February 19, 2025
Volume 25, Issue 7
Pages 2587-3028

About the Cover:

Tuning the mechanobiology of cells can enhance the interaction between nanoparticles and the cell membrane. As a key regulator of cell mechanics, the inhibition of yes-associated protein (YAP) may be leveraged to optimize cell–nanoparticle interactions, thereby promoting the delivery of nanomedicines and improving therapeutic efficiency. The cover art was partially conceptualized and refined with the assistance of ChatGPT-4. **View the article.**

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LETTERS

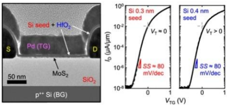
Sub-Nanometer Equivalent Oxide Thickness and Threshold Voltage Control Enabled by Silicon Seed Layer on Monolayer MoS_2 Transistors

Jung-Soo Ko, Sol Lee, Robert K. A. Bennett, Kirstin Schauble, Marc Jaikissoon, Kathryn Neilson, Anh Tuan Hoang, Andrew J. Mannix, Kwanpyo Kim, Krishna C. Saraswat, and Eric Pop*

Nano Letters 2025, 25, 7, 2587-2593 **(Letter)** Subscribed
Publication Date (Web): February 4, 2025

Abstract Full text PDF

ABSTRACT



Connection Length Controlled Sound Speed and Thermal Conductivity of Hybrid Metalcone Films

Md Shafkat Bin Hoque, Rachel A. Nye, Saman Zare, Stephanie Atkinson, Siyao Wang, Andrew H. Jones, John T. Gaskins, Gregory N. Parsons, and Patrick E. Hopkins*

Nano Letters 2025, 25, 7, 2594-2599 **(Letter)** Open Access
Publication Date (Web): February 10, 2025

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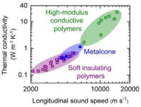
ABSTRACT



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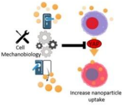
Regulation of Cell–Nanoparticle Interactions through Mechanobiology

Marco Cassani*, Francesco Niro, Soraia Fernandes, Daniel Pereira-Sousa, Sofia Faes Morazzo, Helena Durikova, Tianzheng Wang, Lara González-Cabaleiro, Jan Vrbsky, Jorge Oliver-De La Cruz, Simon Klimovic, Jan Pribyl, Tomas Loja, Petr Skladal, Frank Caruso*, and Giancarlo Forte*

Nano Letters 2025, 25, 7, 2600-2609 **(Letter)** Open Access
Publication Date (Web): January 8, 2025

Abstract Full text PDF

ABSTRACT


Cell Mechanobiology
YAP
Increase nanoparticle uptake

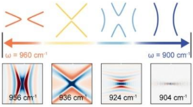
Multiple Hyperbolic Dispersion Branches and Broadband Canalization in a Phonon-Polaritonic Heterostructure

Jiaqi Zhu, Youning Gong, Jun Liang, Yanyu Zhao, Zhe Cui, Delong Li, Qingdong Ou*, Yupeng Zhang*, and Guo Ping Wang*

Nano Letters 2025, 25, 7, 2610-2617 **(Letter)** Subscribed
Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT


ω = 960 cm⁻¹
ω = 900 cm⁻¹
956 cm⁻¹
936 cm⁻¹
924 cm⁻¹
904 cm⁻¹

Revisiting the Interface Dynamics of MXene/Rubber Elastomers: Multiscale Mechanistic Insights into Collaborative Bonding for Robust Self-Healing Sensors

Lixian Song, Dong Liu, Huan Zhang, Yang Wang, Bo Zhao, Wenbin Kang*, Yutian Zhu, Yanying Wei*, and Yingze Song*

Nano Letters 2025, 25, 7, 2618-2627 **(Letter)** Subscribed

Publication Date (Web): February 10, 2025

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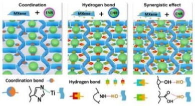
ABSTRACT


Coordination
MXene
ENR
Hydrogen bond
Synergistic effect
Coordination bond
Ti
Hydrogen bond
NH
HO
OH
HO
OH
HO

Reversible Piezochromism of Platinum(II) and Palladium(II) Dimers in Molecular Single Crystals

Paul Steeger, Tobias Theiss, Dominik Schwab, Iván Maisuls, Vedhanth Senthiappan Vellaiappan Uthayasurian, Robert Schmidt, Ilya Kupenko, Carmen Sanchez-Valle, Steffen Michaelis de Vasconcellos, Nikos L. Doltsinis, Cristian A. Strassert, and Rudolf Bratschitsch*

Nano Letters 2025, 25, 7, 2628-2632 **(Letter)** Subscribed

Publication Date (Web): January 23, 2025

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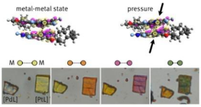
ABSTRACT


metal-metal state
pressure
M
M
[PdL]
[PtL]

Effective Cooling of Gateway Equipment Based on Atmospheric Water Adsorption–Desorption Process

Jie Zhao, Zeyang Yan, Buwei Zhu, Cheng Xue, Xue-Ting Jin, Min Liu, Siwei Sun, and Yang-Hui Luo*

Nano Letters 2025, 25, 7, 2633-2638 **(Letter)** Subscribed

Publication Date (Web): February 4, 2025

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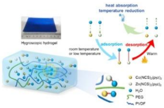
ABSTRACT


heat absorption
temperature reduction
Hygroscopic hydrogel
room temperature or low temperature
adsorption
desorption
Warm
Co(NCS)2(pyz)2
Zn(NCS)2(pyz)2
H2O
PEG
PVDF

Exciton Emission Enhancement in Two-Dimensional Monolayer Tungsten Disulfide on a Silicon Substrate via a Fabry–Pérot Microcavity

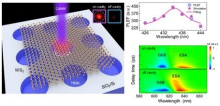
Xiaotian Bao, Jianwei Shi, Xu Han, Keming Wu, Xin Zeng, Yuexing Xia, Jinghan Zhao, Zhiyong Zhang, Wenna Du, Shuai Yue, Xianxin Wu, Bo Wu, Yuan Huang*, Wenkai Zhang*, and Xinfeng Liu*

Nano Letters 2025, 25, 7, 2639-2646 **(Letter)** Subscribed

Publication Date (Web): January 18, 2025

Abstract Full text PDF

ABSTRACT



Hierarchical Fibrous Metal–Organic Framework/Ionic Liquid Membranes for Efficient CO_2/N_2 Separation

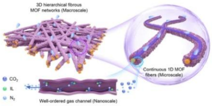
Huijuan Zhao*, Tongtong Zhang, Shaojuan Chen, and Guodong Zhao*

Nano Letters 2025, 25, 7, 2647-2654 **(Letter)** Subscribed

Publication Date (Web): February 6, 2025

Abstract Full text PDF

ABSTRACT


3D hierarchical fibrous MOF networks (Macroscale)
Continuous 1D MOF fibers (Microscale)
CO2
IL
N2
Well-ordered gas channel (Nanoscale)

Electronic Impact of High-Energy Metal Deposition on Ultrathin Oxide Semiconductors

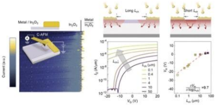
Yi-Yu Pan, Min-Ju Kuo, Shih-Chieh Chen, Tanveer Ahmed, Robert Tseng, Chi-Chung Kei, Tsung-Te Chou, Che-Chi Shih, Wei-Yen Woon, Szuya Sandy Liao, Chi Chen, and Der-Hsien Lien*

Nano Letters 2025, 25, 7, 2655-2661 **(Letter)** Open Access

Publication Date (Web): January 21, 2025

Abstract Full text PDF

ABSTRACT



Selenium-Doped Copper Formate Nanozymes with Antisenescence and Oxidative Stress Reduction for Atherosclerosis Treatment

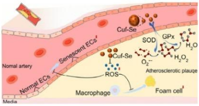
Xiao Huang, Yue Zhou, Yukang Guo, Dan Yan, Ping Sun, Yongbin Cao, Yuanyuan Chen*, and Jian Peng*

Nano Letters 2025, 25, 7, 2662-2669 **(Letter)** Subscribed

Publication Date (Web): January 17, 2025

Abstract Full text PDF

ABSTRACT


Cuf-Se
SOD
GPx
H_2O
Senescent ECs
Cuf-Se
H_2O_2
$O_2^{\cdot-}$
Nomal artery
ROS
Atherosclerotic plauqe
Normal ECs
Macrophage
Foam cell
Media

Effective Utilization of Nanoporosity and Surface Area Guides Electrosynthesis over Soft-Landed Copper Oxide Catalyst Layers

Sven Arnouts, Daniel Choukroun, Ilargi Napal, Guillermo Tajuelo Castilla, Javier Prieto, Nathalie Claes, Nick Daems, Silvia Nappini, Elena Magnano, Gonzalo Santoro, Sara Bals, José Ángel Martín-Gago, and Tom Breugelmans*

Nano Letters 2025, 25, 7, 2670-2677 **(Letter)** Subscribed

Publication Date (Web): January 21, 2025

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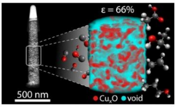
ABSTRACT


ε = 66%
500 nm
● Cu_xO ● void

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Self-Assembly Design of a Robust 2D Frustrated Magnet with Bilayer Tetragonal Spin–Lattice

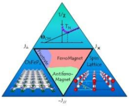
Jianpei Xing, Bo Zhao, Jinchao Kang, Yan Qi, Qinxi Liu, Xue Jiang*, and Jijun Zhao

Nano Letters 2025, 25, 7, 2678-2683 **(Letter)** Subscribed

Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT


1/χ
T_N
Θ_{CW}
$J_\perp$
$J_\times$
Frustrate
FerroMagnet
$OsFeP_4$
Spin Lattice
Antiferro-Magnet
$-J_{//}$

Electronic Regulation Engineering of $(NH_4)_{0.25}WO_3$ Anode Enables Fast and Stable Rocking-Chair Zinc-Ion Batteries

Dandan Ling, Guofu Tian, Daohong Zhang*, and Qiufan Wang*

Nano Letters 2025, 25, 7, 2684-2692 **(Letter)** Subscribed

Publication Date (Web): February 6, 2025

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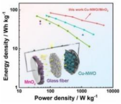
ABSTRACT



Control the Gene Delivery and Anticancer Efficacy of Peptides through Chiral Modulation

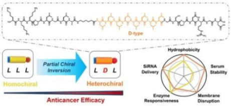
Zixuan Wang, Lei Yue, Jiwei Min, Huiye Liu, Yexi Zhang, Yaohui Du, Rongxin Su, Wei Qi, and Yuefei Wang*

Nano Letters 2025, 25, 7, 2693-2701 **(Letter)** Subscribed

Publication Date (Web): February 5, 2025

Abstract Full text PDF

ABSTRACT


D-type
L L L
Partial Chiral Inversion
L D L
Homochiral
Heterochiral
Anticancer Efficacy
Hydrophobicity
SiRNA Delivery
Serum Stability
Enzyme Responsiveness
Membrane Disruption

Vanadium-Doped Hafnium Oxide: A High-Endurance Ferroelectric Thin Film with Demonstrated Negative Capacitance

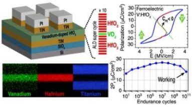
Ehsan Ansari*, Niccolò Martinolli, Emeric Hartmann, Anna Varini, Igor Stolichnov, and Adrian Mihai Ionescu*

Nano Letters 2025, 25, 7, 2702-2708 **(Letter)** Open Access

Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT



Cavity-Enhanced Circular Dichroism in a van der Waals Antiferromagnet

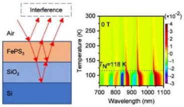
Shuliang Ren, Simin Pang, Shan Guan, Yu-Jia Sun, Tian-Yu Zhang, Nai Jiang, Jiaqi Guo, Houzhi Zheng, Jun-Wei Luo, Ping-Heng Tan, Chao Shen*, and Jun Zhang*

Nano Letters 2025, 25, 7, 2709-2715 **(Letter)** Subscribed

Publication Date (Web): February 6, 2025

Abstract Full text PDF

ABSTRACT



High-Precision Attention Mechanism for Machine Vision Enabled by an Artificial Optoelectronic Memristor Synapse

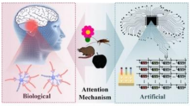
Lixun Wang, Yuejun Zhang*, Zhecheng Guo, Xiaohan Meng, Qikang Li, Mengfan Xu, Runsheng Gao, Xiaojian Zhu*, and Pengjun Wang*

Nano Letters 2025, 25, 7, 2716-2724 **(Letter)** Subscribed

Publication Date (Web): February 5, 2025

Abstract Full text PDF

ABSTRACT


Biological
Attention Mechanism
Artificial

Cell-Interface-Deciphering Lipid Nanotablet for Nanoparticle Logic Gate-Based Real-Time Single-Cell Analysis

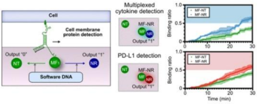
So Young Choi, Young Suk Yu, Eunhye Park, Sung Hee Baek, and Jwa-Min Nam*

Nano Letters 2025, 25, 7, 2725-2731 **(Letter)** Subscribed

Publication Date (Web): January 15, 2025

Abstract Full text PDF

ABSTRACT


Cell
Cell membrane protein detection
Output "0"
NT
MF1
Output "1"
NR
Software DNA
Multiplexed cytokine detection
MF-NR
Output "1"
PD-L1 detection
Binding ratio
MF-NT
MF-NR
Time (min)

Efficient Conversion of CO_2 to Ethanol by Utilizing the Topological Surface States of Rare-Earth Cuprates

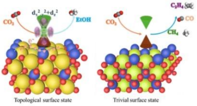
Mingda Wang, Minxing Shu, Mi Long, Wenzhe Shan*, and Hongming Wang*

Nano Letters 2025, 25, 7, 2732-2740 **(Letter)** Subscribed

Publication Date (Web): February 5, 2025

Abstract Full text PDF

ABSTRACT


CO_2
EtOH
C_2H_4
CO
CH_4
Topological surface state
Trivial surface state

Engineering Titanium Dioxide/Titanocene-Polysulfide Interface for Flexible, Optical-Modulated, and Thermal-Tolerant Multilevel Memristor

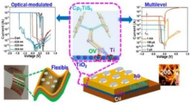
Panke Zhou, Xi Lin, Yiqun Gao, Xiaoli Lin, Tao Zeng, Haohong Li*, Xiong Chen*, and Huidong Zheng*

Nano Letters 2025, 25, 7, 2741-2748 **(Letter)** Subscribed

Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT


Optical-modulated
Cp_2TiS_5
Multilevel
Current (A)
Voltage (V)
OV
Ti
TiO_2
Flexible
Ag
Cu
200

Room Temperature, Cavity-Free Capacitive Strong Coupling to Mechanical Motion

Denise Puglia*, Rachel Odessey, Peter S. Burns, Niklas Luhmann, Silvan Schmid, and Andrew P. Higginbotham*

Nano Letters 2025, 25, 7, 2749-2755 **(Letter)** Subscribed

Publication Date (Web): February 6, 2025

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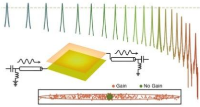
ABSTRACT


Gain
No Gain

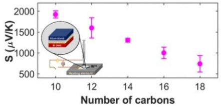
Unusually High Thermopower in Molecular Junctions from Molecularly Induced Quantized States in Their Semimetal Leads

Mor Cohen Jungerman, Shachar Shmueli, Pini Shekhter, and Yoram Selzer*

Nano Letters 2025, 25, 7, 2756-2762 **(Letter)** Open Access
Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT



Theory of Thermopolarization Effect

Yugo Onishi*, Hiroki Isobe, Atsuo Shitade, and Naoto Nagaosa

Nano Letters 2025, 25, 7, 2763-2768 **(Letter)** Subscribed
Publication Date (Web): February 10, 2025

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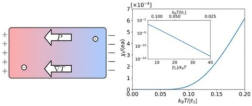

Cathode–Electrolyte Interphase of Ni-Rich Layered Oxides: Evolving Structure and Implication on Stability

Menghao Li, Xuming Yang, Xianbin Wei, Yuanmin Zhu, Xueliang Sun, and M. Danny Gu*

Nano Letters 2025, 25, 7, 2769-2776 **(Letter)** Subscribed
Publication Date (Web): February 11, 2025

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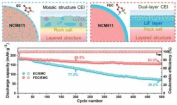
EC
Mosaic structure CEI
NCM811
Rock salt
Layered structure
FEC
Dual-layer CEI
LiF layer
Discharge capacity (mAh g⁻¹)
Coulombic efficiency (%)
Cycle number
EC/EMC
FEC/EMC
77.2%
39.2%

Low-Contrast BIC Metasurfaces with Quality Factors Exceeding 100,000

Keisuke Watanabe*, Tadaaki Nagao, and Masanobu Iwanaga

Nano Letters 2025, 25, 7, 2777-2784 **(Letter)** Open Access
Publication Date (Web): February 6, 2025

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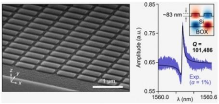
ABSTRACT



Proposed Optical Manipulation of Nanoparticles to Access and Select Emission Lines

Takao Horai, Takudo Wada, Yoshiki Saito, Yuto Makino, Masaaki Ashida, and Hajime Ishihara*

Nano Letters 2025, 25, 7, 2785-2792 **(Letter)** Subscribed
Publication Date (Web): January 22, 2025

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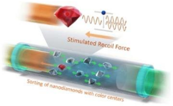
ABSTRACT


Stimulated Recoil Force
Sorting of nanodiamonds with color centers

Solar-Driven High-Rate Ammonia Production from Wastewater Coupled with Plastic Waste Reforming

Wonsik Jang, Jongkyoung Kim, Hye Seung Kim, Jiseong Ha, Jin Ho Lee, Hyoseok Kim, Sangmi Park, Seunghyun Lee, Jae Sung Lee, Myoung Hoon Song*, and Seungho Cho*

Nano Letters 2025, 25, 7, 2793-2802 **(Letter)** Subscribed
Publication Date (Web): January 28, 2025

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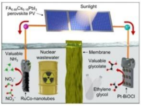
FA₀.₈₅Cs₀.₁₅PbI₃ perovskite PV
Sunlight
Valuable NH₃
Nuclear wastewater
Membrane
Valuable glycolate
NO₂⁻
NO₃⁻
RuCo-nanotubes
Ethylene glycol
Pt-BiOCl

Improvement of P-Type Contact in WSe$_2$ Field-Effect Transistors via Defect Engineering

Heng Zhang, Jialei Miao, Cheng Zhang, Xinlong Zeng, Tianjiao Zhang, Tingting Chen, Junjie Wu, Kaige Gao, Wei Xu*, Xiaowei Zhang*, and Yuda Zhao*

Nano Letters 2025, 25, 7, 2803-2809 **(Letter)** Subscribed
Publication Date (Web): February 4, 2025

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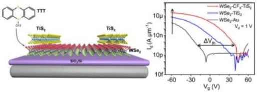
ABSTRACT



MXene Membranes Inserted with Tannic Acid Etched MOF Nanocrystals for Ultrafast Water Permeation: Elucidating the Water Transport Mechanism in Nanoconfined Interlaminar Channels

Xiaowei Zhu, Fangjian Liu, Lijun Meng, Qieyuan Gao, Xi Wang, Mengmeng Lou, Xiangmin Xu, Wei Zhang, Fang Li*, and Bart Van der Bruggen

Nano Letters 2025, 25, 7, 2810-2819 **(Letter)** Subscribed
Publication Date (Web): February 5, 2025

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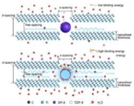
d-spacing
s-spacing
low binding energy
free spacing
nanosheet thickness
high binding energy
C
Ti
ZIF-8
TZIF-8
H$_2$O

Iterative Design of a Prodrug Nanocarrier for Cell Cycle Arrest, Immune Modulation, and Enhanced T Cell Infiltration for Colon Cancer Therapy

Zhenhan Feng, Mengmeng Qin, Jinhong Jiang, Meng Wang, Tianyu Zhang, Yibo Li, Xiangsheng Liu, Jinfang Zhang, Hubing Shi, Yuliang Zhao*, and Huan Meng*

Nano Letters 2025, 25, 7, 2820-2830 **(Letter)** Subscribed
Publication Date (Web): February 10, 2025

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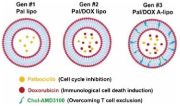
ABSTRACT


Gen #1
Pal lipo
Gen #2
Pal/DOX lipo
Gen #3
Pal/DOX A-lipo
Palbociclib (Cell cycle inhibition)
Doxorubicin (Immunological cell death induction)
Chol-AMD3100 (Overcoming T cell exclusion)

Engineered Shape-Tunable Copper-Coordinated Nanoparticles for Macrophage Reprogramming

Han Gao*, Ruoyu Cheng, Inês Cardoso, Maria Lobita, Idaira Pacheco-Fernández, Raquel Bártolo, Lígia R. Rodrigues, Jouni Hirvonen, and Hélder A. Santos*

Nano Letters 2025, 25, 7, 2831-2840 **(Letter)** Open Access
Publication Date (Web): February 6, 2025

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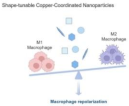
ABSTRACT


Shape-tunable Copper-Coordinated Nanoparticles
M1 Macrophage
M2 Macrophage
Macrophage repolarization

Ultranarrowband Chiral Absorbers in the Visible Region Based on Brillouin Zone Folding Metasurfaces

Seongheon Kim, Heejoo Jang, Jungho Han, Jeheon Lee, and Young Chul Jun*

Nano Letters 2025, 25, 7, 2841-2849 **(Letter)** Subscribed
Publication Date (Web): February 4, 2025

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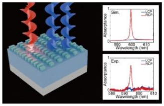
ABSTRACT



Mechanochromic and Conductive Gels Based on Cellulose Nanocrystals for Bioinspired Sensing

Di Lu, Zhen Fang*, and Zhuhui Qiao*

Nano Letters 2025, 25, 7, 2850-2857 **(Letter)** Subscribed
Publication Date (Web): February 7, 2025

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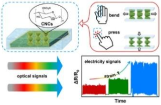
ABSTRACT


CNCs
bend
press
optical signals
electricity signals
strain
ΔR/R$_0$
Time

Magneto-optical Evidence of the Tilting Effect in Coupled Weyl Bands

Seongphill Moon, Yuxuan Jiang*, Jennifer Neu, Theo Siegrist, Mykhaylo Ozerov, Zhigang Jiang*, and Dmitry Smirnov*

Nano Letters 2025, 25, 7, 2858-2863 **(Letter)** Open Access
Publication Date (Web): February 7, 2025

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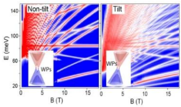
ABSTRACT



Spectrum and Polarization-Resolved Nonlinear Optical Near-Field Imaging of Plasmonic Nanoantennas

Yaxin Liu, Jiajun Wang, Bingbing Zhu, Xinhao Wang, Sheng Zhang, Weifeng Liu, Lei Shi, and Zhensheng Tao*

Nano Letters 2025, 25, 7, 2864-2869 **(Letter)** Subscribed
Publication Date (Web): February 6, 2025

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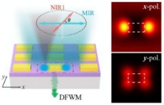
ABSTRACT


NIR1
MIR
θ
x-pol.
y-pol.
y
x
DFWM

Plasmonic Light Emission by Inelastic Charge Transport in Ultrathin Zinc Oxide/Metal Heterostructures

Henrik Wiedenhaupt, Fabian Schulz, Luis E. Parra López, Adnan Hammud, Youngwook Park, Akitoshi Shiotari, Takashi Kumagai, Martin Wolf, and Melanie Müller*

Nano Letters 2025, 25, 7, 2870-2877 **(Letter)** Open Access
Publication Date (Web): February 4, 2025

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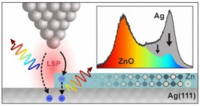
ABSTRACT


Ag
ZnO
LSP
Zn
O
Ag(111)

A Self-Powered Organic Vision Sensor Array for Photopic Adaptation

Yannan Dai, Shenglan Hao, Guangdi Feng, Wei Li, Jianquan Liu, Qiuxiang Zhu*, Hui Peng*, Bobo Tian*, Junhao Chu, and Chungang Duan

Nano Letters 2025, 25, 7, 2878-2886 **(Letter)** Subscribed
Publication Date (Web): February 10, 2025

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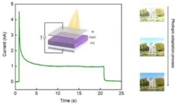
ABSTRACT



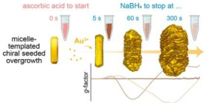
Structural and Optical Characterization of Reaction Intermediates during Fast Chiral Nanoparticle Growth

Kyle Van Gordon, Robin Girod, Francisco Bevilacqua, Sara Bals, and Luis M. Liz-Marzán*

Nano Letters 2025, 25, 7, 2887-2893 **(Letter)** Subscribed
Publication Date (Web): February 5, 2025

Abstract Full text PDF

ABSTRACT


ascorbic acid to start
NaBH4 to stop at ...
0 s
5 s
60 s
300 s
micelle-templated chiral seeded overgrowth
Au3+
g-factor

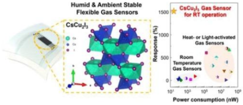
Ambient Stable $CsCu_2I_3$ Flexible Gas Sensors for Reliable NO_2 Detection at Room Temperature

Seung Ju Kim, Gi Baek Nam, Yeong Jae Kim, Tae Hoon Eom, Jung-El Ryu, Hyuk Jin Kim, Hyeon-Ji Lee, and Ho Won Jang*

Nano Letters 2025, 25, 7, 2894-2902 **(Letter)** Subscribed
Publication Date (Web): February 4, 2025

Abstract Full text PDF

ABSTRACT


Humid & Ambient Stable Flexible Gas Sensors
CsCu2I3
Cs
Cu
I
CsCu2I3 Gas Sensor for RT operation
Response (%)
1500
1000
500
0
Heat- or Light-activated Gas Sensors
Room Temperature Gas Sensors
Power consumption (nW)

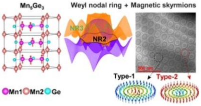
Emergent Magnetic Skyrmions in a Topological Weyl Nodal Ring Semimetal

Hang Li, Bei Ding, Feng Zhou, Jie Chen, Linxuan Song, Wenyun Yang, Yong-Chang Lau, Jinbo Yang, Yue Li, Yong Jiang, and Wenhong Wang*

Nano Letters 2025, 25, 7, 2903-2910 **(Letter)** Subscribed
Publication Date (Web): February 10, 2025

Abstract | Full text | PDF

ABSTRACT


Mn_5Ge_3
Weyl nodal ring + Magnetic skyrmions
NR3
NR2
500 nm
Type-1
Type-2
Mn1
Mn2
Ge

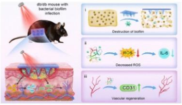
Photothermal Conjugated Polymer Microneedle with Biofilm Elimination and Angiogenesis for Diabetic Wound Healing

Zijuan Wang, Boying Li, Chenyao Nie, Ran Zhang*, Shuyi Qu, Qi Shao, Xin Zhang, Jie Li, Wentai Li, Hao Li, Jian Xiao*, and Chengfen Xing*

Nano Letters 2025, 25, 7, 2911-2921 **(Letter)** Subscribed
Publication Date (Web): February 6, 2025

Abstract | Full text | PDF

ABSTRACT


db/db mouse with bacterial biofilm infection
i
Destruction of biofilm
ii
ROS
IL-6
Decreased ROS
iii
CD31
Vascular regeneration

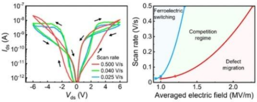
Competing Ferroelectric Polarization and Defect Migration Induced Resistive Switching in β'-In_2Se_3

Yinfeng Long, Saiyu Bu, Han Chen, Kai Liu, Xin Zhou, Shiyu Zhang, Xiaotian Zhang, Teng Zhang, Changxin Chen, Wugang Liao, Kian Ping Loh*, and Lin Wang*

Nano Letters 2025, 25, 7, 2922-2930 **(Letter)** Subscribed
Publication Date (Web): February 10, 2025

Abstract | Full text | PDF

ABSTRACT



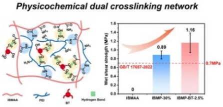
Advanced Dual-Cross-Linking Strategy for Upgrading Formaldehyde-Free Olefin Adhesives

Zhenxuan Liang, Junfang Xue, Qian Yan, Yi Sun, Shaoyu Luo, Yisheng Zhu, and Shifeng Zhang*

Nano Letters 2025, 25, 7, 2931-2938 **(Letter)** Subscribed
Publication Date (Web): February 7, 2025

Abstract | Full text | PDF

ABSTRACT



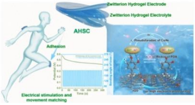
Polydopamine-Mediated Nanofillers Reinforced Zwitterion Hydrogel Electrodes for Supercapacitors in Bioelectronics

Lili Jiang*, Youjian Li, Yuming Cao, Donglin Gan, Fa Zou, Le Yuan, Denghui Zhang, Chaoming Xie*, and Xiong Lu*

Nano Letters 2025, 25, 7, 2939-2948 **(Letter)** Subscribed
Publication Date (Web): February 5, 2025

Abstract | Full text | PDF

ABSTRACT


Zwitterion Hydrogel Electrode
Zwitterion Hydrogel Electrolyte
AHSC
Adhesion
Pseudofaradaic of CoNi
Redox of PDA
rGO
Electrical stimulation and movement matching
Potential (V)
Time (s)

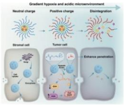
Transcytosis-Triggering Nanoparticles for Overcoming Stromal Barriers and Reversing Immunosuppression in Pancreatic Cancer Combinatorial Therapy

Shilin Zhang, Haoyu You, Hongrui Fan, Yun Chen, Haolin Song, Zhenhao Zhao, Qinjun Chen, Yu Wang, Zonghua Tian, Yuxing Wu, Zheng Zhou, Yun Guo, Boyu Su, Xuwen Li, Ru Jia, Mingzhu Fang, Chen Jiang*, and Tao Sun*

Nano Letters 2025, 25, 7, 2949-2959 **(Letter)** Subscribed
Publication Date (Web): February 6, 2025

Abstract | Full text | PDF

ABSTRACT


Gradient hypoxia and acidic microenvironment
Neutral charge
Positive charge
Disintegration
Stromal cell
Tumor cell
Enhance penetration
GSH
ROS

Ligand-Targeted Ag_9 Cluster Self-Cascade Antioxidants for Enhanced Reactive Oxygen Species Clearance in the Treatment of Inflammatory

Bowel Disease

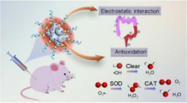
Ya-Meng Xie, Yue Wang, Geng Zhang, Zhi Wang, Hai-Feng Su, Xiqing Cheng, Jiayu Huang, Di Sun*, Wen-Gang Li*, and Qin Kuang*

Nano Letters 2025, 25, 7, 2960-2967 **(Letter)** Subscribed

Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT


Electrostatic interaction
Antioxidation
•OH
Clear
H₂O
O₂•-
SOD
H₂O₂
CAT
O₂
H₂O

Machine Learning Assisted-Intelligent Lactic Acid Monitoring in Sweat Supported by a Perspiration-Driven Self-Powered Sensor

Jing Xu, Yujin Li, Futing Wang, Wangchen Li, Jiajun Zhan, Suping Deng, Changxiao Song, Hongfen Yang, Ren Cai*, and Weihong Tan

Nano Letters 2025, 25, 7, 2968-2977 **(Letter)** Subscribed

Publication Date (Web): February 5, 2025

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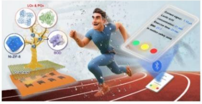
ABSTRACT


LOx & POx
Ni-ZIF-8
SOD

Single-Molecule Amplification-Free Detection of Nucleic Acid Biomarkers from Body Fluids via an Optical Microfiber with a Nanointerface

Pengwei Chen, Xinyu Zhang, Xundi Zhan, Yunyun Huang*, Haotian Wu, Chenghao Zhao, Anding Xu*, and Bai-Ou Guan*

Nano Letters 2025, 25, 7, 2978-2987 **(Letter)** Subscribed

Publication Date (Web): February 11, 2025

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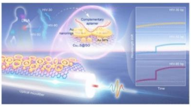
ABSTRACT


Complementary aptamer
Au NPs
Time

Anisotropic Heat Conduction of Silicon Nanocube through Strain Gradient Engineering

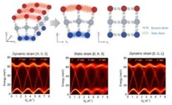
Jun Lyu, Shuo Qiao, and Lin Yang*

Nano Letters 2025, 25, 7, 2988-2995 **(Letter)** Subscribed

Publication Date (Web): February 5, 2025

Abstract Full text PDF

ABSTRACT


Dynamic strain [H, 0, 0]
Static strain [0, K, 0]
Dynamic strain [0, 0, L]

Solution-Processed Near Unit Carbon Dots-Based Deep-Blue Electroluminescent Light-Emitting Diodes with External Quantum Efficiency over 10%

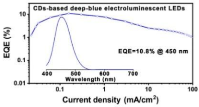
Boyang Wang, Jingkun Yu, Shurong Ding, Hongwei Wang, Yongsheng Hu, and Siyu Lu*

Nano Letters 2025, 25, 7, 2996-3001 **(Letter)** Subscribed

Publication Date (Web): February 7, 2025

Abstract Full text PDF

ABSTRACT



Lensless Polarimetric Imaging and Encryption Enabled by Te/ReSe$_2$ van der Waals Heterostructure Polarization-Sensitive Photodetector

Meifei Chen, Ziqiao Wu, Zhanxiong Qiu, Junhao Peng, Wei Gao, Mengmeng Yang, Le Huang, Jiandong Yao, Yu Zhao, Zhaoqiang Zheng*, Yao Ni*, and Jingbo Li

Nano Letters 2025, 25, 7, 3002-3010 **(Letter)** Subscribed

Publication Date (Web): February 10, 2025

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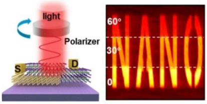
ABSTRACT


light
Polarizer
S
D
60°
30°
0
NANO

Ultrafast Self-Transportation of Multimedia Droplets with a Bioinspired Microspine Array

Meng Meng, Bosen Chai, Konghua Yang*, Jiawei Xiong, Yuchao Luo, Yunhong Liang, Zhihui Zhang, and Chunbao Liu*

Nano Letters 2025, 25, 7, 3011-3019 **(Letter)** Subscribed
Publication Date (Web): February 7, 2025

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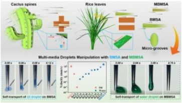
ABSTRACT


Cactus spines
Rice leaves
MBMSA
BMSA
Micro-grooves
Multi-media Droplets Manipulation with BMSA and MBMSA
0.00 s
0.04 s
0.08 s
0.12 s
Velocity (mm/s)
Oil
Water
0.00 s
0.04 s
3.08 s
4.76 s
Self-transport of oil droplet on BMSA
Self-transport of water droplet on MBMSA

Effects of Self-Hybridized Exciton-Polaritons on TMDC Photovoltaics

Adam D. Alfieri, Tobia Ruth, Cheryl Lim, Jason Lynch, and Deep Jariwala*

Nano Letters 2025, 25, 7, 3020-3026 **(Letter)** Subscribed
Publication Date (Web): February 6, 2025

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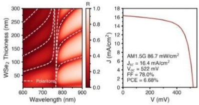
ABSTRACT



ADDITIONS AND CORRECTIONS

Correction to “Ultrasmall Prussian Blue Nanozyme Attenuates Osteoarthritis by Scavenging Reactive Oxygen Species and Regulating Macrophage Phenotype”

Zhiguo Qin, Xiaofei Li, Peng Wang, Qian Liu, Yan Li, Aihua Gu, Qing Jiang*, and Ning Gu*

Nano Letters 2025, 25, 7, 3027 **(Addition/Correction)** Subscribed
Publication Date (Web): February 7, 2025

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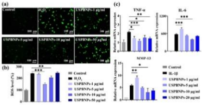

MASTHEADS

Issue Editorial Masthead

Nano Letters 2025, 25, 7, XXX-XXX **(Article)** Subscribed
Publication Date (Web): February 19, 2025

First Page PDF

Issue Publication Information

Nano Letters 2025, 25, 7, XXX-XXX **(Article)** Subscribed
Publication Date (Web): February 19, 2025

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