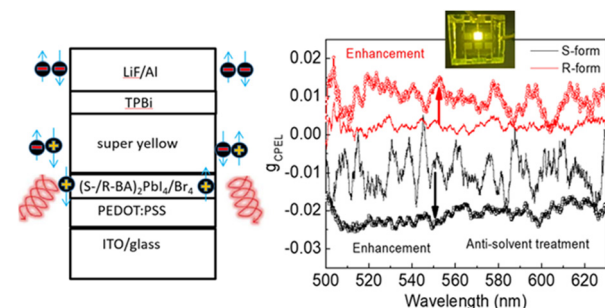
1855



Accelerated design of solid bio-based foams for plastics substitutes

Isaac Y. Miranda-Valdez,* Tero Mäkinen, Sebastian Coffeng, Axel Päiväsalo, Luisa Jannuzzi, Leevi Viitanen, Juha Koivisto and Mikko J. Alava

1863



Solution-processed spin organic light-emitting diodes based on antisolvent-treated 2D chiral perovskites with strong spin-dependent carrier transport

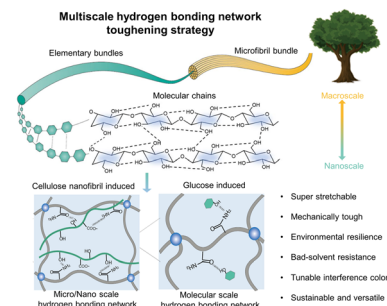
Lan-Sheng Yang,* Chun-Yao Huang, Chin-An Hsu, Sih-Tong Lin, Yun-Shan Hsu, Chia-Hsiang Chuang, Pei-Hsuan Lo and Yu-Chiang Chao*



1878

Toughening hydrogels through a multiscale hydrogen bonding network enabled by saccharides for a bio-machine interface

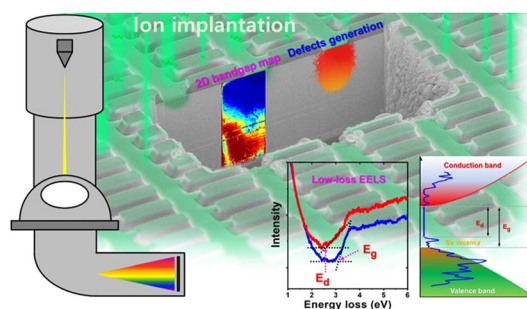
Yuhang Ye, Xun Niu, Kelvin Zheng, Zhangmin Wan, Wucheng Zhang, Qi Hua, Jiaying Zhu, Zhe Qiu, Siheng Wang, He Liu, Scott Rennecker, Orlando Rojas and Feng Jiang*



1891

A streamlined algorithm for two-dimensional bandgaps and defect-state energy variations in InGaN-based micro-LEDs

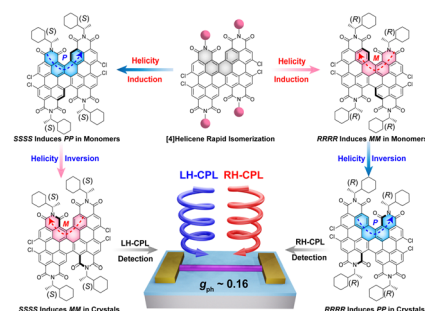
Dong-Su Ko,* Sihyung Lee, Jinjoo Park, Soohwan Sul, Changhoon Jung, Dong-Jin Yun, Mi Kyung Kim, Jaewoo Lee, Jun Hee Choi, Seong Yong Park, Munbo Shim, Won-Joon Son and Se Yun Kim*



1903

Reversal of chirality in solutions and aggregates of chiral tetrachlorinated diperylene diimides towards efficient circularly polarized light detection

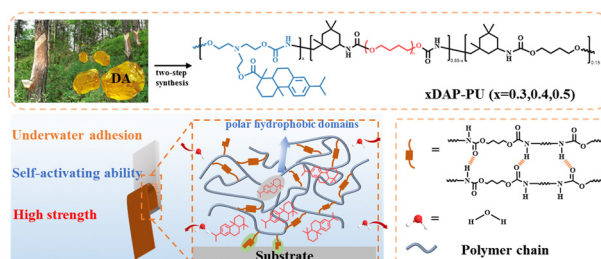
Ke Gao, Sang Hyuk Lee, Wenkai Zhao, Jaeyong Ahn, Tae Woo Kim, Zhenping Li, Huagui Zhuo, Zhiwei Wang, Xinglong Zheng, Yang Yan, Gang Chang, Wei Ma, Mingming Zhang, Guankui Long,* Joon Hak Oh* and Xiaobo Shang*



1913

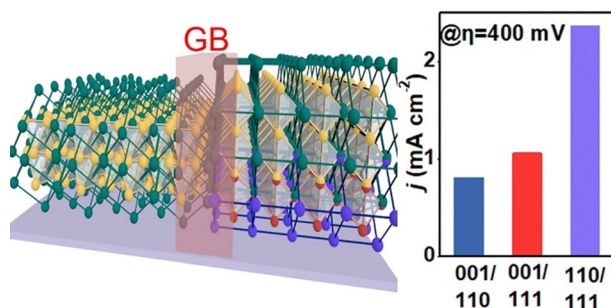
High strength, self-activating ability and fast adhesion of polyurethane adhesives based on rosin structure in different environments

Rui Yang, Li Tan, Zheng Pan, Linfeng Tian, Tianchen Zhang, Baozheng Zhao, Fei Song,* Yonghong Zhou and Meng Zhang*



COMMUNICATIONS

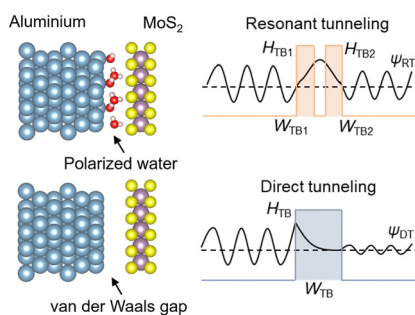
1922



Vector substrate design for grain boundary engineering: boosting oxygen evolution reaction performance in LaNiO_3

Huan Liu, Yue Han, Jinrui Guo, Wenqi Gao, Jiaqing Wang, Bin He,* Zhihong Wang* and Weiming Lü*

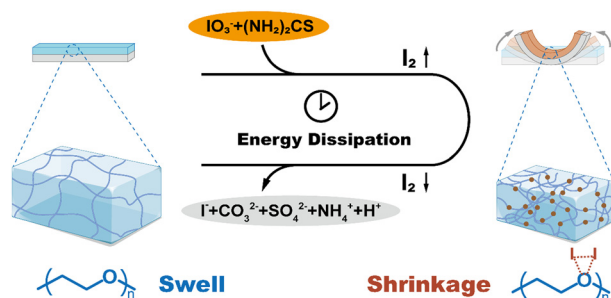
1929



Interfacial chemistry at solid-liquid van der Waals heterojunctions enabling sub-5 nm Ohmic contacts for monolayer semiconductors

Dexing Liu, Shengdong Zhang and Min Zhang*

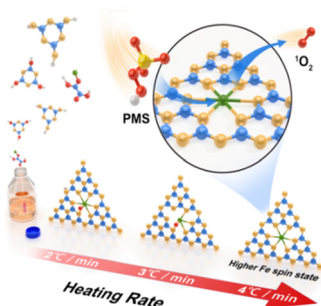
1938



An iodine-driven muscle-mimicking self-resetting bilayer hydrogel actuator

Kangle Guo, Hao Sun, Mengmeng Nan, Tiedong Sun,* Guangtong Wang* and Shaoqin Liu*

1944



Precise manipulation of iron spin states in single-atom catalytic membranes for singlet oxygen selective production

Na Lu, Yanle Li, Jianqiang Wang, Guiliang Li, Guowei Li, Fu Liu* and Chuyang Y. Tang

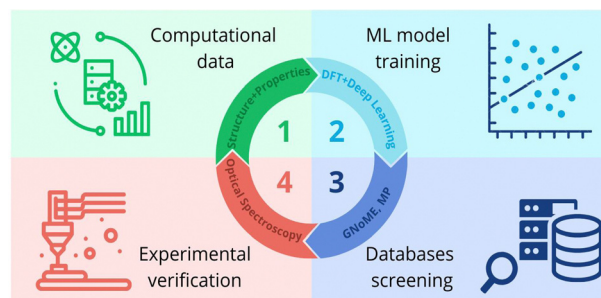


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1953

Artificial intelligence guided search for van der Waals materials with high optical anisotropy

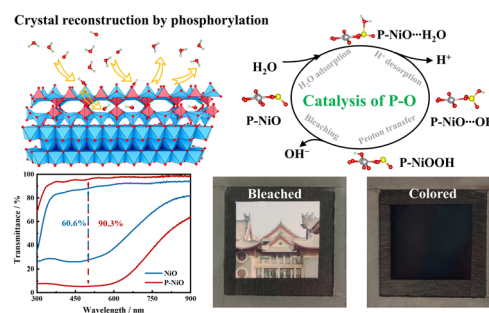
Liudmila A. Bereznikova, Ivan A. Kruglov,*
Georgy A. Ermolaev, Ivan Trofimov, Congwei Xie,
Arslan Mazitov, Gleb Tselikov, Anton Minnekhanov,
Alexey P. Tsapenko, Maxim Povolotsky,
Davit A. Ghazaryan, Aleksey V. Arsenin,
Valentyn S. Volkov* and Kostya S. Novoselov*



1962

Crystal reconstructed cubic nickel oxide with energetic reactive interfaces for exceptional electrochromic smart windows

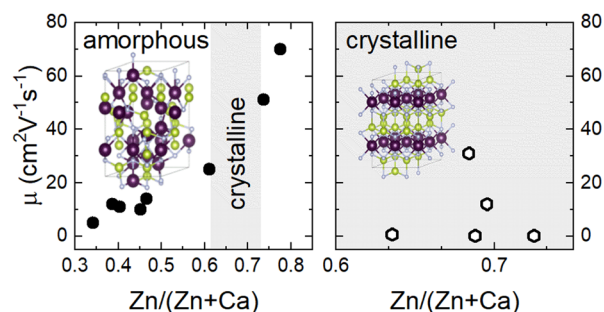
Chengyu Hu, Xiaodan Guo, Yi Gao, Ping Zhang,
Pengyang Lei, Ying Lv, Xinyi Wang, Rui Zhu* and
Guofa Cai*



1971

Amorphous nitride semiconductors with highly tunable optical and electronic properties: the benefits of disorder in Ca–Zn–N thin films

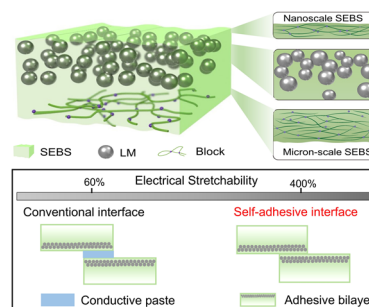
Elise Sirotti, Stefan Böhm, Gabriel Grötzner,
Maximilian Christis, Laura I. Wagner, Lukas Wolz,
Frans Munnik, Johanna Eichhorn, Martin Stutzmann,
Verena Streibel and Ian D. Sharp*



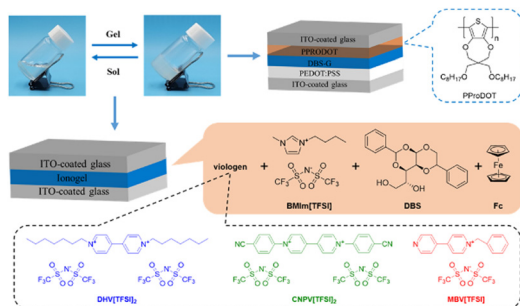
1981

Stretchable and adhesive bilayers for electrical interfacing

Yuli Song, Kai Chen, Shimeng Chen, Linyuan Zhang,
Yaqiang Wang, Kai Wu,* Canhua Xu,* Bo Li,*
Jinyu Zhang, Gang Liu and Jun Sun



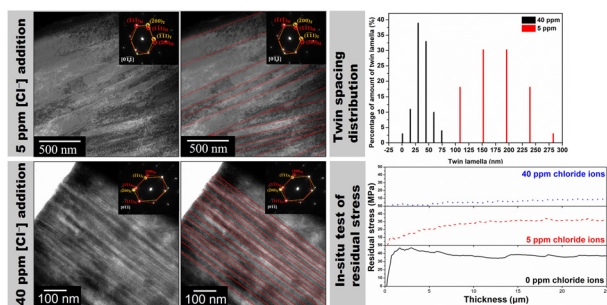
1992



Supramolecular ionogels enable highly efficient electrochromism

Kaijian Zhou, Liang Tang, Guoqiang Kuang, Jun Zhang, Zhiyong Li, Guoqiang Xing, Xueao Jiang, Zhanying Chen, Yijie Tao,* Yan Zhang* and Shiguo Zhang*

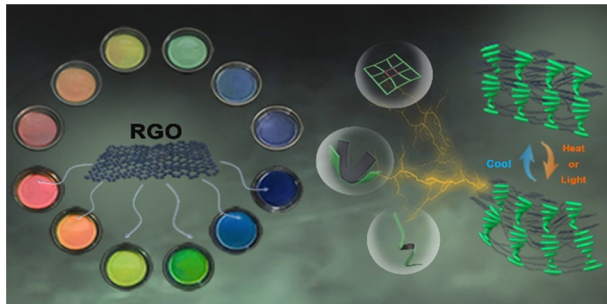
2002



Highly efficient electroplating of (220)-oriented nano-twinned copper in methanesulfonic copper baths

Hsiang-Sheng Wei, Hsu Tsou, Hao-Yu Ku, Chi-Yu Lai, Shih-Hua Chen, Chun-Cheng Lin, Shang-Tzu Liu, Hung-Yi Huang, Ming-Kun Lu, Kuan-Ling Liu and Chi-Chang Hu*

2014



A multi-responsive 3D deformable soft actuator with tunable structural color enabled by a graphene/cholesteric liquid crystal elastomer composite

Yuhan Zhang, Baohua Yuan, Yingjie Shi, Xinyu Chen, Zizheng Wang, Longxiang He, Bingxuan Wang, Jiumei Xiao, Meina Yu, Yanzi Gao, Lanying Zhang, Cheng Zou,* Ruochen Lan* and Huai Yang*

