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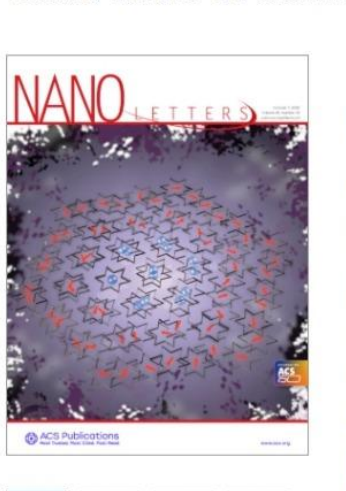

Decade 2020 Year 2026 Issue October 07, - Volume 26, Issue 39, Pages 13143 - 13711

Volume 26, Issue 39

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About the Cover

Twisted bilayer moiré Mott mosaic of 1T-TaS2 stars representing the system's charge density wave phase, hosting localized electrons that display Mott phases with antiferromagnetic magnetization (red arrows) and hybridized phases with no magnetization (blue spheres).

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Mini-Reviews

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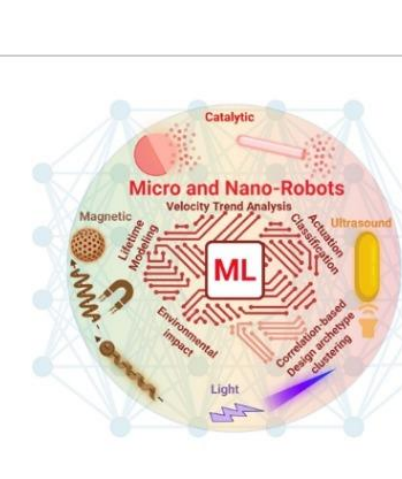
Machine Learning-Enabled Meta-Analysis of Bioengineering Micro- and Nanorobots


Catalytic
Micro and Nano-Robots
Velocity Trend Analysis
Magnetic
ML
Ultrasound
Light

Ehsan Rahimi; Mario Palacios-Corella; Mohammad Rahimi; Lucky Odirile Mohutsiwa; Josep Puigmartí-Luis; Salvador Pané

Nano Lett. (2026) 26 (39): 13143–13156.

https://doi.org/10.1021/acs.nanolett.6c02258

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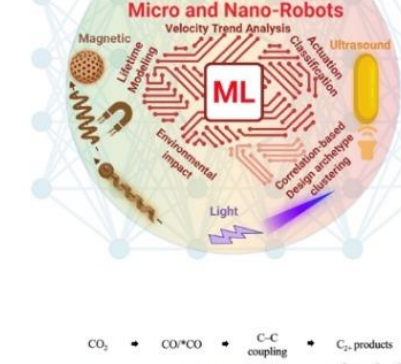
Design Strategies of Cu-Based Tandem Catalysts for Efficient Electrochemical CO$_2$ Reduction to C$_{2+}$ Products


CO2
CO*CO
C-C coupling
C2+ products

Yu-Cheng Liu; Yu-Jhih Shen; Kang-Shun Peng; Shuo-Peng Lin; Chi Kang; Chieh Chang Chien; Min-Si Lee; Shao-Hsu Hsu; Sung-Fu Hung

Nano Lett. (2026) 26 (39): 13157–13176.

https://doi.org/10.1021/acs.nanolett.6c03203

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Letters

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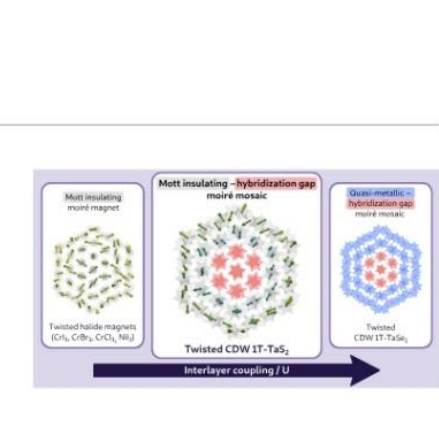
Moiré Mott Correlated Mosaics in Twisted Bilayer 1T-TaS$_2$


Mott insulating - hybridization gap moiré mosaic
Twisted CDW 1T-TaS2
Interlayer coupling / U

Ana Vera Montoto; Jose L. Lado; Adolfo O. Fumega

Nano Lett. (2026) 26 (39): 13177–13184.

https://doi.org/10.1021/acs.nanolett.6c01799

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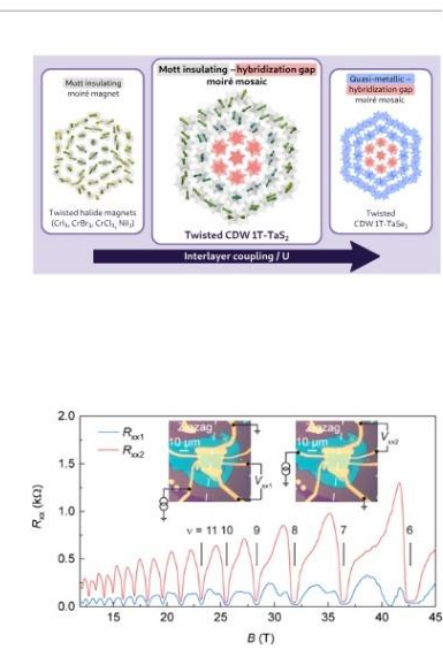
Anisotropic Quantum Hall Transport in a Black Phosphorus Two-Dimensional Hole Gas



Fangyuan Yang; Mingyan Luo; Zuocheng Zhang; Shuaifei Guo; Hao Wang; Naizhou Wang; Ke Yang; Kenji Watanabe; Takashi Taniguchi; Hua Wu; Xianhui Chen; Xin Wan; Wei Ruan; Yuanbo Zhang

Nano Lett. (2026) 26 (39): 13185–13193.

https://doi.org/10.1021/acs.nanolett.6c01845

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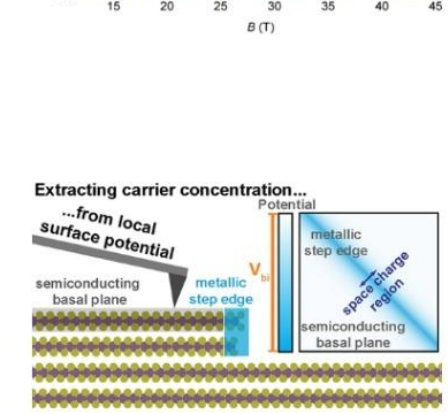
Native Defects Enable Facile Measurement of the Carrier Concentration in Two-Dimensional Semiconductors Using Kelvin Probe Force Microscopy


Extracting carrier concentration...
...from local surface potential
semiconducting basal plane
metallic step edge
Potential
space charge region

Kenneth Ortiz Chua; Devon P. Leimkuhl; Pablo Fernandez; Amar Kumbhar; Rene Lopez; Megan N. Jackson

Nano Lett. (2026) 26 (39): 13194–13202.

https://doi.org/10.1021/acs.nanolett.6c01913

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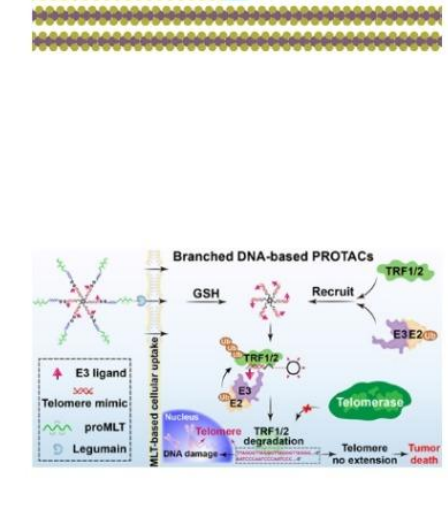
Branched DNA Nanoplatform-Based Multivalent PROTACs for Tumor Microenvironment-Responsive Degradation of Telomere-Binding Proteins in Tumor Therapy


Branched DNA-based PROTACs
GSH
Recruit
TRF1/2
E3 ligand
Telomere mimic
proMLT
Legumain
Telomerase
Telomere no extension
Tumor death

Hanyin Zhu; Xintong Li; Hong Wang; Huarui Liu; Dandan Li; Changping Yang; Baoquan Ding; Jianbing Liu

Nano Lett. (2026) 26 (39): 13203–13213.

https://doi.org/10.1021/acs.nanolett.6c02181

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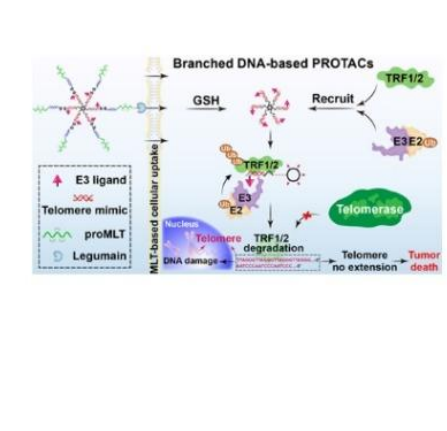
Fluorine-Assisted Stabilization of Cubic Phase Boron Nitride Polycrystalline Solids



Abhijit Biswas; Ivan Naumov; Rajib Sahu; T. A. M. Ragib Shahriar; Jakub Hrubý; Sudaice Kazibwe; Shuo Yang; Sai Krishna Narayanan; Jishnu Murukeshan; Töllner Maximilian; Shreyasi Chattopadhyay; Tanguy Terlier; Ching-Wu Chu; Lizhong Lang; Yu Zou; Vladimir P. Filonenko; Tobin Filleter; Liangzi Deng; Hanyu Zhu; Stephen Hill; Christian Kübel; Valery N. Khabashesku; Pratibha Dev; Pulickel M. Ajayan

Nano Lett. (2026) 26 (39): 13214–13222.

https://doi.org/10.1021/acs.nanolett.6c02285

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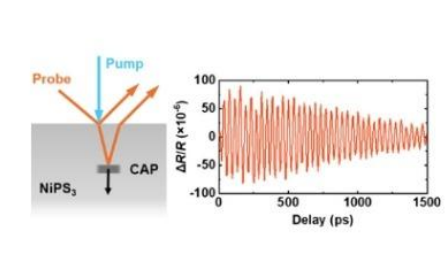
Spin-Coupled Coherent Acoustic Phonons in van der Waals Antiferromagnet NiPS$_3$



Yuanhe Li; Cong Wang; Chongtao Kong; Xin Wei; Wei Ji; Yuhang Ren; Xinhui Zhang

Nano Lett. (2026) 26 (39): 13223–13230.

https://doi.org/10.1021/acs.nanolett.6c02282

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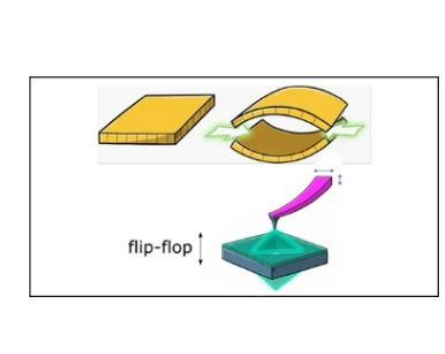
Instability-Driven Mechanically Locked States in Functional Oxide Membranes



Varun Harbola; Thomas Emil le Cozannet; Denis Alikin; Shinhee Yun; Edwin Dollekamp; Andrea Roberto Insinga; Rasmus Bjørk; Nikolas Vitaliti; Thomas Sand Jespersen; Katja Isabelle Wurster; Jochen Mannhart; Nini Pryds

Nano Lett. (2026) 26 (39): 13231–13237.

https://doi.org/10.1021/acs.nanolett.6c02253

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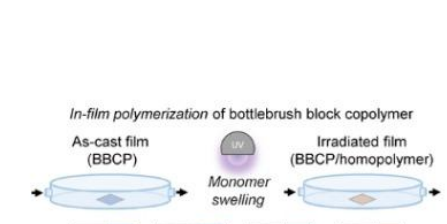
In Situ Control of Self-Assembled Morphology and Photonic Properties via In-Film Polymerization


In-film polymerization of bottlebrush block copolymer
As-cast film (BBCP)
Monomer swelling
Irradiated film (BBCP/homopolymer)
Increase homopolymer volume fraction

Minjoong Shin; Kaitlyn R. Wiegand; Lucy T. Stevens; Simona G. Fine; Cécile A. C. Chazot; Damien Guironnet; Muzhou Wang

Nano Lett. (2026) 26 (39): 13238–13245.

https://doi.org/10.1021/acs.nanolett.6c02315

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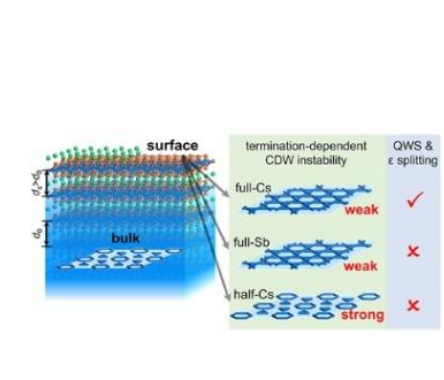
Surface Effect and Termination-Dependent Charge Order Instability in Kagome Superconductor CsV$_3$Sb$_5$


surface
bulk
termination-dependent CDW instability
QWS & splitting
full-Cs
full-Sb
half-Cs
weak
weak
strong

Yongqing Cai; Xuelei Sui; Ruoxi Wang; Desheng Wu; Zhengtai Liu; Mao Ye; Jia-Wei Mei; Zuowei Liang; Zhenyu Wang; Xianhui Chen; Chaoyu Chen; Bing Huang; Jianfeng Wang

Nano Lett. (2026) 26 (39): 13246–13254.

https://doi.org/10.1021/acs.nanolett.6c02349

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Strain Correlated Linearly Polarized Photoluminescence in WSe$_2$/WS$_2$ Moiré Superlattices

1. Tiny strain
2. Detectable signal
3. Observable DLP
DLP / %
x position
y position

Yuto Urano; Ryo Tamura; Yui Tamogami; Toshikaze Kariyado; Yasumitsu Miyata; Daichi Kozawa; Kenji Watanabe; Takashi Taniguchi; Ryo Kitaura

Nano Lett. (2026) 26 (39): 13255–13262.

https://doi.org/10.1021/acs.nanolett.6c02363

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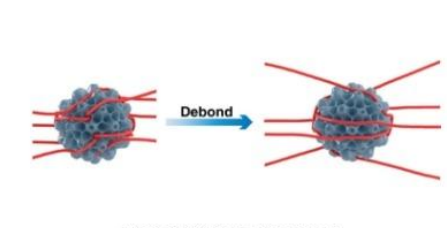
Spiky-Surfaced Mesoporous Silica Nanoparticles for Reinforced Elastomer Composites with Improved Interfacial Stability


Debond
Interfacial Sliding Entanglement

Xiaofeng Zhang; Zhongyuan Zhang; Fuxiang Li; Shiyu Han; Jiamin Li; Kang Cai; Yupu Liu; Wei Li; Dengke Shen

Nano Lett. (2026) 26 (39): 13263–13271.

https://doi.org/10.1021/acs.nanolett.6c02413

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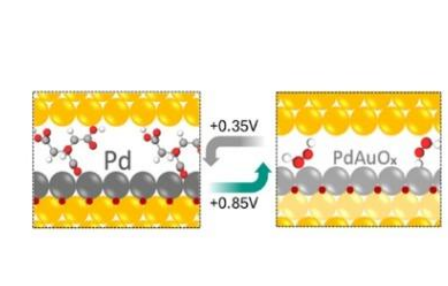
Optically Tracked Reversible Single-Atomic-Monolayer Redox in Plasmonic Nanocavities


Pd
+0.35V
+0.85V
PdAuOx

Eric S. A. Goerlitzer; Zijia Wu; Angus Crookes; Shu Hu; Rakesh Arul; Sarah May Sibug-Torres; Bart de Nijs; Reshma R. Rao; Mary P. Ryan; Angela Demetriadou; Jeremy J. Baumberg

Nano Lett. (2026) 26 (39): 13272–13278.

https://doi.org/10.1021/acs.nanolett.6c02438

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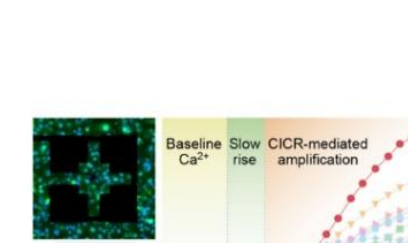
Millisecond-Resolved Electronic pH Microdomains Synchronize Calcium Amplification in Cell Clusters


Baseline Ca2+
Slow rise
CICR-mediated amplification
pHo Stimulation Onset

Xin Zhang; Thomas Estella; Jinglei Ping

Nano Lett. (2026) 26 (39): 13279–13284.

https://doi.org/10.1021/acs.nanolett.6c02566

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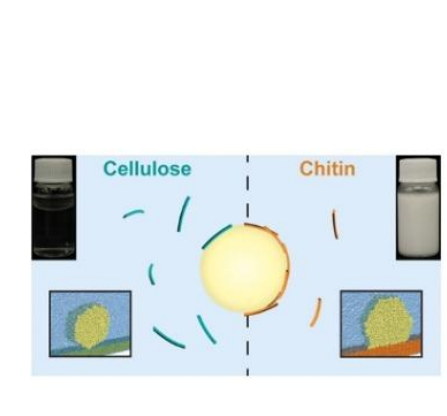
Molecular Origins of Emulsification by Polysaccharide Nanofibers: Effects of Crystal Surfaces and Chemical Structure


Cellulose
Chitin

Yuka Tomita; Tsuguyuki Saito; Jakob Wohlert; Shuji Fujisawa

Nano Lett. (2026) 26 (39): 13285–13291.

https://doi.org/10.1021/acs.nanolett.6c02570

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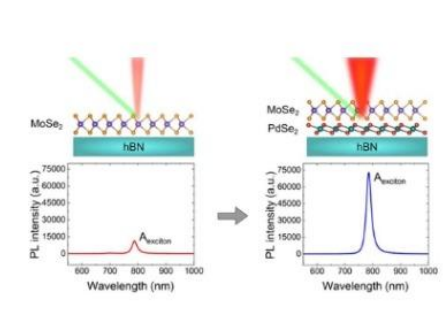
Highly Efficient Exciton Modulation in MoSe$_2$/PdSe$_2$ Heterostructures



Petr Rozhin; Muhammad Sufyan Ramzan; Emma Contin; Danae Katrisioti; Till Weickhardt; Micol Bertolotti; Nouha Loudhaief; Bing Wu; Zdeněk Sofer; Takashi Taniguchi; Kenji Watanabe; Leonardo Puppulin; Caterina Cocchi; Ioannis Paradisanos; Giancarlo Soavi; Stefano Dal Conte; Giovanni Antonio Salvatore; Domenico De Fazio

Nano Lett. (2026) 26 (39): 13292–13300.

https://doi.org/10.1021/acs.nanolett.6c02581

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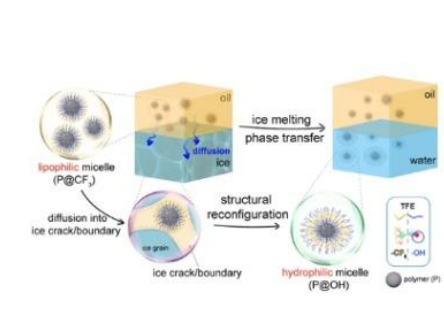
From Barrier at Water–Oil to Conduits at Ice–Oil: Ice-Crack-Enabled Chaperone Solvent Drives On-Demand Polymer Phase Transfer


ice melting phase transfer
lipophilic micelle
diffusion into ice crack/boundary
structural reconfiguration
hydrophilic micelle
water
oil

Sai Zhao; Changxiong Huang; Liulin He; Yuchen Fu; Wei Chen; Jian Jiang; Yao Liu; Xiao Cheng Zeng; Yu Chai

Nano Lett. (2026) 26 (39): 13301–13308.

https://doi.org/10.1021/acs.nanolett.6c02641

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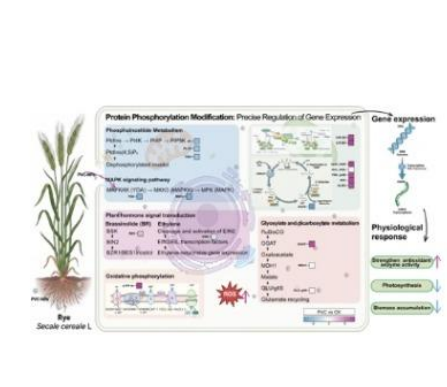
Phosphorylation-Mediated Regulatory Networks Fine-Tune Rye Responses to PVC Nanoplastic Stress: Evidence from Multiomics and Computational Biology


Protein Phosphorylation Modification: Precise Regulation of Gene Expression
Gene expression
Physiological response

Jinke Hu; Guozhang Bao; Baiming Guo; Yuchen Nan; Xiaoting Yi; Xinbo Yang; Kezhi Wang; Jinge Li

Nano Lett. (2026) 26 (39): 13309–13317.

https://doi.org/10.1021/acs.nanolett.6c02670

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Sliding Disassembly of van der Waals Heterostructures

Slide
hBN covered
exposed graphene

Jordan Pack; Karl V. Falb; Sanat Ghosh; Xuehao Wu; Keng Tou Chu; Florie Mesple; Ellis Thompson; Zhuquan Zhang; Carolin Gold; Kenji Watanabe; Takashi Taniguchi; Dmitri N. Basov; A. N. Pasupathy; Matthew Yankowitz; Cory R. Dean; Aravind Devarakonda

Nano Lett. (2026) 26 (39): 13318–13325.

https://doi.org/10.1021/acs.nanolett.6c02726

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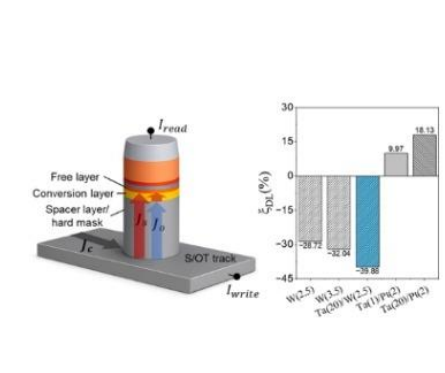
Orbital and Spin–Orbit Torque Interplay in Ta/W-Based Magnetic Tunnel Junctions with Vertical Nonlocal Switching


Free layer
Conversion layer
Spacer layer
hard mask
SOT track

Marco Biagi; Corrado C. M. Capriata; Corentin Bouchard; Subham Kintali Senapati; Ioannis Trikoilis Koll; Ricardo C. Sousa; Louis Hutin; Bernard Viala; Kevin Garello

Nano Lett. (2026) 26 (39): 13326–13334.

https://doi.org/10.1021/acs.nanolett.6c02672

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Bis(phosphoramidate diester)-Based Ionizable Lipids for Highly Efficient Lung-Selective mRNA Delivery via Intercellular Transport

Huayu Liu; Bowen Yang; Shuye Chen; Yikun Li; Ying Zhang; Yifei Huang; Jiaqi Xing; Hao Liu; Sida Jiang; Ran Mo

Nano Lett. (2026) 26 (39): 13335–13347.

https://doi.org/10.1021/acs.nanolett.6c02802

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Narrow-Line-Width Room-Temperature Single-Photon Emission from Multinary Copper-Based Quantum Dots

Lei Hou; Jian Huang; Haoran Chen; Chenghui Xia; Yi Liu

Nano Lett. (2026) 26 (39): 13348–13356.

https://doi.org/10.1021/acs.nanolett.6c03011

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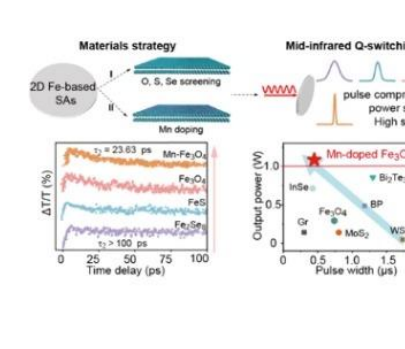
Thermodynamic Optimization of Atomically Thin Iron-Based Compounds for Mid-Infrared Laser Power Scaling



Yunrou Wu; Weitao Liu; Tiantian Yun; Taifeng Liu; Feng Feng; Zhansheng Gao; Ruoping Li; Xi Wang; Tao Jiang; Ke Chen

Nano Lett. (2026) 26 (39): 13357–13364.

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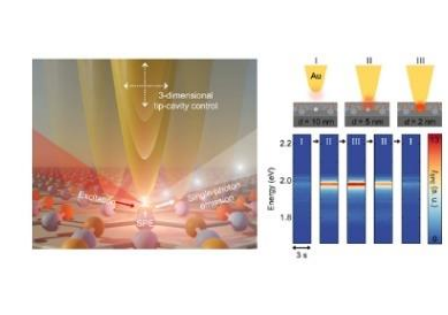
Adaptive Cavity Control of Single-Photon Emission from Hexagonal Boron Nitride



Hyeongwoo Lee; Taeyoung Moon; Hyeonmin Oh; Kijeong Park; Huitae Joo; Milos Toth; Igor Aharonovich; Kyoung-Duck Park

Nano Lett. (2026) 26 (39): 13365–13371.

https://doi.org/10.1021/acs.nanolett.6c03060

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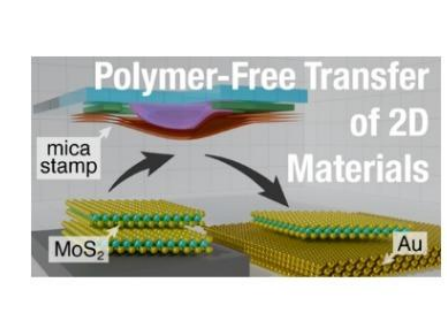
Polymer-Free Assembly of Unencapsulated van der Waals Heterostructure Devices


Polymer-Free Transfer of 2D Materials
mica stamp
MoS2
Au

Han Xuan Wong; Junjie Yu; Yuxi Yan; Adam Cronin; Felix R. Fischer

Nano Lett. (2026) 26 (39): 13372–13377.

https://doi.org/10.1021/acs.nanolett.6c03183

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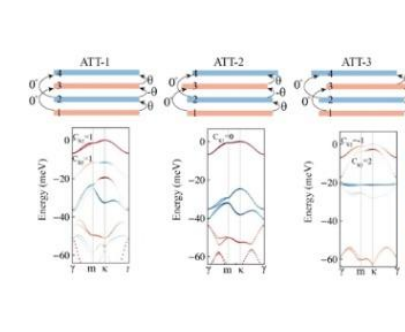
Switching Chern Number by Sliding and Gating in Alternately Twisted Tetralayer MoTe$_2$



Xiao-Wei Zhang; Kaijie Yang; Xiaodong Xu; Ting Cao; Di Xiao

Nano Lett. (2026) 26 (39): 13378–13384.

https://doi.org/10.1021/acs.nanolett.6c03169

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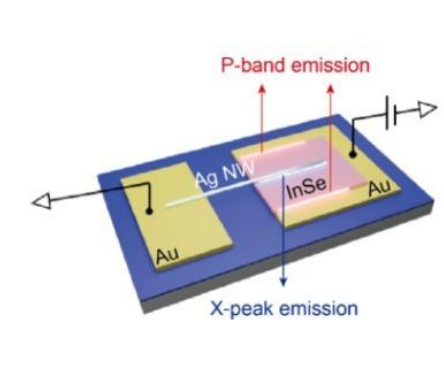
Highly Polarized Narrow Linewidth Near-Infrared Emission from InSe-Based Light-Emitting Diodes


P-band emission
InSe
Au
X-peak emission

Yu Zhang; Tongxin Guo; Tao Wang; Sinong Liu; Haoyun Huang; Ziyi Ding; Qiangian Guo; Lan Zhang; Wenfei Li; Guangpeng Zhu; Wei Du

Nano Lett. (2026) 26 (39): 13385–13391.

https://doi.org/10.1021/acs.nanolett.6c03186

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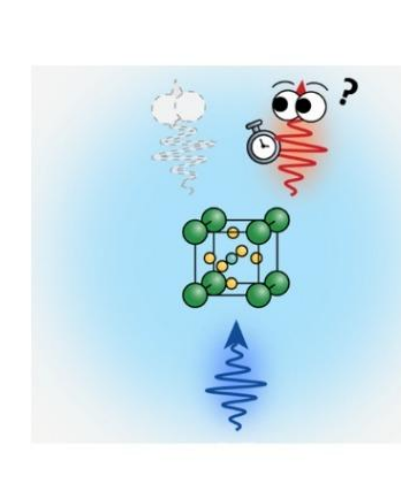
Photon Statistics from Yb^{3+}-Doped CsPbCl$_3$ Are Inconsistent with Quantum Cutting



Vincent R.M. Benning; Faris Horani; Daniel R. Gamelin; Freddy T. Rabouw

Nano Lett. (2026) 26 (39): 13392–13398.

https://doi.org/10.1021/acs.nanolett.6c03196

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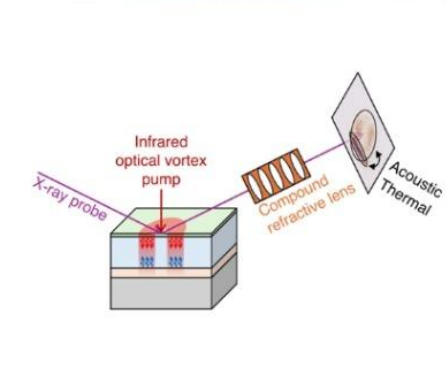
Nanolayer-Confined Strain Waves in Femtosecond-Optical-Vortex-Excited Multiferroic BiFeO$_3$


X-ray probe
Infrared optical vortex pump
Acoustic Thermal

Sung Yun Lee; Seong Gook Kim; Heung-Sik Park; Jihun Kim; Jungchan Choi; Sinwoo Kim; Eunyoung Park; Seung-Phil Heo; Seongbin Oh; Junha Hwang; Myong-jin Kim; Minhyun Kim; Do Geun Jang; Hyunjung Kim; Daewoong Nam; Sangsoo Kim; Hyon Chol Kang; Chan-Ho Yang; Changyong Song

Nano Lett. (2026) 26 (39): 13399–13406.

https://doi.org/10.1021/acs.nanolett.6c03252

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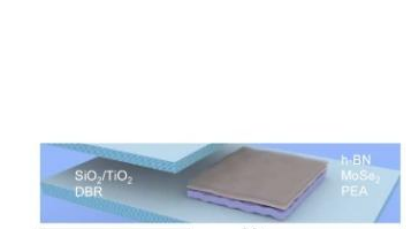
Coherence Enhancement of Interlayer Excitons Via 3D Trapping



Dong Yang; Qiuyu Shang; Xuran Dai; Zisheng Gong; Yuzhe Yang; Shihao Ru; Jiaxin Zhao; Jesús Zú Ñiga-Pérez; Dehui Li; Weibo Gao

Nano Lett. (2026) 26 (39): 13407–13414.

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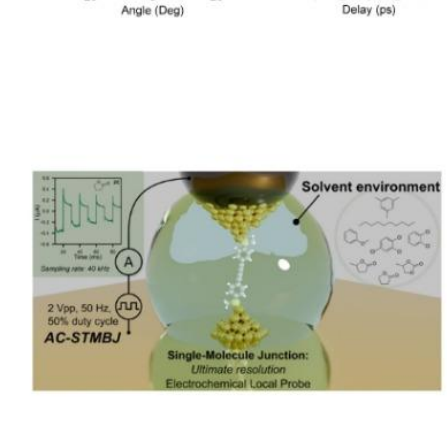
Probing Solvent Dynamics at the Single-Molecule Limit


Solvent environment
AC-STMBJ
Single-Molecule Junction
Electrochemical Local Probe

Roberto Listo; James M. F. Morris; Amit Sil; Xiaohang Qiao; R. Tom Abram; Chanyuan Huo; Jonathan S. Ward; Walther Schwarzacher; Piero Malcovati; Marco Vacca; Mariagrazia Graziano; Giovanna Turvani; Richard J. Nichols; Andrea Vezzoli

Nano Lett. (2026) 26 (39): 13415–13422.

https://doi.org/10.1021/acs.nanolett.6c03272

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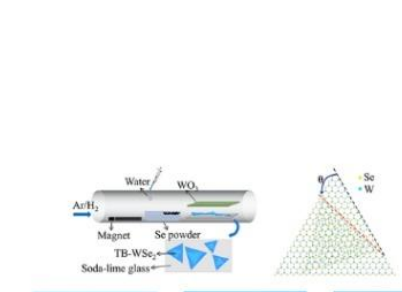
Controlled Synthesis of Twisted Bilayer WSe$_2$ Via Hydrogen Pulse and Water-Assisted CVD



Shijie Hao; Xiaoming Zheng; Tongfei Zhang; Yuehua Wei; Congbing Tan; Guolin Hao

Nano Lett. (2026) 26 (39): 13423–13429.

https://doi.org/10.1021/acs.nanolett.6c03309

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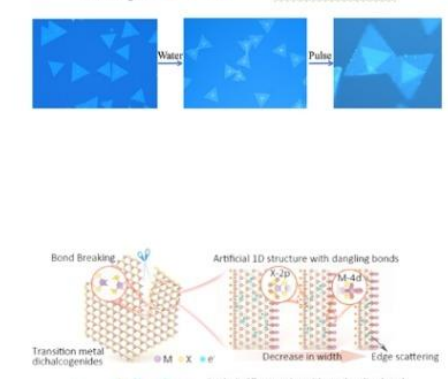
Gate-Switchable Nonlinear Photoresponse in a Dangling-Bond-Free Nanowire Photodetector



Meimei Jiang; Rui Feng; Zhi Zhang; Nannan Zhang; Zhentao Zhu; Wenjie Zhao; Zejun Li

Nano Lett. (2026) 26 (39): 13430–13441.

https://doi.org/10.1021/acs.nanolett.6c03308

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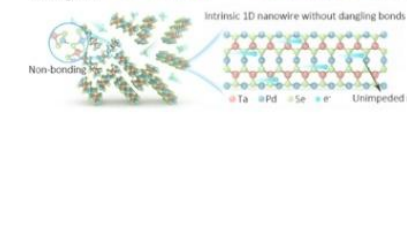
Synthesis of CsPbI$_3$ Rhombic Dodecahedra Using Facet-Selective Bidentate Ammonium Ligands



Nicholas Fayate; Emma Daggett; Zihang Liu; Sarah M. Kolp; Run Long; Oleg V. Prezhdo; Jonathan D. Hood; Christina W. Li

Nano Lett. (2026) 26 (39): 13442–13449.

https://doi.org/10.1021/acs.nanolett.6c03385

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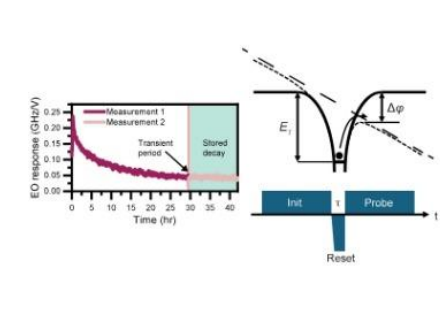
Hysteresis and Trap Emission in dc-Biased Integrated Lithium Niobate Electro-optic Modulators



Matthew Yeh; C. J. Xin; Donald Witt; David R. Barton, III; Evelyn L. Hu; Marko Lončar

Nano Lett. (2026) 26 (39): 13450–13456.

https://doi.org/10.1021/acs.nanolett.6c03406

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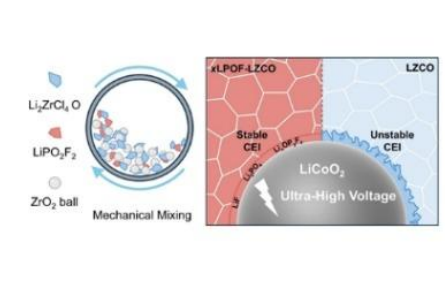
Sacrificial Additives Stabilize Interfaces for Durable 5 V LiCoO$_2$ Operation in Zr-Based Halide Solid-State Batteries


Li2ZrCl6
LiPO2F2
ZrO2 ball
Mechanical Mixing
LiCoO2
Ultra-High Voltage

Yanfeng Zhang; Jinhua Liu; Ao Zeng; Enyue Zhao; Xiaoling Xiao

Nano Lett. (2026) 26 (39): 13457–13464.

https://doi.org/10.1021/acs.nanolett.6c03433

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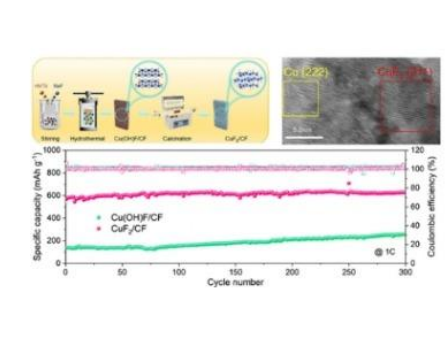
In-Situ Synthesis of CuF$_2$ Integrated Cathodes for High-Performance Lithium Metal Batteries with Superb Stability



Mingxin Shi; Xianggang Zhou; Yingqi Li; Xin Guan; Ruiqi Yao; Xingyou Lang; Yangguang Li; Qing Jiang; Yonghui Wang

Nano Lett. (2026) 26 (39): 13465–13472.

https://doi.org/10.1021/acs.nanolett.6c03473

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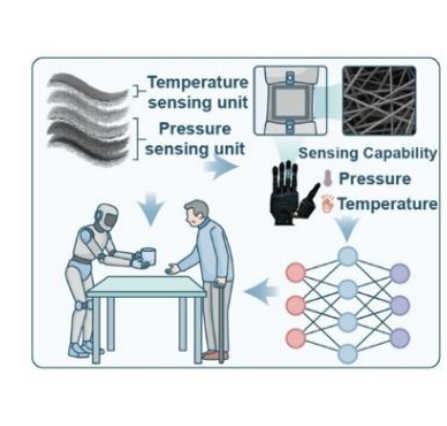
Deep Learning-Enhanced All-Nanofiber Sensors for Pressure–Temperature Sensing and Stimulus Discrimination


Temperature sensing unit
Pressure sensing unit
Sensing Capability
Pressure
Temperature

Yanyu Zhao; Yining Zhang; Xinyi Liu; Wei Dai; Long Yang; Shuyan Liu; Hui Fan; Pengfei Zhao; Su-Ting Han; Ye Zhou

Nano Lett. (2026) 26 (39): 13473–13482.

https://doi.org/10.1021/acs.nanolett.6c03538

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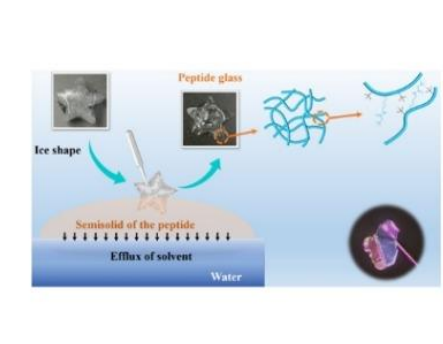
Peptide Glasses with Room Temperature Shaping and Autonomous Self-Healing Capabilities


Peptide glass
Effect of solvent

Chunmei Zhang; Mingguang Xing; Yunlong Dong; Lele He; Yan Huang; Zunmin Zhang; Hai Cao

Nano Lett. (2026) 26 (39): 13483–13490.

https://doi.org/10.1021/acs.nanolett.6c03551

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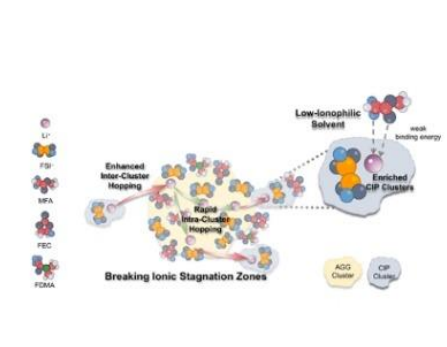
Breaking Ionic Stagnation Zones for Ultrafast Charging in Low-Concentration Lithium-Ion Batteries


Breaking Ionic Stagnation Zones

Rui Cao; Haipeng You; Zhanxuan Zhang; Yun Ji; Xinyu Mai; Yihui Liu; Long Chen; Chunzhong Li

Nano Lett. (2026) 26 (39): 13491–13500.

https://doi.org/10.1021/acs.nanolett.6c03561

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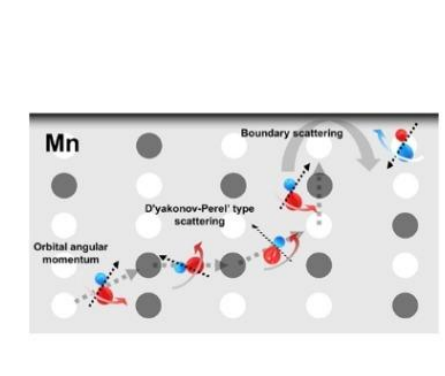
Electron Scattering Effect on Orbital Transport in Highly Disordered Nanocrystalline Mn


Mn
Boundary scattering
D'yakonov-Perel' type scattering
Orbital angular momentum

Kyung-Hun Ko; Daegeun Jo; Sumin Kim; Peter M. Oppeneer; Hyun-Woo Lee; Gyung-Min Choi

Nano Lett. (2026) 26 (39): 13501–13510.

https://doi.org/10.1021/acs.nanolett.6c03559

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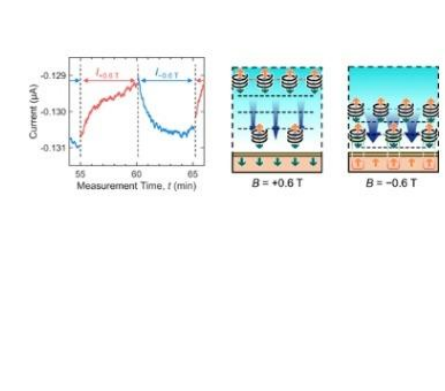
Near-Electrode Diffusion Dynamics Govern Chirality-Induced Spin Selectivity in an Electrochemical Cell



Weiguang Gao; Tatsuya Yamamoto; Shiori Yoshioka; Jieyi Chen; Shoya Sakamoto; Sachiko Kamisaka; Mizuki Matsuzaka; Motomi Aoki; Takayuki Nozaki; Shinji Miwa

Nano Lett. (2026) 26 (39): 13511–13516.

https://doi.org/10.1021/acs.nanolett.6c03613

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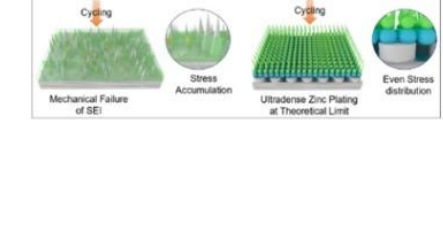
Near-Theoretical-Density Zinc Plating Enabled by an Ordered Janus Interphase for High-Energy Zinc Pouch Cells



Fengxue Duan; Junjie Ba; Mengqi Wu; Mingfeng Wei; Junpeng Li; Silong Cui; Ruqian Lian; Xiuxiu Yin; Biswarup Chakraborty; Kangning Zhao; Yingjin Wei; Yizhan Wang

Nano Lett. (2026) 26 (39): 13517–13526.

https://doi.org/10.1021/acs.nanolett.6c03595

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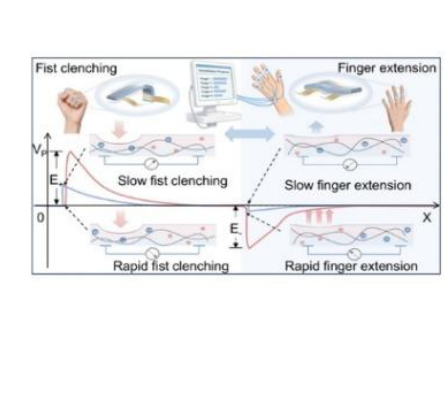
Relaxation Piezoionic Hydrogel for Self-Powered, Self-Decoupled Monitoring of Finger Rehabilitation


Fist clenching
Finger extension
Slow fist clenching
Slow finger extension
Rapid fist clenching
Rapid finger extension

Yuxiu Yao; Chenhui Bai; Yilong Yang; Xinru Yang; Zhichao Gao; Yuanli Zhao; Xiaojing Cui; Hulin Zhang

Nano Lett. (2026) 26 (39): 13527–13535.

https://doi.org/10.1021/acs.nanolett.6c03647

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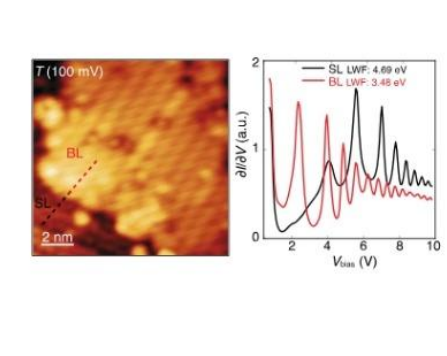
Synthesis of Ultralow-Work-Function Bilayer Borophene on Iridium



Hui Li; Albert Tsui; Levi C. Felix; Favian Sun; Cataldo Lamarca; Boris I. Yakobson; Mark C. Hersam

Nano Lett. (2026) 26 (39): 13536–13542.

https://doi.org/10.1021/acs.nanolett.6c03673

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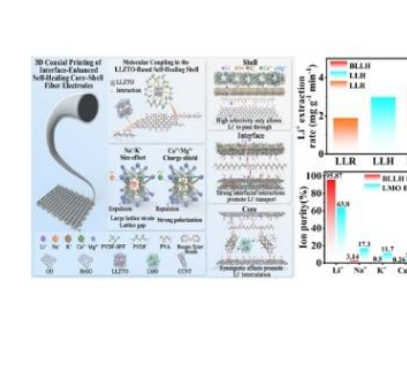
Self-Healing Core–Shell Interfaces Enabling Adaptive Solid-State Ion Transport Kinetics toward Highly Efficient Seawater Lithium Extraction



Shixin Liu; Rui Wang; Feng Zou; Bo Peng; Zhihong Yao; Runwei Mo

Nano Lett. (2026) 26 (39): 13543–13551.

https://doi.org/10.1021/acs.nanolett.6c03678

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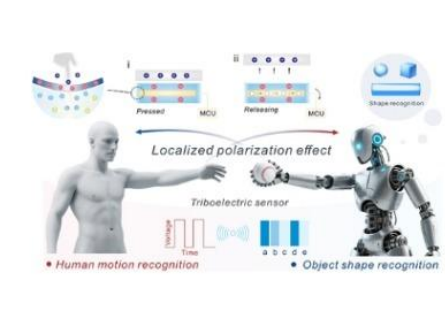
Triboelectric Topological Ion Effect for Highly Sensitive Tactile Sensing


Localized polarization effect
Triboelectric sensor
Human motion recognition
Object shape recognition

Jiamin Zhao; Bin Luo; Tao Liu; Chenchen Cai; Xiangjiang Meng; Song Zhang; Kang Yu; Qiguan Luo; Yayu Bai; Hainong Song; Shuangxi Nie

Nano Lett. (2026) 26 (39): 13552–13562.

https://doi.org/10.1021/acs.nanolett.6c03710

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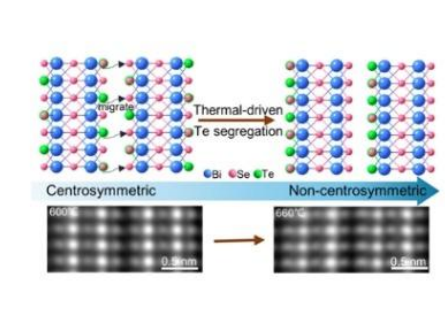
Atomic-Scale Visualization of Thermally Driven Hidden Symmetry Evolution in Layered Bi–Se–Te Compounds


Thermal-driven Te segregation
Centrosymmetric
Non-centrosymmetric

Xiaobin Zhao; Lishan Liang; Zihao Huang; Yunfan Zhang; Yaning Zhang; Canhuan Xie; Ruixin Liao; Fei Tian; Yong Sun; Chengxin Wang

Nano Lett. (2026) 26 (39): 13563–13571.

https://doi.org/10.1021/acs.nanolett.6c03726

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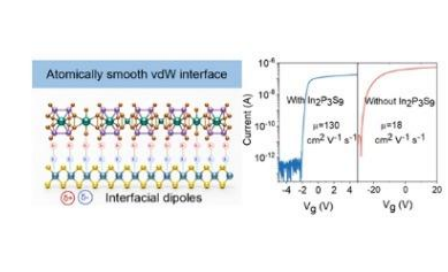
High-Mobility MoS$_2$ Transistors Enabled by In$_2$P$_3$S$_9$ Functional Dielectric Engineering and Interfacial Dipole Modulation


Atomically smooth vdW interface
Interfacial dipoles

Shuo Liu; Yongqi Liu; Xinyun Zhou; Wanglong Wu; Binkun Wang; Mianzeng Zhong

Nano Lett. (2026) 26 (39): 13572–13579.

https://doi.org/10.1021/acs.nanolett.6c03755

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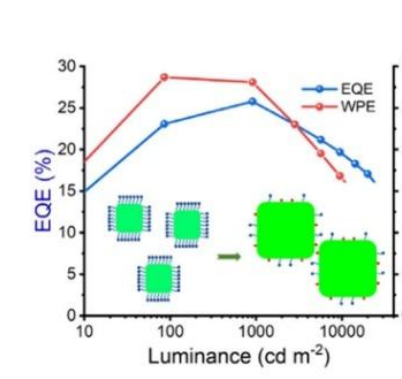
Weakly Confined Perovskite Nanocrystal Films for Energy-Efficient Electroluminescence Devices



Zhibin Wang; Ximing Wu; Song Zheng; Shuyin Wang; Yongle Hong; Lingwei Zeng; Ruidan Zhang; Daojin Chen

Nano Lett. (2026) 26 (39): 13580–13589.

https://doi.org/10.1021/acs.nanolett.6c03763

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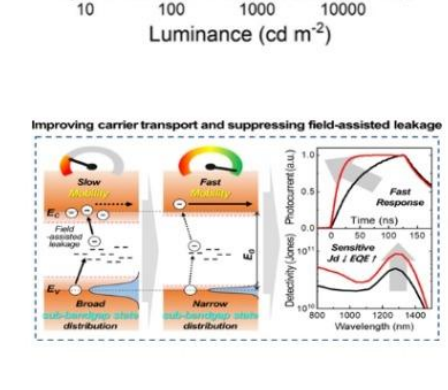
Overcoming Field-Assisted Leakage and Mobility Deficits in InAs Colloidal Quantum Dot SWIR Photodetectors


Improving carrier transport and suppressing field-assisted leakage
Fast Response

Daekwon Shin; Stefan Zeiske; Jugyoung Kim; Ubaid H. Kaziaga; Hyoin Kim; Hyeonjun Jeong; Jung Hoon Song; Bin Chen; Edward H. Sargent; Sohee Jeong

Nano Lett. (2026) 26 (39): 13590–13599.

https://doi.org/10.1021/acs.nanolett.6c03767

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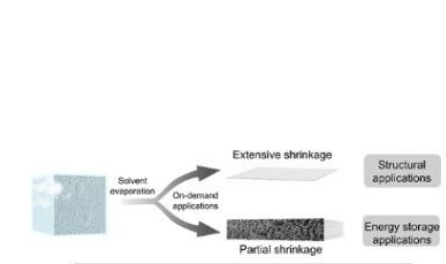
Tailoring Wood Shrinkage via Solvent-Driven Interfacial Engineering for On-Demand Applications



Min Li; Daotong Zhang; Qiang Yang; Chaozheng Liu; Kai Yang; Zhao Li; Feng Jiang; Weimin Chen; Xiaoyan Zhou

Nano Lett. (2026) 26 (39): 13600–13608.

https://doi.org/10.1021/acs.nanolett.6c03759

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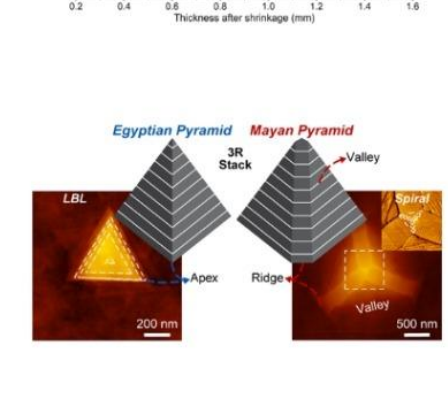
"Egyptian" and "Mayan" Molybdenum Disulfide Pyramids


Egyptian Pyramid
Mayan Pyramid
3R Stack
Valley
Apex
Ridge

Haowen Luo; Chi Shing Tsang; Ka Ho Leung; Ping Man; Xuanmei Ye; Xueyan Cui; Wenqian Shen; Quoc Huy Thi; Jiong Zhao; Thuc Hue Ly

Nano Lett. (2026) 26 (39): 13609–13617.

https://doi.org/10.1021/acs.nanolett.6c03801

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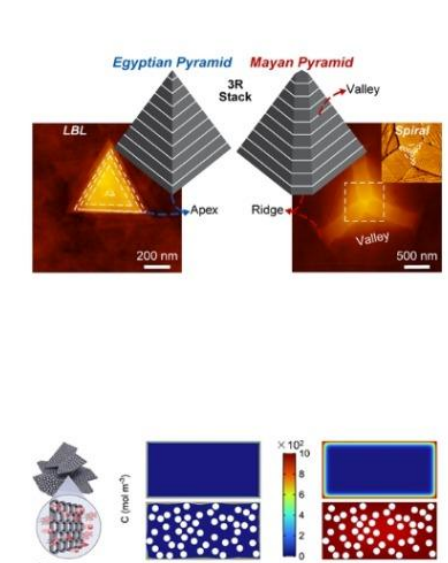
Coupling Porous Architecture and Fe–F Coordination Engineering Enables Highly Reversible FeF$_3$ Cathode Materials



Jiali Liu; Huiyi Zhou; Wande Song; Boqian Yi; Shuoqing Zhao; Yi Zeng; Qingyu Yan; Fei Du

Nano Lett. (2026) 26 (39): 13618–13626.

https://doi.org/10.1021/acs.nanolett.6c03811

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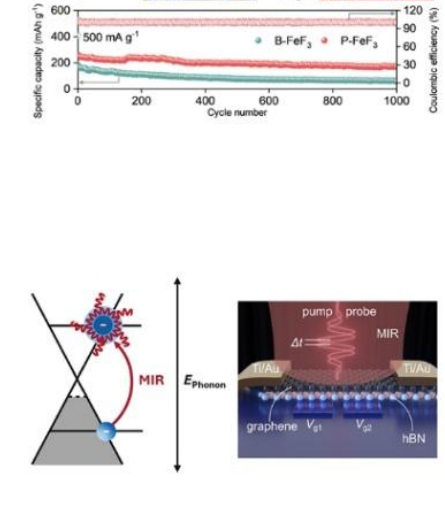
Ultrafast Laser-Induced Photothermoelectric Currents in Graphene Junctions in the Mid-Infrared



Nina Pettinger; Michel Panhans; Johannes Schmuck; Sebastian Loy; Xiaoyi Zhou; Chengye Dong; J. A. Robinson; Sergey Zherebtsov; Christoph Kastl; Frank Ortmann; Alexander W. Holleitner

Nano Lett. (2026) 26 (39): 13627–13634.

https://doi.org/10.1021/acs.nanolett.6c03809

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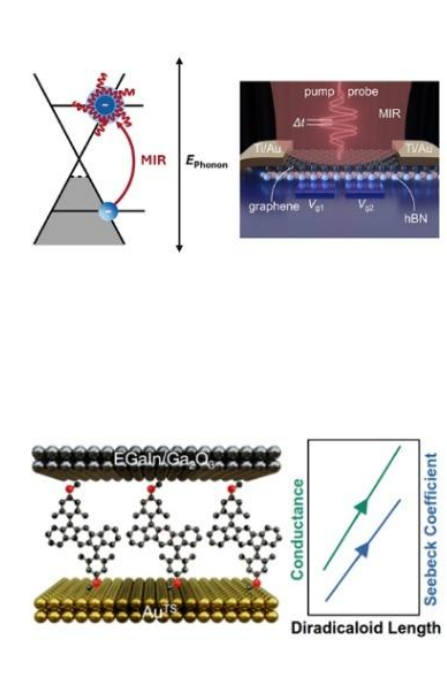
Scaling Diradicaloid Thermoelectricity


Conductance
Seebeck Coefficient
Diradicaloid Length

Lewis Hamilton; Jiung Jang; Amit Sil; Peng He; Abdalghani H. S. Daaoub; Yongjun Choi; Sara Sangtarash; Andrea Vezzoli; Hyo Jae Yoon; Hatef Sadeghi

Nano Lett. (2026) 26 (39): 13635–13641.

https://doi.org/10.1021/acs.nanolett.6c03798

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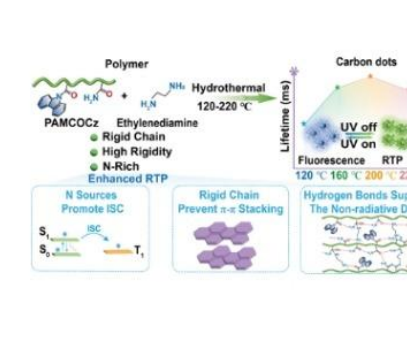
Achieving Matrix-Free Self-Protective Room-Temperature Phosphorescence from Polymer-Derived Carbon Dots for Optical Applications


Polymer
Hydrothermal
Carbon dots

Jiaying Wu; He Jiang; Shuo Wang; Shuling Liu; Zhikun Huang; Luqing Zhang; Jibiao Jin; Zheng Xie

Nano Lett. (2026) 26 (39): 13642–13648.

https://doi.org/10.1021/acs.nanolett.6c03841

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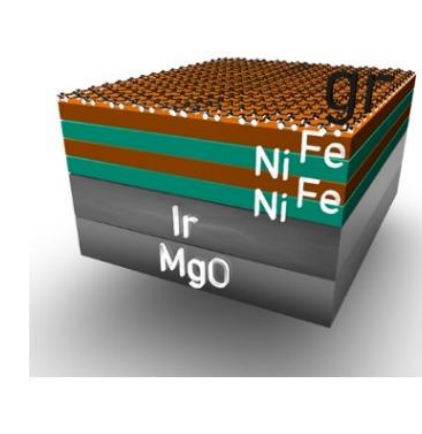
Graphene-Enhanced Magnetic Anisotropies in Fe/Ni (100) Superlattices with Monolayer Periodicity


Ni
Fe
Ni
Fe
Ir
MgO

Iban Llamas; José Luis Fernández-Cuñado; Inés García-Manuz; Paolo Perna; Sofía O. Parreiras; Miguel Ángel Valbuena; Cristina Navío; Antonio Hernando; Rodolfo Miranda

Nano Lett. (2026) 26 (39): 13649–13655.

https://doi.org/10.1021/acs.nanolett.6c03892

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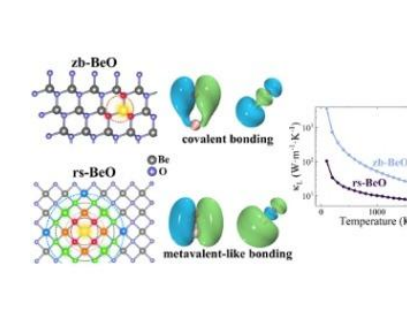
Metavalent-Like Bonding Character Drives Giant Anharmonicity and Ultralow Thermal Conductivity in Rocksalt BeO


zb-BeO
rs-BeO
covalent bonding
metavalent-like bonding

Xuejie Li; Shengying Yue; Bolin Wang; Xiaolong Yang; Turab Lookman; Jun Sun; Xiangdong Ding; Zhibin Gao

Nano Lett. (2026) 26 (39): 13656–13665.

https://doi.org/10.1021/acs.nanolett.6c03910

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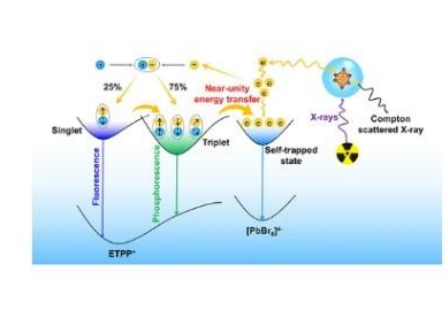
Near-Unity Energy Transfer from Triplet to Self-Trapped Excitons in Transparent Hybrid Metal Halide Glasses for High-Resolution X-ray Imaging


Near-unity energy transfer
Singlet
Triplet
Self-trapped state
X-rays
Compton scattered X-ray

Tao Liang; Kai Wang; Linyuan Lian; Ming Ai; Jibin Zhang; Xu Chen; Yanbing Han; Zhuangzhuang Ma; Mochen Jia; Ying Liu; Yongtao Tian; Xinjian Li; Zhifeng Shi

Nano Lett. (2026) 26 (39): 13666–13675.

https://doi.org/10.1021/acs.nanolett.6c03217

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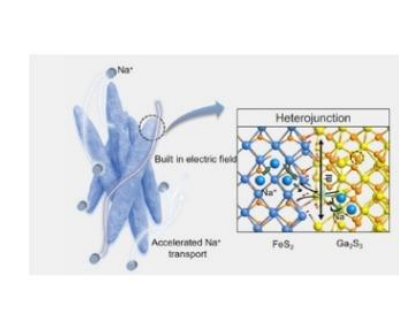
Dual-Defects Engineering and Fe–S–Ga Bridging Synergy in Secondary Battery Anode Enable Fast-Charging and Durable Performances


Heterojunction
Built in electric field
Accelerated Na+ transport

Xiaofei Huang; Tianli Han; Haohan Song; Keke Wang; Fan Bu; Xuehui Wang; Yun Shen; Jinyun Liu

Nano Lett. (2026) 26 (39): 13676–13684.

https://doi.org/10.1021/acs.nanolett.6c03949

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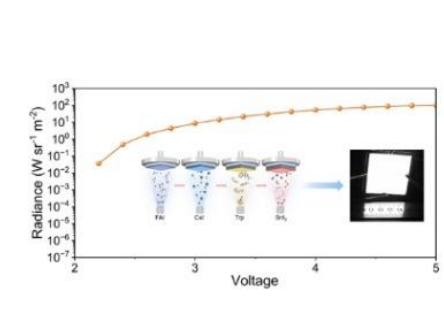
Molecular Intercalation Regulation of Solid-State Reaction Enables Thermally Evaporated FASnI$_3$ Light-Emitting Diodes



Junhao Liu; Xueli Li; Qingxun Guo; Yajing Li; Haoyu Zheng; Xiaorong Shi; Yuxuan Wei; Yutian Xu; Na Meng; Boya Hu; Mengxun Kong; Huili Ma; Xue Min; Kui Xu; Yonghua Chen

Nano Lett. (2026) 26 (39): 13685–13692.

https://doi.org/10.1021/acs.nanolett.6c04013

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Remote Coacervate Robots with Visualized Bacteria Sensing and Removal in Indwelling Catheters for Infection Prevention

Coacervate robot
Urinary catheter
Rotating magnet platform
Onsite diagnosis

Changshun Hou; Yichao Chen; Xingguang Duan

Nano Lett. (2026) 26 (39): 13693–13702.

https://doi.org/10.1021/acs.nanolett.6c04324

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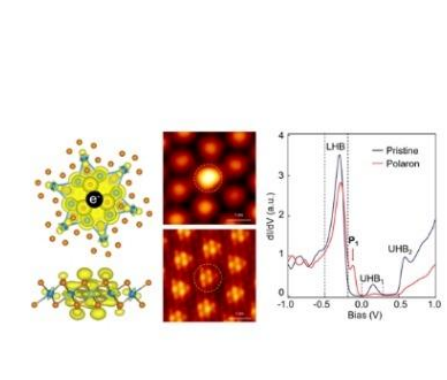
Discovery and Manipulation of a Single Polaron in a Monolayer Mott Insulator



Peng Fan; Qiuchen Yu; Ziyuan Liu; Jiayi Wang; Sihui Li; Siyu Xu; Jinbo Pan; Hui Guo; Hui Chen; Lizhi Zhang; Kai Yang; Hong-Jun Gao

Nano Lett. (2026) 26 (39): 13703–13711.

https://doi.org/10.1021/acs.nanolett.6c04363

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Nano Lett. (2026) 26 (39)

https://doi.org/10.1021/nlv026i039_2138430

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