Nanoscale

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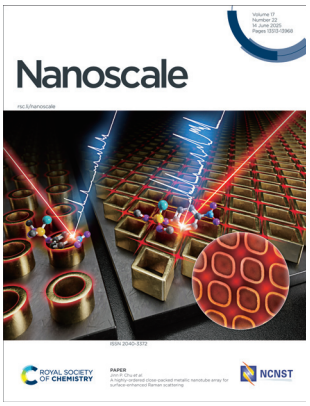
IN THIS ISSUE

ISSN 2040-3372 CODEN NANOHL 17(22) 13513–13968 (2025)



Cover
See Jinn P. Chu *et al.*, pp. 13685–13697.

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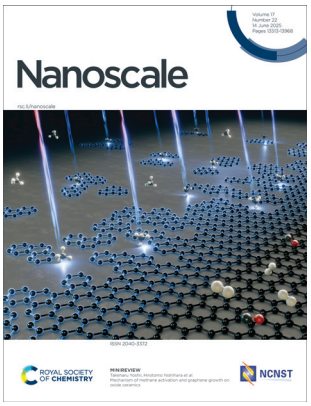

Inside cover
See Takeharu Yoshii, Hirotomo Nishihara *et al.*, pp. 13646–13652.

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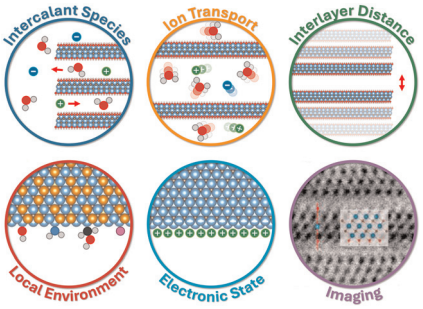
EDITORIAL

REVIEWS



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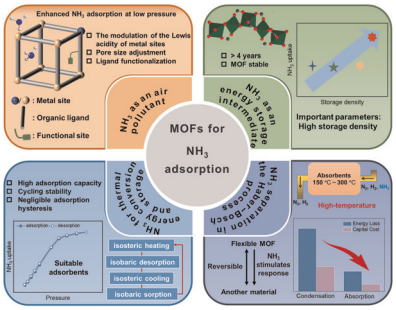
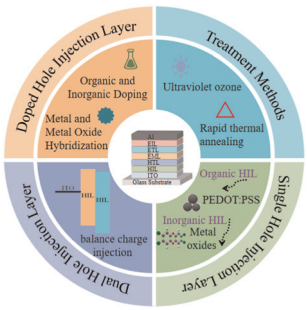
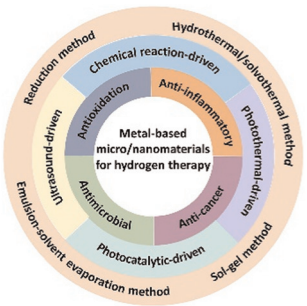




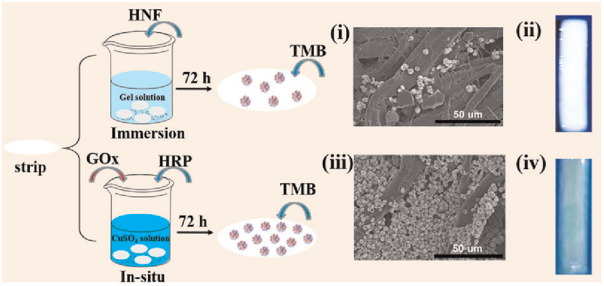


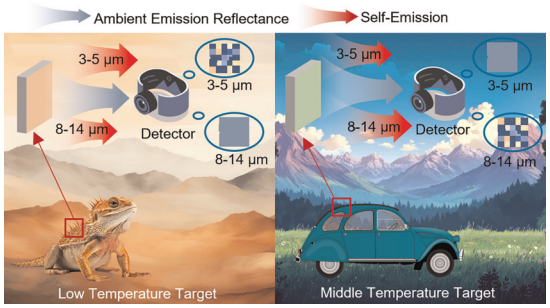
MINIREVIEWS

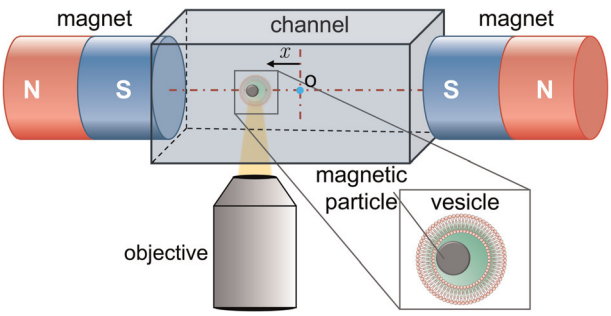
COMMUNICATION

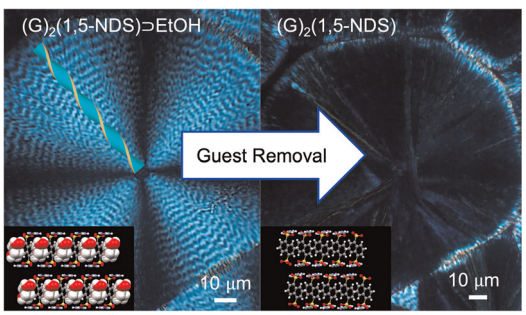
PAPERS

PAPERS



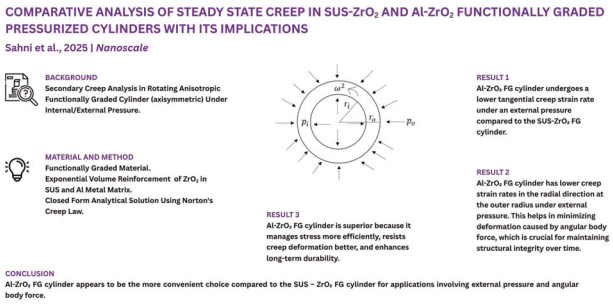






PAPERS

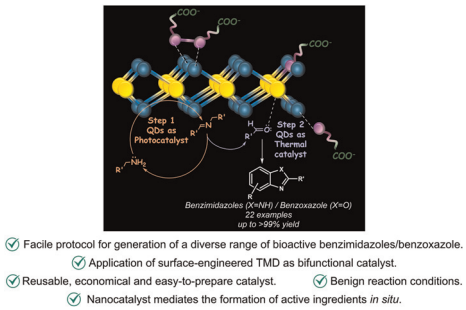
13737



Comparative analysis of steady-state creep in SUS-ZrO_2 and Al-ZrO_2 functionally graded pressurized cylinders and its implications

Manoj Sahni,* Parth Dinesh Mehta and Sandeep Kumar Paul

13746

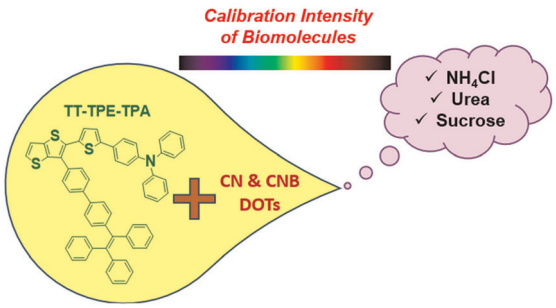


✓ Facile protocol for generation of a diverse range of bioactive benzimidazoles/benzoxazole.
✓ Application of surface-engineered TMD as bifunctional catalyst.
✓ Reusable, economical and easy-to-prepare catalyst. ✓ Benign reaction conditions.
✓ Nanocatalyst mediates the formation of active ingredients *in situ*.

Thiolated molybdenum diselenide quantum dots as a bifunctional catalyst towards the synthesis of benzimidazoles

Komal Jaiswal, Rushikesh Jagtap and Mrinmoy De*

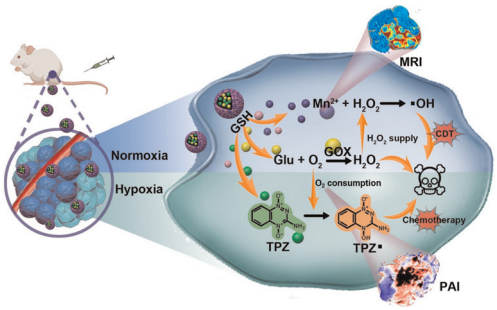
13756



Thienothiophene-based quantum dots: calibration of photophysical properties *via* carbon dot and biomolecular interactions

Recep Isci,* Ozge Ibis, Garen Suna, Caner Unlu* and Turan Ozturk*

13767



Smart self-assembly of a multifunctional theranostic nanozyme for self-enhanced precise chemo/chemodynamic therapy

Jin Tao, Junhui Wei, Junnan Kan, Kai Qi, Tingting Wang, Ailing Wang, Wenxin Pei, Haiyan Gao, Caixia Yang* and Xianglin Li*

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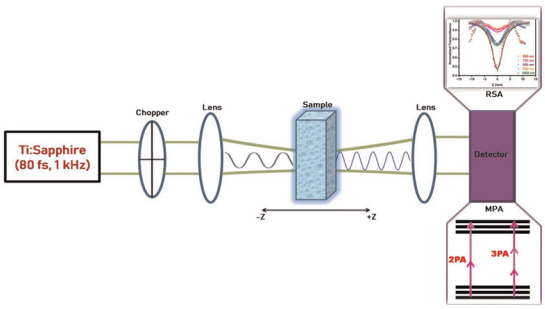
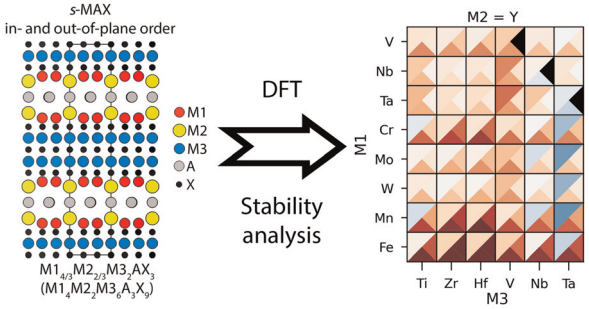
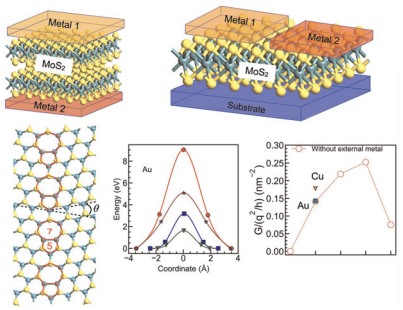
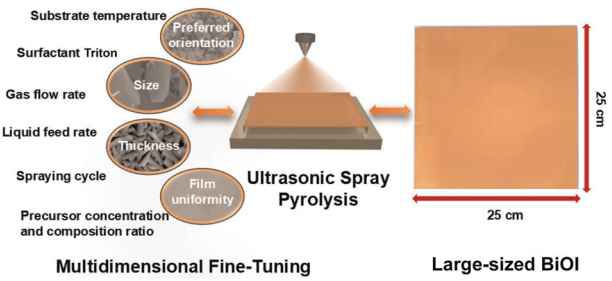








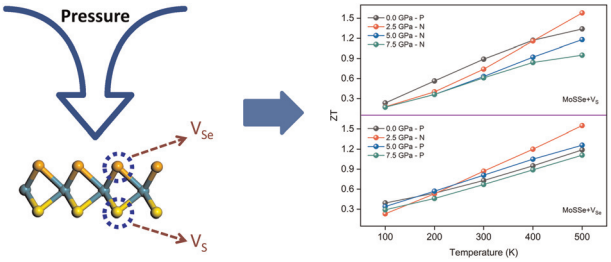
PAPERS

PAPERS

13861

Effect of pressure on the thermoelectric performance of monolayer Janus MoSSe materials with different native vacancy defects

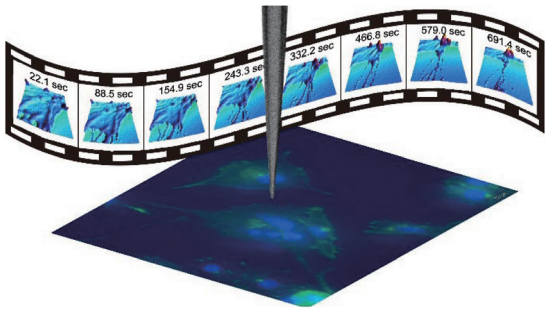
Yuan Shang, Xiaopeng Pan, Yanxing Jia, Yuqiang Wu and Mengtao Sun*



13869

Nanoscale structural dynamics of cell edges in breast tumour cells revealed by scanning ion conductance microscopy

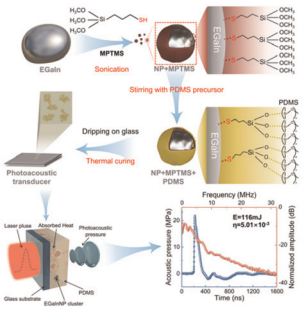
Masahiro Yamazaki, Linhao Sun, Tatsunori Nishimura, Tsunaki Hongu, Shigeyuki Takamatsu, Toshifumi Gabata, Noriko Gotoh* and Shinji Watanabe*



13880

High-efficiency photoacoustic transducers based on plasmonic EGaIn liquid metal nanoparticles

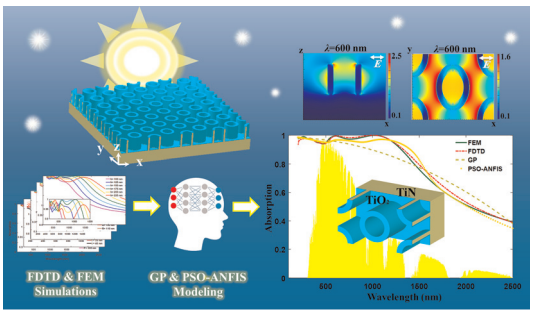
Cheng Luo, Rui Zhou, Yihao Li, Min Li, Xiaoyan Wen, Ming-Yu Li, Shuo Deng, Sisi Liu, Hongyun Gao* and Haifei Lu*



13888

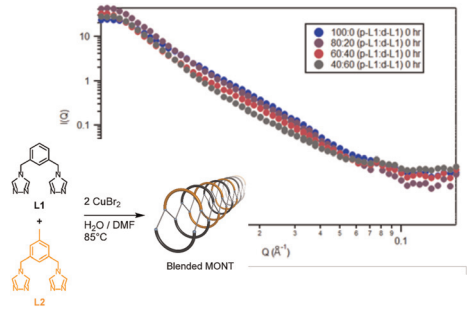
Machine-learning-empowered FDTD/FEM simulations for predictive solar energy absorption in plasmonic metamaterial nanocavity arrays

Zahra Ashrafi-Peyman, Amir Dashti, Amir Jafargholi, John L. Zhou* and Alireza Z. Moshfegh*



PAPERS

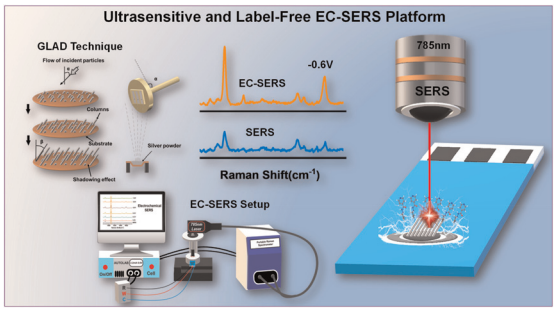
13905



Insights into the copolymerization of metal–organic nanotubes from ligand mixtures using small angle neutron scattering

Md Ashraful Haque, Jacob A. Barrett, Xian B. Carroll, David M. Jenkins* and Mark D. Dadmun*

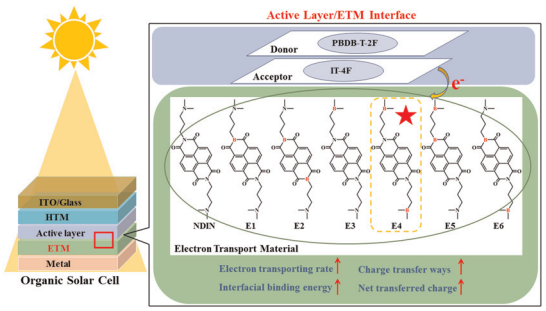
13915



Potential-modulated SERS profiling *via* GLAD-fabricated Ag nanorod arrays for ultrasensitive and label-free spectroelectrochemical sensing

Lakshay Bhardwaj, Jyoti Yadav and J. P. Singh*

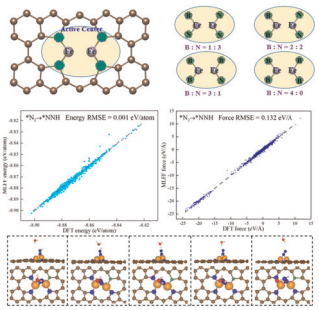
13929



Boron-containing electron transport materials based on naphthalene diimide for organic solar cells: a theoretical study

Shu-Pu Yao, Jie Yang,* Qian Guo, Xiao-Juan Yang and Quan-Song Li*

13939



Exploring dual-iron atomic catalysts for efficient nitrogen reduction: a comprehensive study on structural and electronic optimization

Zhe Zhang,* Wenxin Ma, Jiajie Qiao, Xiaoliang Wu, Shaowen Yu, Weiye Hou, Xiang Huang, Rubin Huo, Hongbo Wu* and Yusong Tu*

13951

Cuticular proteins (crusticuls) affect 3D chitin bundle nanostructure

Shai A. Shaked, Simy Weil, Rivka Manor, Eliahu D. Aflalo, Sharon Moscovitz, Nitzan Maman, Raquel Maria, Benjamin Kruppke, Thomas Hanke, Jerry Eichler, Barak Ratzker, Maxim Sokol and Amir Sagi*