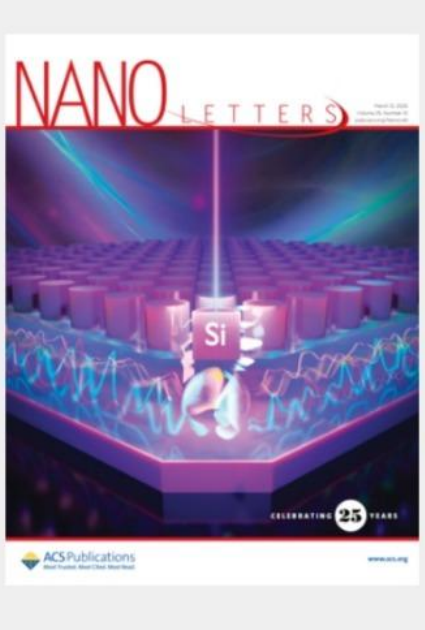

March 12, 2025
Volume 25, Issue 10
Pages 3683-4114

About the Cover:

High-quality plasmonic resonances in the deep-UV are achieved by hybridizing silicon interband plasmons with Fabry–Pérot cavity modes. This optical mode hybridization mitigates the intrinsically broad linewidths of interband plasmons, enabling high-performance UV photonic and optoelectronic devices utilizing silicon as a plasmonic material. View the article.

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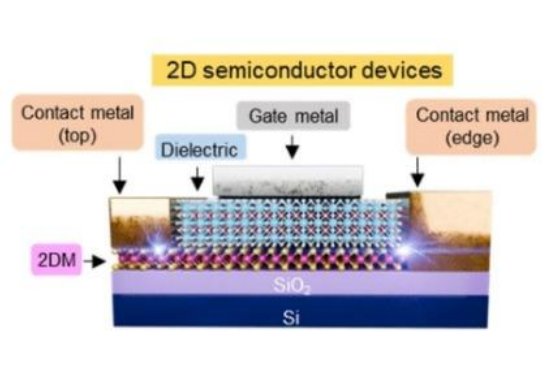
MINI-REVIEWS

Continue the Scaling of Electronic Devices with Transition Metal Dichalcogenide Semiconductors



2D semiconductor devices
Contact metal (top)
Gate metal
Contact metal (edge)
Dielectric
2DM
SiO_2
Si

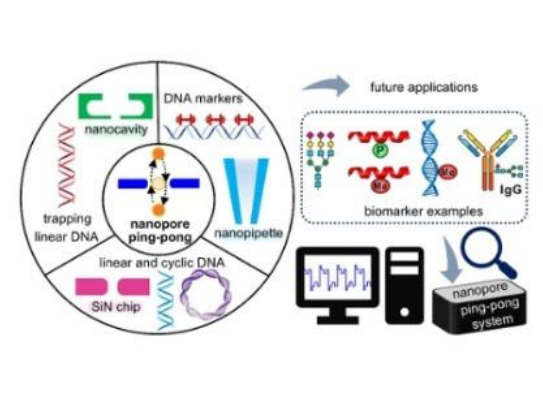
Fangyuan Zheng, Wanqing Meng*, and Lain-Jong Li*

Nano Letters 2025, 25, 10, 3683-3691 **(Mini-Review)** Open Access
Publication Date (Web): February 24, 2025

Abstract Full text PDF

ABSTRACT

Nanopore toward Genuine Single-Molecule Sensing: Molecular Ping-Pong Technology



DNA markers
nanocavity
trapping linear DNA
nanopore ping-pong
nanopipette
linear and cyclic DNA
SiN chip
future applications
biomarker examples
IgG
nanopore ping-pong system

Xinjia Zhao, Yahui Zhang, and Guangyan Qing*

Nano Letters 2025, 25, 10, 3692-3706 **(Mini-Review)** Subscribed
Publication Date (Web): February 26, 2025

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ABSTRACT

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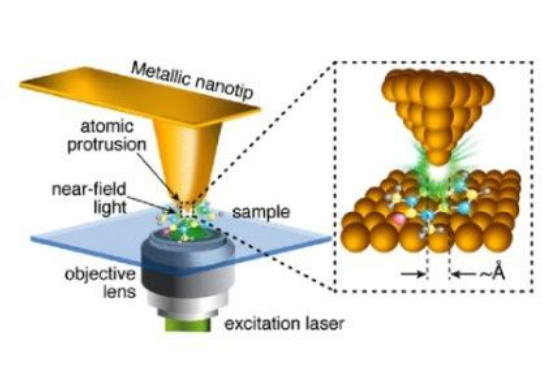


Metallic nanotip
atomic protrusion
near-field light
sample
objective lens
excitation laser
~Å

Renato Zenobi*, Naresh Kumar*, and Prabhat Verma*

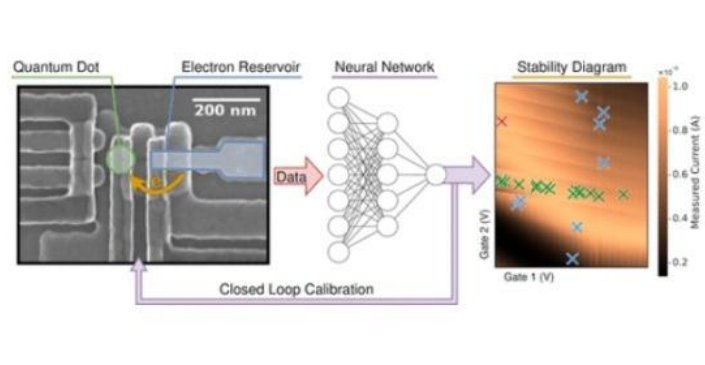
Nano Letters 2025, 25, 10, 3707-3716 **(Mini-Review)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

LETTERS

Experimental Online Quantum Dots Charge Autotuning Using Neural Networks



Quantum Dot
Electron Reservoir
Neural Network
Stability Diagram
200 nm
Data
Closed Loop Calibration
Gate 1 (V)
Gate 2 (V)
Measured Current (A)

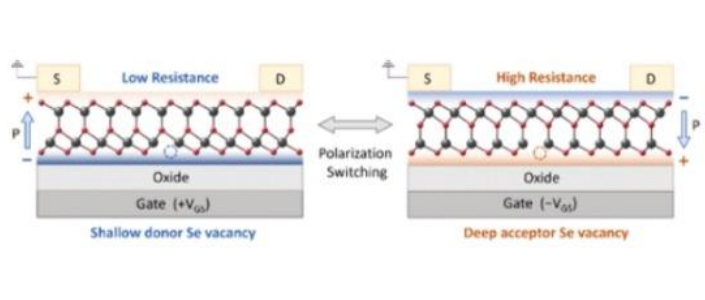
Victor Yon*, Bastien Galaup, Claude Rohrbacher, Joffrey Rivard, Alexis Morel, Dominic Leclerc, Clément Godfrin, Ruoyu Li, Stefan Kubicek, Kristiaan De Greve, Eva Dupont Ferrier, Yann Beilliard, Roger G. Melko, and Dominique Drouin

Nano Letters 2025, 25, 10, 3717-3725 **(Letter)** Open Access
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Vacancy Defects in 2D Ferroelectric In_2Se_3 and the Conductivity Modulation by Polarization–Defect Coupling



Low Resistance
High Resistance
Oxide
Polarization Switching
Shallow donor Se vacancy
Deep acceptor Se vacancy

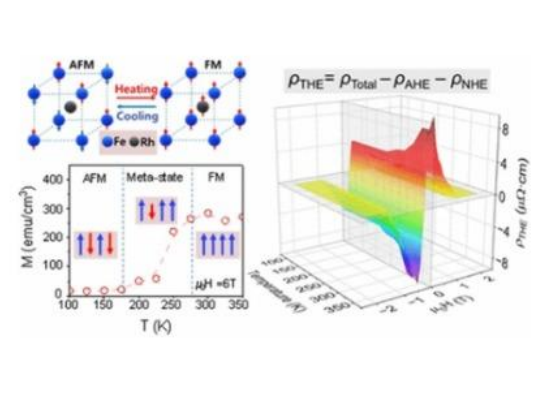
Ming-Yu Ma, Dan Wang*, Yu-Ting Huang*, Dong Han, Nian-Ke Chen*, Hong-Bo Sun, Shengbai Zhang, and Xian-Bin Li*

Nano Letters 2025, 25, 10, 3726-3732 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Sign Reversal of Hall Conductivity in Polycrystalline FeRh Films via the Topological Hall Effect in the Antiferromagnetic Phase



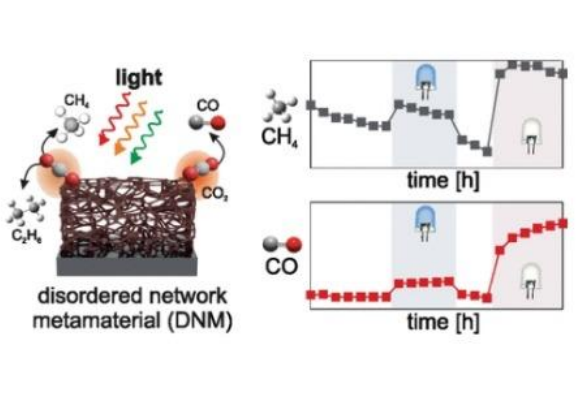
Yun-Ho Kim, Jae Won Choi, Jung-Min Cho, Gil-Sung Kim, No-Won Park, Gangmin Park, Md Sabbir Akhanda, Bellave Shivaram, Steven Bennett, Mona Zebarjadi, Won-Yong Lee*, and Sang-Kwon Lee*

Nano Letters 2025, 25, 10, 3733-3739 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

CO_2 Conversion in Cu–Pd Based Disordered Network Metamaterials with Ultrasmall Mode Volumes



light
CH_4
CO
CO_2
C_2H_4
disordered network metamaterial (DNM)
time [h]

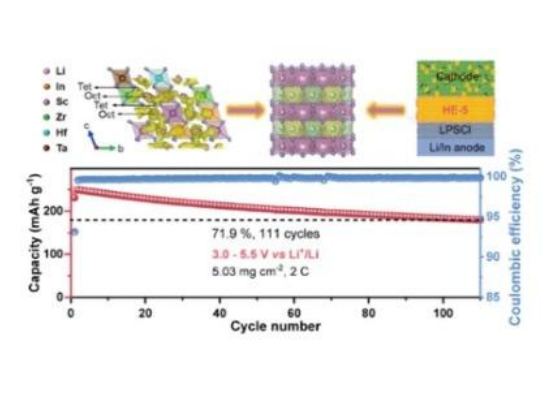
Jelena Wohlwend*, Oliver Wipf, David Kiwic, Siro Käch, Benjamin Mächler, Georg Haberfehlner, Ralph Spolenak, and Henning Galinski

Nano Letters 2025, 25, 10, 3740-3746 **(Letter)** Open Access
Publication Date (Web): February 20, 2025

Abstract Full text PDF

ABSTRACT

Advanced High-Entropy Halide Solid Electrolytes Enabling High-Voltage, Long-Cycling All-Solid-State Batteries



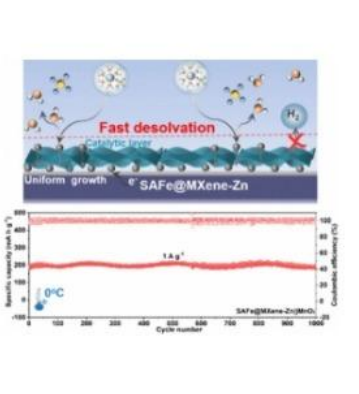
Yu Ye, Zhi Gu, Jiazhong Geng, Kangdi Niu, Pengcheng Yu, Yu Zhou, Junhao Lin*, Haw Jiunn Woo*, Yizhou Zhu*, and Jiayu Wan*

Nano Letters 2025, 25, 10, 3747-3755 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Delocalized Electron Engineering of MXene-Immobilized Atomic Catalysts toward Fast Desolvation and Dendritic Inhibition for Low-Temperature Zn Metal Batteries



Fast desolvation
Uniform growth
SAFe@MXene-Zn

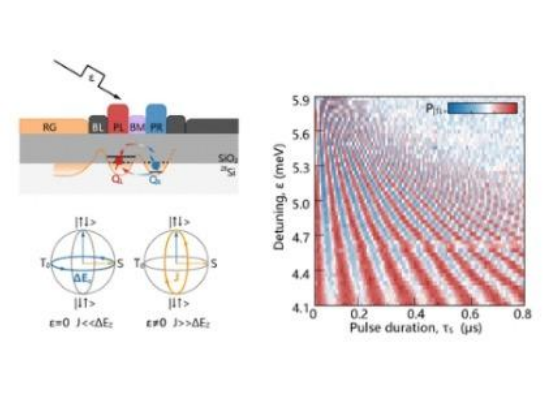
Jing Zhang*, Lu Pan, Lujie Jia, Jing Dong, Caiyin You*, Chenxiao Han, Na Tian, Xiaomin Cheng, Bingbing Tang, Qinghua Guan, Yongzheng Zhang, Bo Deng, Li Lei, Meinan Liu, Hongzhen Lin*, and Jian Wang*

Nano Letters 2025, 25, 10, 3756-3765 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

SWAP Gate for Spin Qubits Based on Silicon Devices Integrated with a Micromagnet



Detuning, ε (meV)
Pulse duration, τ₁ (μs)

Ming Ni, Rong-Long Ma, Zhen-Zhen Kong, Xiao Xue, Sheng-Kai Zhu, Chu Wang, Ao-Ran Li, Ning Chu, Wei-Zhu Liao, Gang Cao, Gui-Lei Wang, Xuedong Hu, Hong-Wen Jiang, Hai-Ou Li*, and Guo-Ping Guo

Nano Letters 2025, 25, 10, 3766-3772 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

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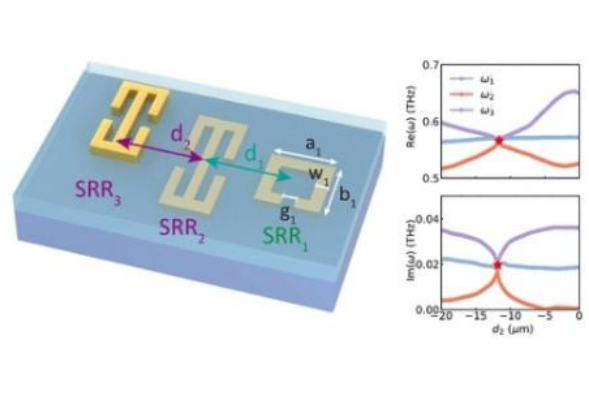
ABSTRACT

Achieving Higher-Order Exceptional Points in a Terahertz Metasurface



SRR_1
SRR_2
SRR_3
Re(ω) (THz)
Im(ω) (THz)

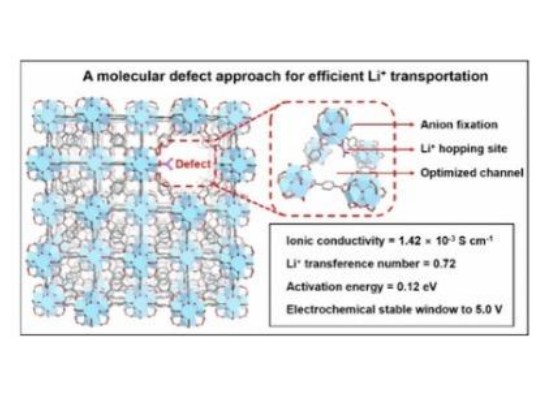
Peng Fu, Peng Pai, Wenze Lan, Shuo Du, Jiawei Shao, Leyong Hu, Chensheng Li, Yuyang Zhang, Zi-Lan Deng, Baoli Liu*, Luyi Yang*, and Changzhi Gu*

Nano Letters 2025, 25, 10, 3773-3780 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Defect-Modulated MOF Nanochannels for the Quasi-Solid-State Electrolyte of a Dendrite-Free Lithium Metal Battery



A molecular defect approach for efficient Li⁺ transportation
Defect
Anion fixation
Li⁺ hopping site
Optimized channel
Ionic conductivity = 1.42 × 10⁻³ S cm⁻¹
Li⁺ transference number = 0.72
Activation energy = 0.12 eV
Electrochemical stable window to 5.0 V

Jialong Jiang, Runhao Zhang, Jiachen Guo, Shiqi Zhang, Xiangtai Min, Ziyang Liu, Ning Liu, Dapeng Cao, Jun Xu*, Peng Cheng, and Wei Shi*

Nano Letters 2025, 25, 10, 3781-3790 **(Letter)** Subscribed
Publication Date (Web): March 2, 2025

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ABSTRACT

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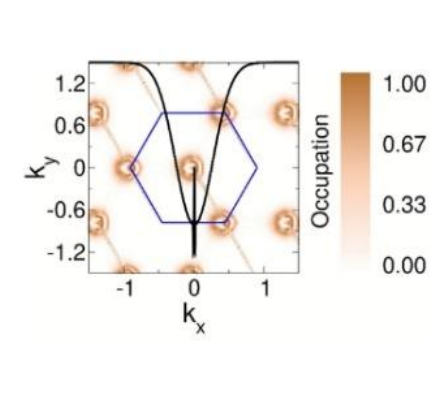
Combining THz and Infrared Light to Control Valley Charge and Current in Gapless Graphene



Sangeeta Sharma, Deepika Gill, Jyoti Krishna, John Kay Dewhurst, Peter Elliott, and Samuel Shallcross*

Nano Letters 2025, 25, 10, 3791-3798 **(Letter)** Subscribed
Publication Date (Web): February 25, 2025

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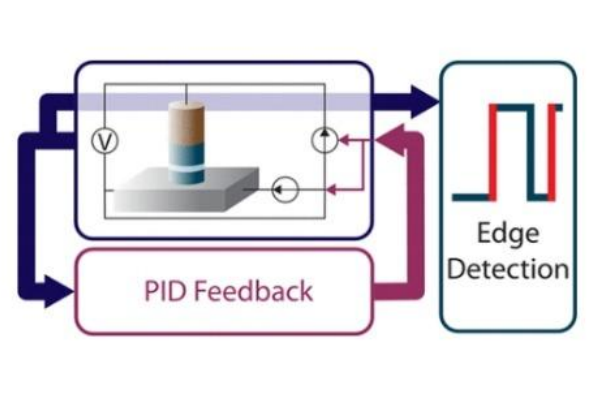
ABSTRACT

Closed Loop Superparamagnetic Tunnel Junctions for Reliable True Randomness and Generative Artificial Intelligence



PID Feedback
Edge Detection

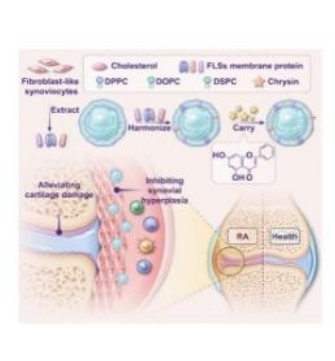
Dooyong Koh*, Qiuyuan Wang, Brooke C. McGoldrick, Chung-Tao Chou, Luqiao Liu*, and Marc A. Baldo*

Nano Letters 2025, 25, 10, 3799-3806 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

Biomimetic Nanoparticles Inhibit the HIF-1α/iNOS/NLRP3 Pathway to Alleviate Rheumatoid Arthritis



Mo Chen, Zhenhua Wang, Haolong Chen, Jin Li, Xing Guo*, and Shaobing Zhou*

Nano Letters 2025, 25, 10, 3807-3816 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

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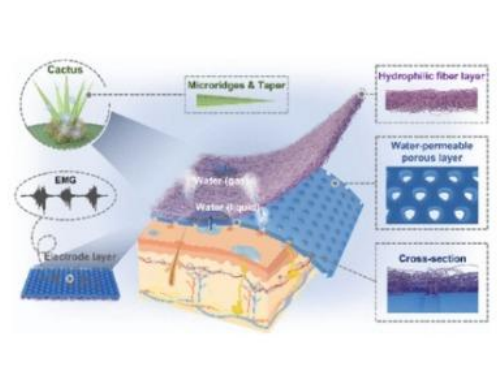
ABSTRACT

Bioinspired Flexible Epidermal Electronics with Superior Gas Permeability and Unidirectional Water Transport Capability



Cactus
Microridges & Taper
Hydrophobic fiber layer
Water-permeable porous layer
Cross-section
EMG
Electrode layer

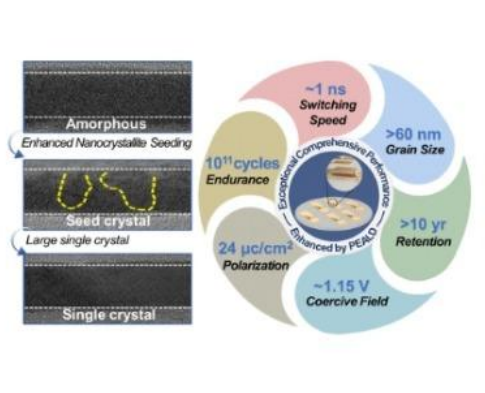
Boya Chen, Zhihui Qian*, Guangsheng Song, Xiaoru Niu, Yingqing Yu, Shengli Wang, Jianan Wu, Suqian Ma*, Yunhong Liang, Lei Ren*, and Luquan Ren

Nano Letters 2025, 25, 10, 3817-3825 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

Ultrafast Switching Speed Demonstrated in Wafer-Scale Integration of Crystalline Undoped HfO_2-Based Ferroelectrics



Amorphous
Enhanced Nanocrystallite Seeding
Seed crystal
Large single crystal
Single crystal
~1 ns Switching Speed
>60 nm Grain Size
>10 yr Retention
~1.15 V Coercive Field
24 μc/cm² Polarization
10¹¹cycles Endurance

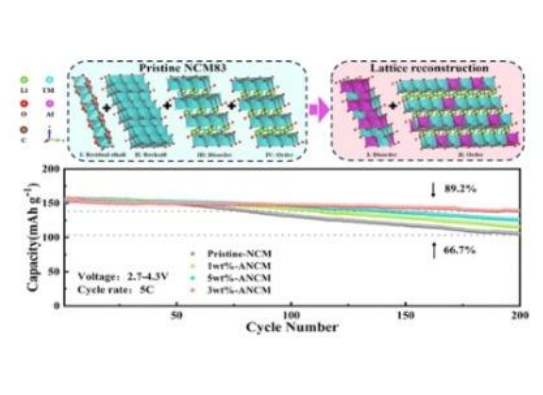
Zongwei Shang, Xiaomei Li, Changqing Ye, Hao Li, Puyang Cai, Xing Wu*, Runsheng Wang*, Ming Li*, and Ru Huang

Nano Letters 2025, 25, 10, 3826-3833 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Lattice Reconstruction Engineering Boosts the Extreme Fast Charging/Discharging Performance of Nickel-Rich Layered Cathodes



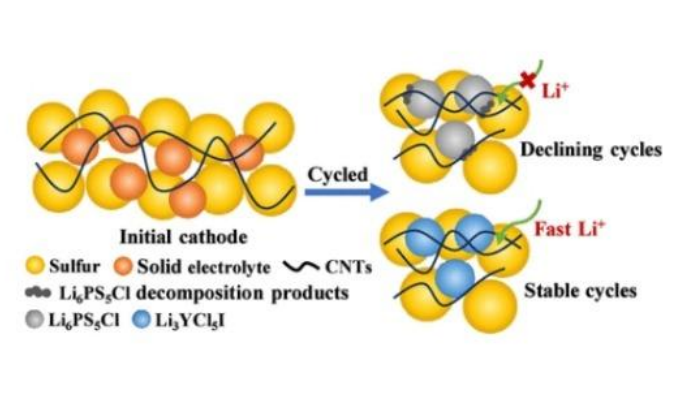
Pengcheng Li, Chengyu Li, Jun Wang, Cairong Jiang*, Xiang Gao*, Jianjun Ma, Wenge Yang, Dongliang Chao, and Yongjin Chen*

Nano Letters 2025, 25, 10, 3834-3842 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Halide as Catholyte in Composite Cathode to Enhance Cycling Stability of All-Solid-State Lithium–Sulfur Batteries



Cycled
Initial cathode
Declining cycles
Fast Li⁺
Stable cycles
Sulfur
Solid electrolyte
CNTs
Li_6PS_5Cl decomposition products
Li_6PS_5Cl
Li_3YCl_6I

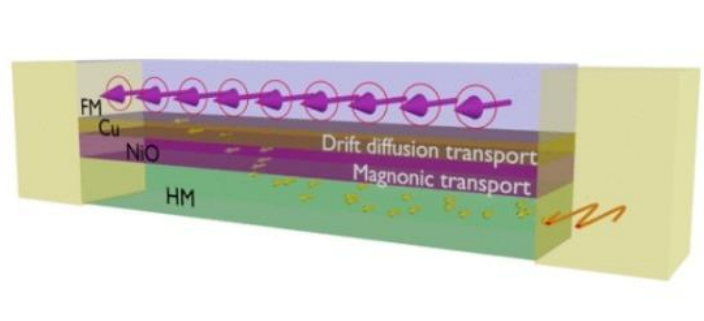
Xiaorong Fang, Yujun Fu, Shiqing Sun, Rongcheng Zhang, Pengqian Guo, Kai Sun, Dequan Liu, Kai Wang*, and Deyan He*

Nano Letters 2025, 25, 10, 3843-3850 **(Letter)** Subscribed
Publication Date (Web): February 28, 2025

Abstract Full text PDF

ABSTRACT

High-Efficiency Continuous Spin-Conduction through NiO/Cu Bilayer Structure



FM
Cu
NiO
HM
Drift diffusion transport
Magnonic transport

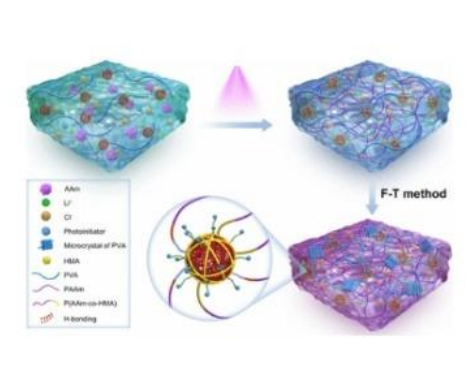
Biswajit Sahoo*, Christopher Safranski, Guohan Hu, Jim Liang, Michael Robbins, Pouya Hashemi, John Bruley, and Jonathan Z. Sun

Nano Letters 2025, 25, 10, 3851-3857 **(Letter)** Open Access
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Stretchable/Compressible Supercapacitors Based on High-Elasticity and Fatigue-Resistant Hydrogel Electrolyte Cross-Linked by Hydrophobic Nanospheres



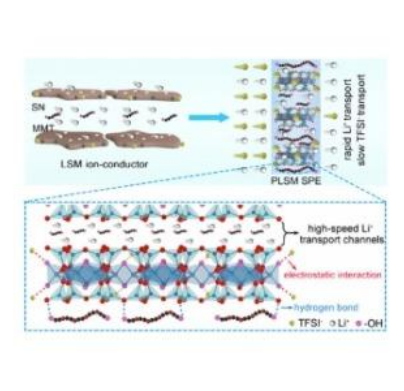
Guida Kang, Nan Lu, Leibo Li, Shengdao Wang*, Siyu Liu, Yanchao Yang, Jiashuang Luan, Shuling Zhang, and Guibin Wang*

Nano Letters 2025, 25, 10, 3858-3866 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Boosting Li^+ Conductivity and Oxidation Stability of Solid Polymer Electrolytes Using a Sustainable Montmorillonite-Based Ion Conductor



LSM ion-conductor
PLSM SPE
rapid Li⁺ transport
high-speed Li⁺ transport channels
electrostatic interaction
hydrogen bond

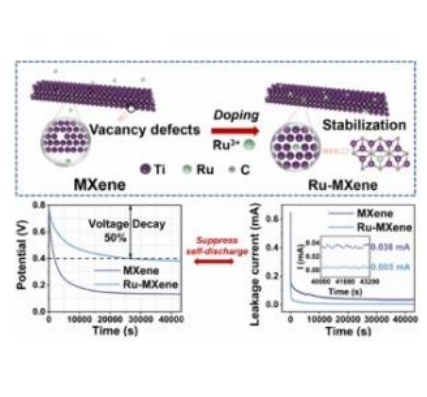
Wankai Wang, Yanfei Yang, and Junping Zhang*

Nano Letters 2025, 25, 10, 3867-3874 **(Letter)** Subscribed
Publication Date (Web): February 25, 2025

Abstract Full text PDF

ABSTRACT

Exceptional Suppression of the Self-Discharge Behavior of Supercapacitors by Precisely Tuning the Surface Assets of MXene by a Spontaneous Single-Atom Doping Strategy



Yiting Sun, Tiehu Li*, Xin Liu, Yuhui Liu, Amir Zada, Yongkang Han, Yanying Han, Jiahe Chen, and Alei Dang*

Nano Letters 2025, 25, 10, 3875-3882 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

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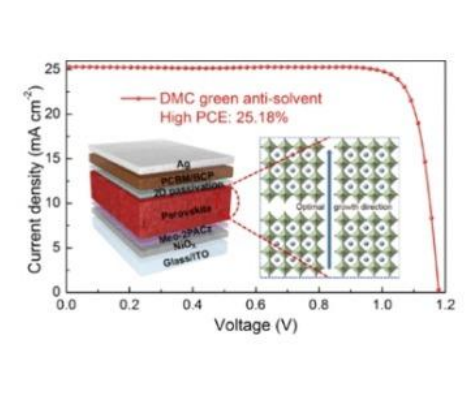
ABSTRACT

Perovskite Crystallization Regulation by a Green Antisolvent for High-Performance NiO_x-Based Inverted Solar Cells



Qing Sun, Gang Liu, Shaocong Duan, Die Hu, Bo Shen, Bonan Kang*, and S. Ravi P. Silva

Nano Letters 2025, 25, 10, 3883-3890 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

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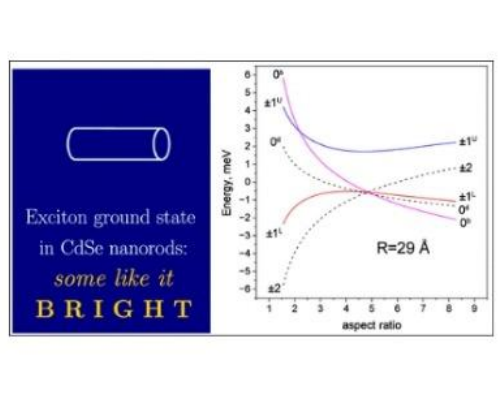
ABSTRACT

Exciton Fine Structure in Wurtzite Nanorods: Is the Exciton Ground State Always Dark?



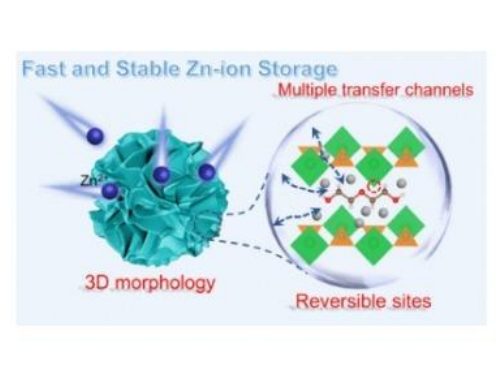
Serguei V. Goupalov*

Nano Letters 2025, 25, 10, 3891-3896 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

Enabling Fast and Stable Zinc-Ion Storage in Vanadyl Phosphate Cathodes



Fast and Stable Zn-ion Storage
Multiple transfer channels
3D morphology
Reversible sites

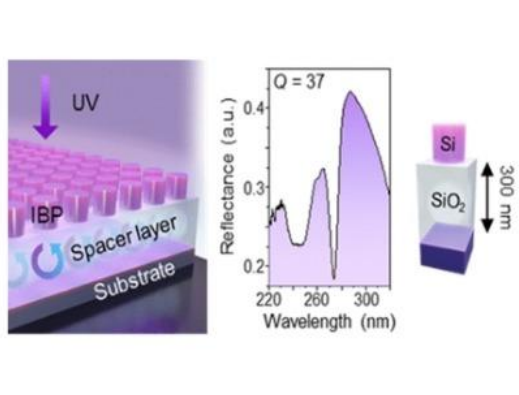
Xuelian Liu, Quan Zong*, Keyi Chen, Qilong Zhang*, Chaofeng Liu, Zejie Zhu, and Guozhong Cao*

Nano Letters 2025, 25, 10, 3897-3905 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

Achieving High Quality Factor Interband Nanoplasmonics in the Deep Ultraviolet Spectrum via Mode Hybridization



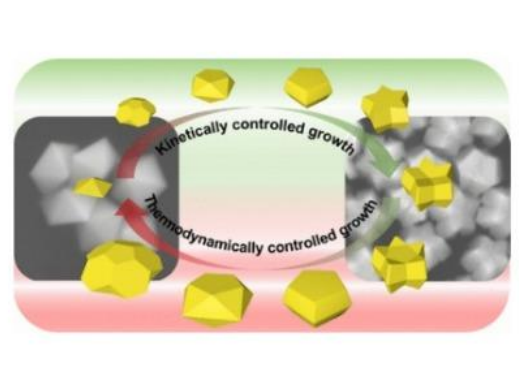
Evelin Csányi, Yan Liu, Dan Kai, Sigit Sugiarto, Henry Yit Loong Lee, Febiana Tjiptoharsono, Qifeng Ruan, Soroosh Daqiqeh Rezaei, Xiao Chi, Andrivo Rusydi, Graham Leggett, Joel K. W. Yang*, and Zhaogang Dong*

Nano Letters 2025, 25, 10, 3906-3913 **(Letter)** Subscribed
Publication Date (Web): February 6, 2025

Abstract Full text PDF

ABSTRACT

Kinetically Controlled Synthesis of Concave Five-Fold Twinned Gold Nanocrystals and Their Surface-Enhanced Raman Scattering Properties



Kinetically controlled growth
Thermodynamically controlled growth

Changsheng Feng, Yu Tian, Chenxing Li, Lifang Zheng, Feiyue Ge, Weigao Xu, Fang Cheng*, and Xue-Jun Wu*

Nano Letters 2025, 25, 10, 3914-3922 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

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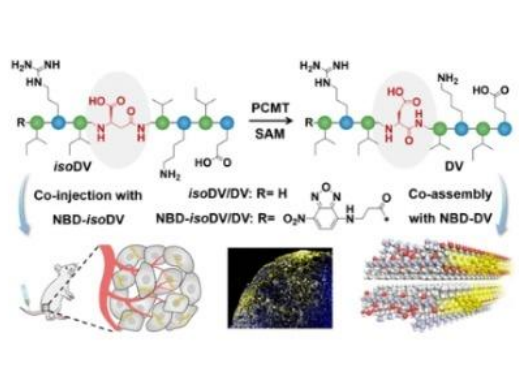
ABSTRACT

Aspartate Isomerization Regulates in Situ Assembly of Peptides into Supramolecular Probes for Detection of Protein Carboxyl Methyltransferase in Bladder Cancer



PCMT
SAM
isoDV
DV
Co-injection with NBD-isoDV
Co-assembly with NBD-DV

Zeyu Zhang, Xin Liu, Feng Tian, Yushi Wang, Binbin Hu, and Zhilin Yu*

Nano Letters 2025, 25, 10, 3923-3930 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

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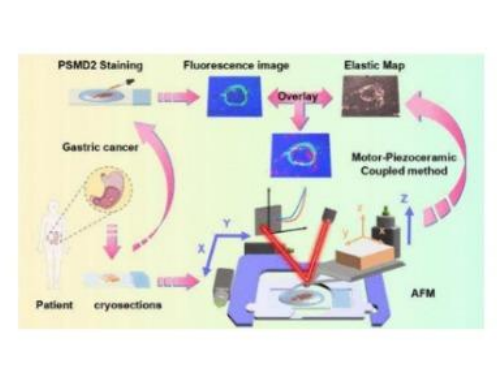
ABSTRACT

Impact of PSMD2 on Gastric Cancer Tissue Stiffness Investigated via Motor-Piezoceramic Coupled Atomic Force Microscopy



PSMD2 Staining
Fluorescence image
Elastic Map
Overlay
Gastric cancer
Motor-Piezoceramic Coupled method
Patient
cryosections
AFM

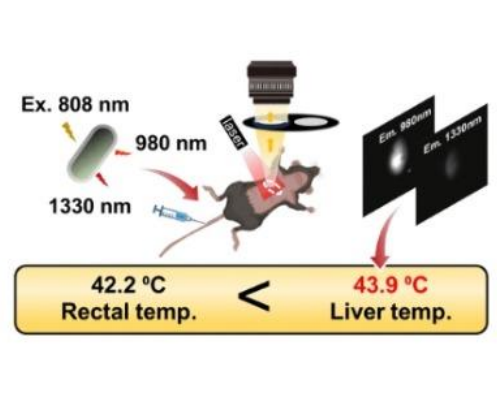
Yixiao Xia, Junkai Jia, Hongying Ma, Si Tang, Shenghang Zhai, Tianbiao Zhang, Ying Zhao*, Jialin Shi*, and Lianqing Liu

Nano Letters 2025, 25, 10, 3931-3938 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Near-Infrared Nanothermometer Reveals Temperature Discrepancy between Organs and Body Surface for Heatstroke Prevention



Ex. 808 nm
980 nm
1330 nm
42.2 °C Rectal temp.
<
43.9 °C Liver temp.

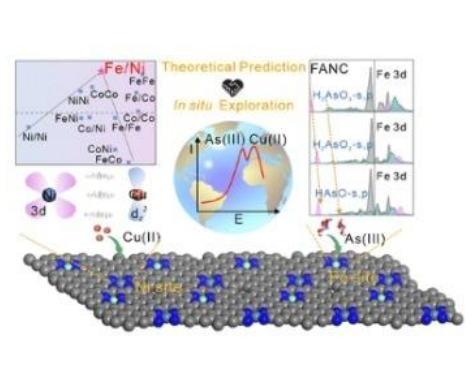
Meilin Liu, Yaru Sun, Yi Zhang*, Yufu Liu, Zhengbing Liang, Junhao Liu, Hongbao Xin, Xiancheng Zeng*, and Qingsong Mei*

Nano Letters 2025, 25, 10, 3939-3946 **(Letter)** Subscribed
Publication Date (Web): February 28, 2025

Abstract Full text PDF

ABSTRACT

High-Throughput Screening of Selective Bimetallic Atomic Catalysts for Self-Adaptive Matched Electrochemical Reduction



Theoretical Prediction
In situ Exploration
FANC
As(III) Cu(II)

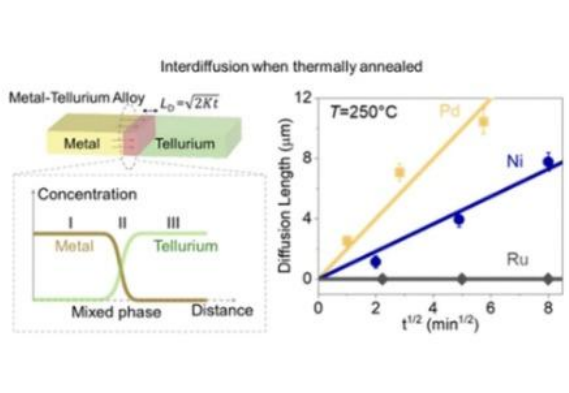
Zong-Yin Song, Pei-Hua Li, Yong-Yu Li, Meng Yang, Jing-Yi Lin, Bo-Ping Xiong, Rui-Ze Xia, Xin Cai, Wanchun Duan, Shi-Hua Chen*, Lina Li*, Wen-Qing Liu*, and Xing-Jiu Huang*

Nano Letters 2025, 25, 10, 3947-3955 **(Letter)** Subscribed
Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT

Thermally Stable Ruthenium Contact for Robust *p*-Type Tellurium Transistors



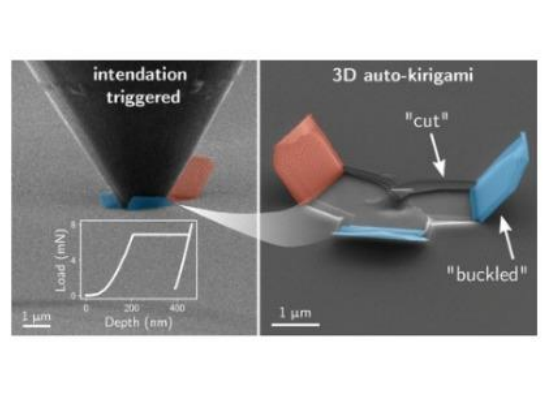
I K M Reaz Rahman, Taehoon Kim, Inha Kim, Naoki Higashitarumizu, Shu Wang, Shifan Wang, Hyong Min Kim, James Bullock, Virginia Altoe, Joel W. Ager III, Daryl C. Chrzan, and Ali Javey*

Nano Letters 2025, 25, 10, 3956-3963 **(Letter)** Subscribed
Publication Date (Web): February 28, 2025

Abstract Full text PDF

ABSTRACT

High-Throughput Formation of 3D van der Waals Auto-Kirigami



intendation triggered
3D auto-kirigami
"cut"
"buckled"
1 μm

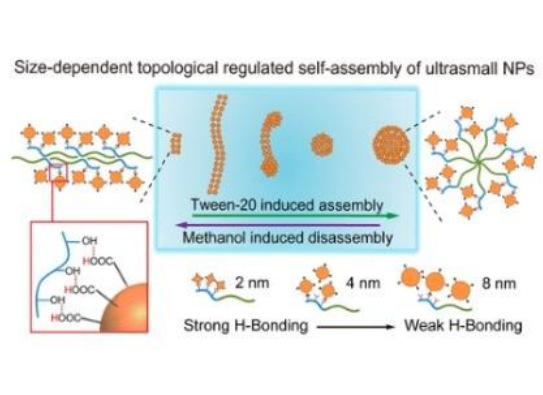
Luc N. Capaldi, Li Yuan, Cangyu Qu, Daniel A. Sánchez, Robert W. Carpick*, and Ottman A. Tertuliano*

Nano Letters 2025, 25, 10, 3964-3971 **(Letter)** Subscribed
Publication Date (Web): February 28, 2025

Abstract Full text PDF

ABSTRACT

Size-Dependent, Topology-Regulated, pH-Change-Tolerable, and Reversible Self-Assembly of Ultrasmall Nanoparticles



Size-dependent topological regulated self-assembly of ultrasmall NPs
Tween-20 induced assembly
Methanol induced disassembly
2 nm
4 nm
8 nm
Strong H-Bonding
Weak H-Bonding

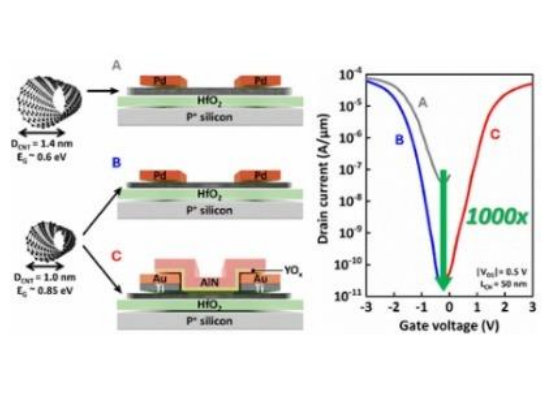
Zhihuan Liao, Menghan Xiao, Junliang Chen, Zhenkun Huang, Shipeng Chen*, Yang Liu*, and Shuaidong Huo*

Nano Letters 2025, 25, 10, 3972-3980 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Overcoming the Leakage and Contact Resistance Challenges in Highly Scaled PMOS and NMOS Carbon Nanotube Transistors



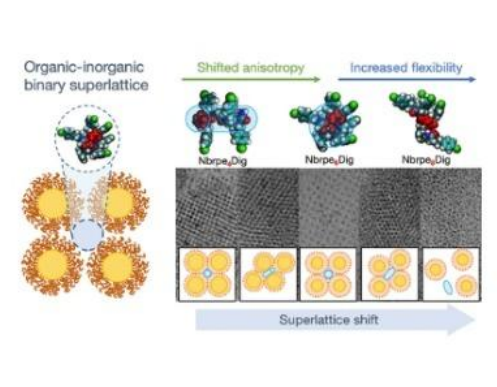
Hsin-Yuan Chiu, Nathaniel Safron, Matthias Passlack, Tzu-Ang Chao, Sheng-Kai Su, Po-Sen Mao, Chen-Han Chou, Han-Yi Huang, Guan-Zen Wu, Chien-Wei Chen, Chi-Chung Kei, Wen-Hao Chang, H.-S. Philip Wong, Iuliana P. Radu, Gregory Pitner*, and Chao-Hsin Chien*

Nano Letters 2025, 25, 10, 3981-3988 **(Letter)** Open Access
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Toward Computation-Guided Design of Tunable Organic–Inorganic CdS Quantum Dot Binary Superlattices



Organic-inorganic binary superlattice
Shifted anisotropy
Increased flexibility
Superlattice shift

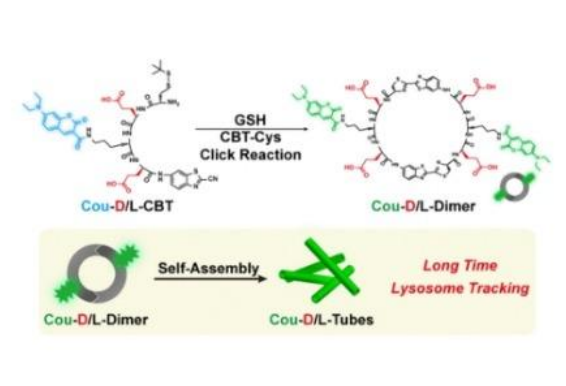
Xin Qi*, Sarah Helland, Christopher D. Lowe, Helen Larson, Jianming Cui, Renyu Zheng, Madison Monahan, Chun-Long Chen, James De Yoreo, Jim Pfaendtner, and Brandi Cossairt*

Nano Letters 2025, 25, 10, 3989-3996 **(Letter)** Subscribed
Publication Date (Web): February 25, 2025

Abstract Full text PDF

ABSTRACT

Coumarin Excimer Nanotube for Long-Time Lysosome Tracking



GSH
CBT-Cys
Click Reaction
Cou-D/L-CBT
Cou-D/L-Dimer
Self-Assembly
Cou-D/L-Tubes
Long Time Lysosome Tracking

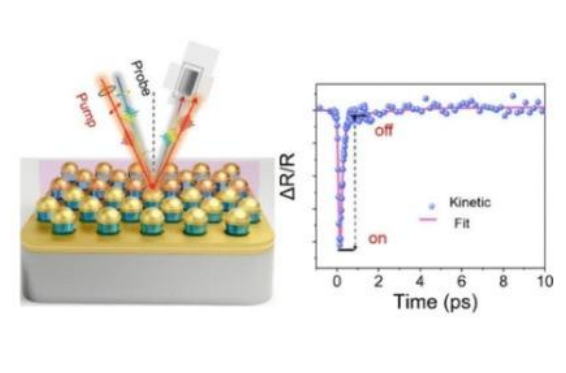
Yang Yang, Xiaoyang Liu, Ying Xu, Fan Xing, Zihan Yuan, Yuxuan Chen, Xiaofeng Wu*, Cailian Wang*, and Gaolin Liang*

Nano Letters 2025, 25, 10, 3997-4004 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Plasmonic Ultrafast All-Optical Switching with a Superior On–Off Ratio



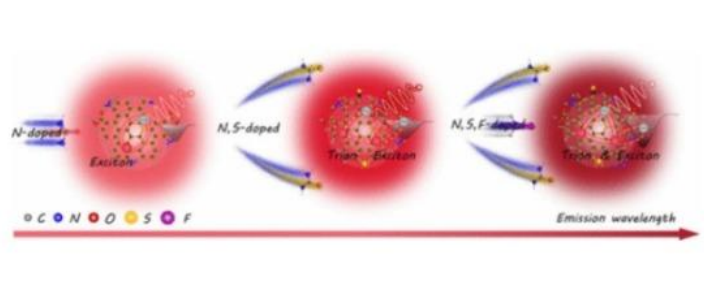
Xiaoxiang Dong, Yonglin He, Renxian Gao, Kang Yang, Jingyu Wang, Weimin Yang, Jiayu Li, Bin Ren*, Ming-De Li*, and Zhilin Yang*

Nano Letters 2025, 25, 10, 4005-4012 **(Letter)** Subscribed
Publication Date (Web): February 28, 2025

Abstract Full text PDF

ABSTRACT

Heteroatom Doping Effects on the Exciton Behavior in Carbonized Polymer Dots



N-doped
N,S-doped
Emission wavelength

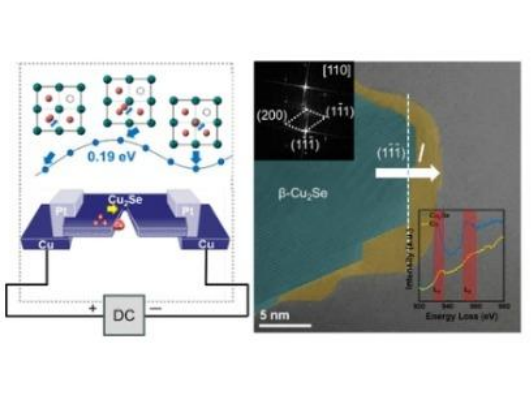
Zhihong Wei, Xin Yang, Chengshuang Liao, Feishi Shan, Shengnan Feng, Siyang Ye, Xinlan Hou, Leyong Wang, Xiaoyong Wang, Zhouyu Wang*, Siyu Lu*, and Yuxi Tian*

Nano Letters 2025, 25, 10, 4013-4021 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Revealing Atomistic Ion Migration Pathways of Orientation-Dependent Long-Range Cu^+ Ion Migration in β-Cu_2Se



0.19 eV
DC
β-Cu_2Se
5 nm

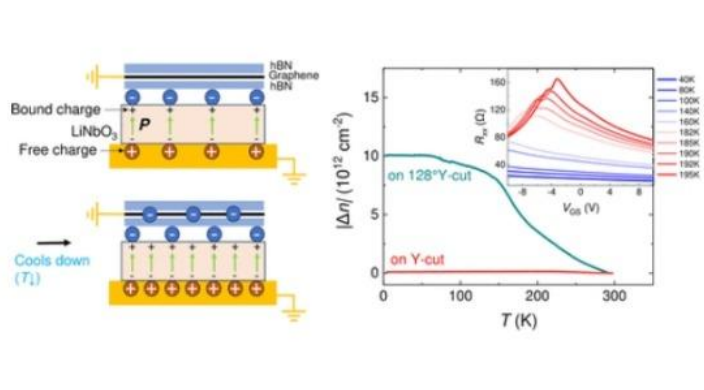
Hanwen Hu, Chen Li, Xinyu Guo, Peijie Ma, Lei Yang*, and Kun Zheng*

Nano Letters 2025, 25, 10, 4022-4028 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Unexpected Large Electrostatic Gating by Pyroelectric Charge Accumulation



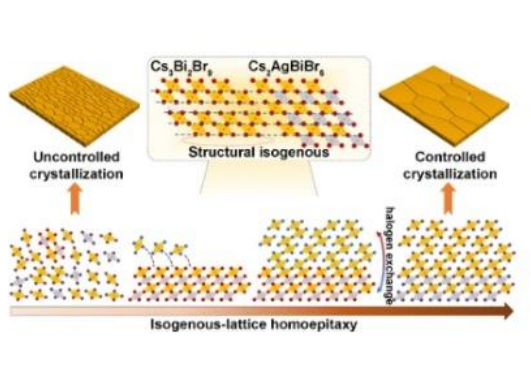
Yicheng Mou, Qi Liu, Jiaqi Liu, Yingchao Xia, Zejing Guo, Wenqing Song, Jiaming Gu, Zixuan Xu, Wenbin Wang, Hangwen Guo, Wu Shi*, Jian Shen, and Cheng Zhang*

Nano Letters 2025, 25, 10, 4029-4036 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Highly Oriented Large-Grain 2D $Cs_3Bi_2X_9$ Polycrystalline Films by an Isogenous-Lattice Homoepitaxy Strategy for Photodetection



$Cs_3Bi_2Br_9$
$Cs_2AgBiBr_6$
Uncontrolled crystallization
Structural isogenous
Controlled crystallization
Isogenous-lattice homoepitaxy

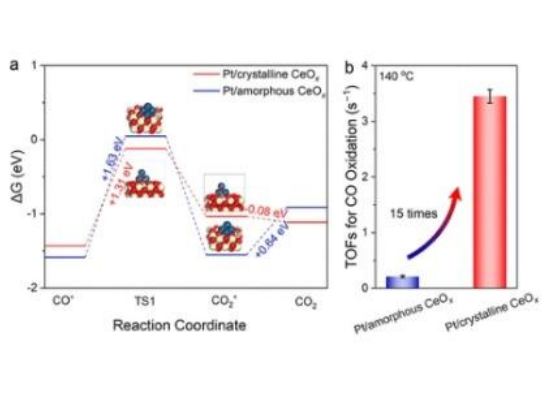
Hantao Wang, Yu Zou*, Liang Li, Xinyu Guo, Guanyu Zhang, Qinyun Liu, Guowei Lu, Yunan Gao, Bo Qu, Wenjin Yu*, Zhijian Chen*, and Lixin Xiao*

Nano Letters 2025, 25, 10, 4037-4045 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

Crystallinity of Cerium Oxide Dictates Reactivity of Platinum Catalysts



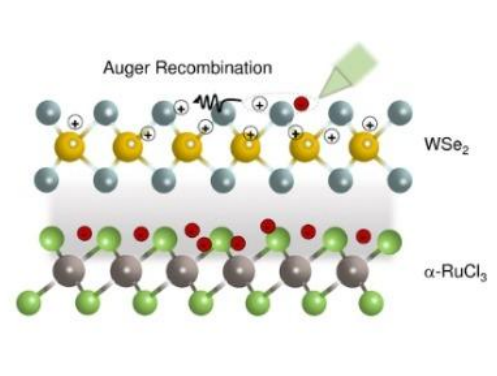
Nan Zhang, Jiankang Zhao, Jie Wei, Hongliang Li, Wenlong Wu, Xu Li*, Jingyue Liu*, and Jie Zeng*

Nano Letters 2025, 25, 10, 4046-4053 **(Letter)** Subscribed
Publication Date (Web): February 10, 2025

Abstract Full text PDF

ABSTRACT

Ultrafast and Highly Mobile Photocarriers in Monolayer WSe_2 Doped by α-$RuCl_3$



Auger Recombination
WSe_2
α-$RuCl_3$

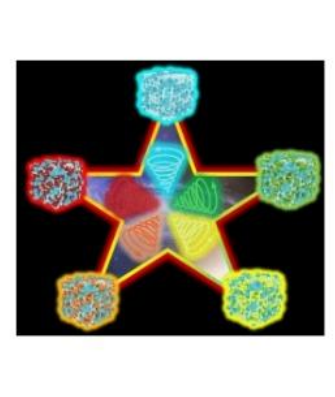
Ting Zheng, Emma Low, Neema Rafizadeh, Kenneth S. Burch*, and Hui Zhao*

Nano Letters 2025, 25, 10, 4054-4059 **(Letter)** Subscribed
Publication Date (Web): February 26, 2025

Abstract Full text PDF

ABSTRACT

Construction of Carbon Dot-Based Color-Tunable Circularly Polarized Long Afterglow via in Situ Phosphorescence Resonance Energy Transfer



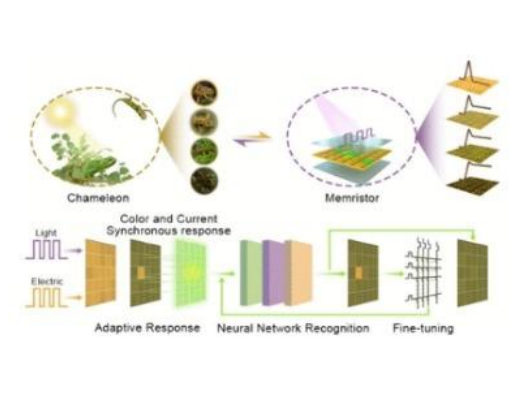
Yijie Wang, Shengju Zhou, Yi Zhao, Haibin Xiao, Ling-Bao Xing, Xiaofeng Sun*, Jin Zhou*, and Siyu Lu*

Nano Letters 2025, 25, 10, 4060-4067 **(Letter)** Subscribed
Publication Date (Web): February 28, 2025

Abstract Full text PDF

ABSTRACT

Chameleon-Inspired Photoelectric-Driven Multifunctional Memristors Based on Polyoxometalate for an Adaptive–Recognition–Tuning System



Chameleon
Memristor
Color and Current Synchronous response
Light
Electric
Adaptive Response
Neural Network Recognition
Fine-tuning

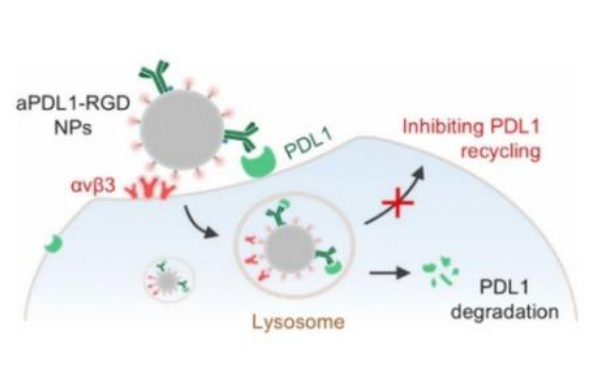
Wentong Li, Yanyun Ren, Wenhao Yang, Junjie Ba, Yizhan Wang, Zhe Li, Yang Li, Zhongrui Wang, Liang Shen*, Jiaqi Zhang*, and Lijun Zhang

Nano Letters 2025, 25, 10, 4068-4077 **(Letter)** Subscribed
Publication Date (Web): February 20, 2025

Abstract Full text PDF

ABSTRACT

Multivalent RGD Peptide-Mediated Nanochimera for Lysosomal Degradation of PDL1 Protein



aPDL1-RGD NPs
αvβ3
PDL1
Inhibiting PDL1 recycling
Lysosome
PDL1 degradation

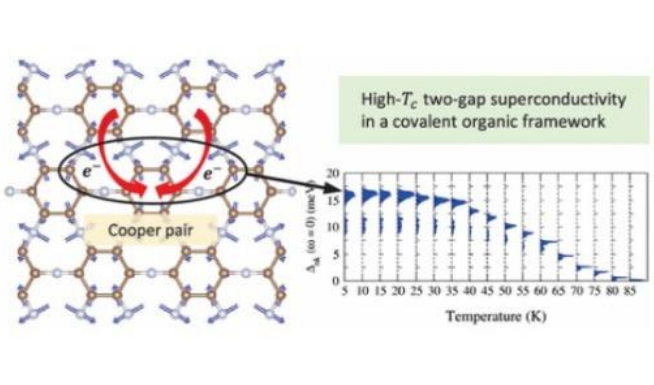
Yanfei Song, Linjie Cui, Zhilin Liu*, Zhaohui Tang*, and Xuesi Chen

Nano Letters 2025, 25, 10, 4078-4086 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Prediction of a Two-Gap High-T_c Superconducting Covalent Organic Framework



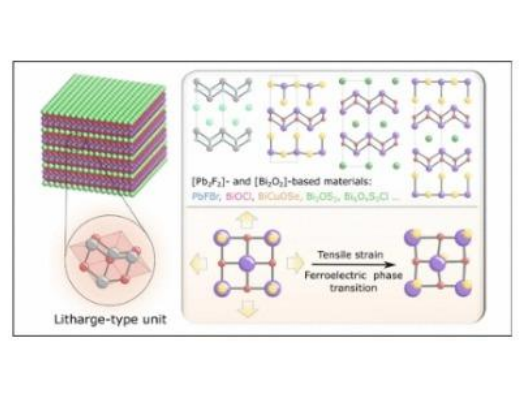
Peng-Jen Chen*

Nano Letters 2025, 25, 10, 4087-4092 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

Giant Polarizability and Origin of Ferroelectricity in Layered Materials with a Litharge-Type Structural Unit



Litharge-type unit
$[Pb_2F_2]$- and $[Bi_2O_2]$-based materials:
Tensile strain
Ferroelectric phase transition

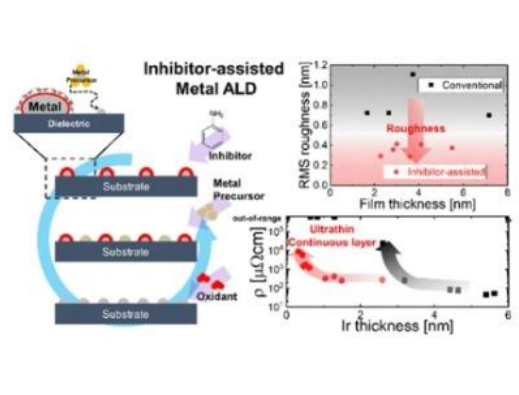
Ziye Zhu, Jiaming Hu, Yubo Yuan, Hua Wang, Xiao Lin, and Wenbin Li*

Nano Letters 2025, 25, 10, 4093-4100 **(Letter)** Subscribed
Publication Date (Web): February 27, 2025

Abstract Full text PDF

ABSTRACT

Selective Surface Passivation for Ultrathin and Continuous Metallic Films via Atomic Layer Deposition



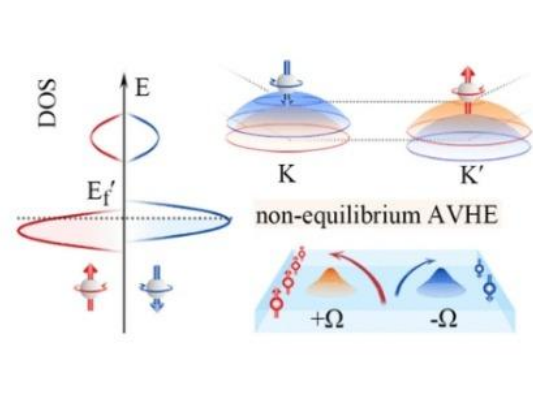
Han Kim, Taeseok Kim, Minseok Kim, Jihoon Jeon, Gwang Min Park, Sung-Chul Kim, Sung Ok Won, Ryosuke Harada, Sangtae Kim, and Seong Keun Kim*

Nano Letters 2025, 25, 10, 4101-4107 **(Letter)** Subscribed
Publication Date (Web): March 3, 2025

Abstract Full text PDF

ABSTRACT

van Hove Singularity-Induced Non-Equilibrium Anomalous Valley Hall Effect in a Two-Dimensional Lattice



DOS
E
E_f'
K
K′
non-equilibrium AVHE
+Ω
-Ω

Shuyan Chai, Jiangyu Zhao, Xinru Li*, Ying Dai*, Baibiao Huang, and Yandong Ma*

Nano Letters 2025, 25, 10, 4108-4114 **(Letter)** Subscribed
Publication Date (Web): February 25, 2025

Abstract Full text PDF

ABSTRACT

MASTHEADS

Issue Editorial Masthead

Nano Letters 2025, 25, 10, XXX-XXX **(Article)** Subscribed
Publication Date (Web): March 12, 2025

First Page PDF

Issue Publication Information

Nano Letters 2025, 25, 10, XXX-XXX **(Article)** Subscribed
Publication Date (Web): March 12, 2025

First Page PDF

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