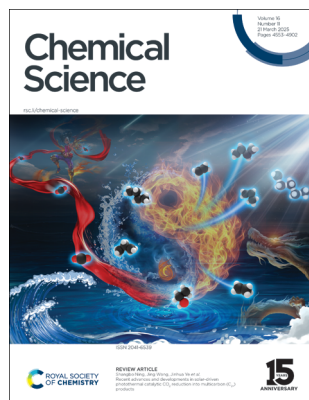


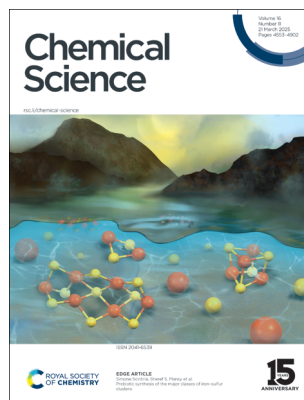
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See Shangbo Ning, Jing Wang, Jinhua Ye *et al.*, pp. 4568–4594. Image reproduced by permission of Shangbo Ning and Jinhua Ye from *Chem. Sci.*, 2025, **16**, 4568.



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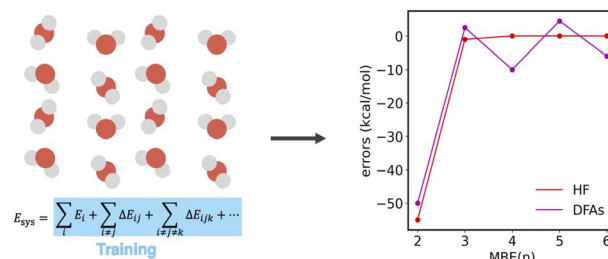
See Simone Scintilla, Sheref S. Mansy *et al.*, pp. 4614–4624. Image reproduced by permission of Sheref S. Mansy from *Chem. Sci.*, 2025, **16**, 4614. Artwork created by Annie Tykwinski.

COMMENTARY

4566

A focus on delocalization error poisoning the density-functional many-body expansion

Barbaro Zulueta and John A. Keith*

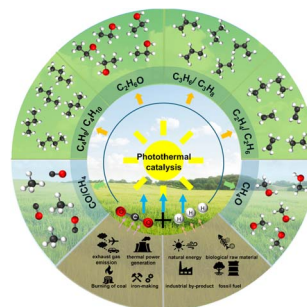


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Recent advances and developments in solar-driven photothermal catalytic CO₂ reduction into multicarbon (C₂₊) products

Xiuting Wu, Senlin Zhang, Shangbo Ning,* Chuanyun Yang, Ling Li, Linjun Tang, Jing Wang,* Ruixiang Liu, Xingyu Yin, Ying Zhu, Shaohua Chen and Jinhua Ye*



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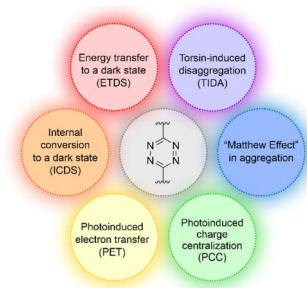
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REVIEWS

4595

Unveiling the photophysical mechanistic mysteries of tetrazine-functionalized fluorogenic labels

Tianruo Shen and Xiaogang Liu*

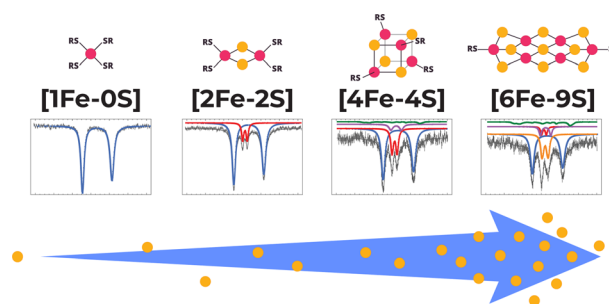


EDGE ARTICLES

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Prebiotic synthesis of the major classes of iron–sulfur clusters

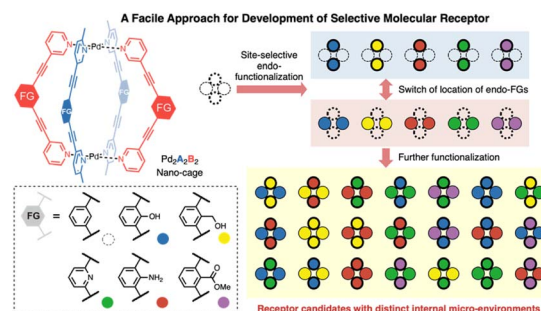
Simone Scintilla,* Daniele Rossetto, Martin Clémancey, Julia Rendon, Antonio Ranieri, Graziano Guella, Michael Assfalg, Marco Borsari, Serge Gambarelli, Geneviève Blondin and Sheref S. Mansy*



4625

Precise functionalization in nano-confinement: a bottom-up approach to the evolution of selective molecular receptors

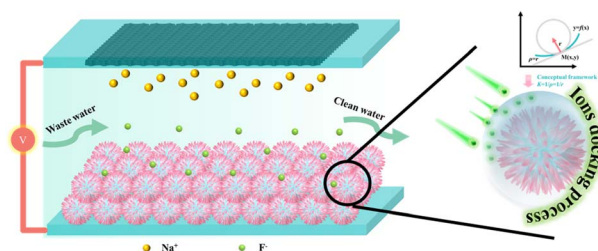
Ya-Mei Tan, Lu-Mei Zhang, Qixia Bai, Zhe Zhang, Pingshan Wang and Qi Zhang*



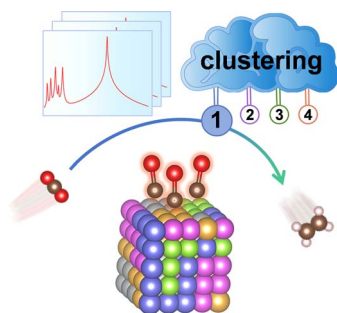
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Curvature enhanced NH₂-MIL-53(Al) electrode for boosting ion diffusion and capacitive deionization defluorination

Fei Yu, Yidi Yang, Peng Liu and Jie Ma*



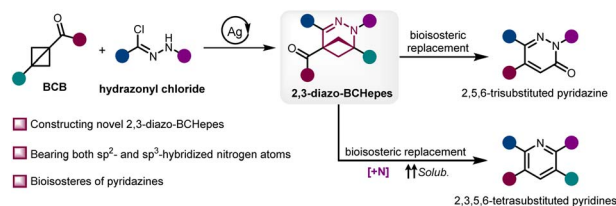
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Spectra-based clustering of high-entropy alloy catalysts: improved insight over use of atomic structure

Huirong Li, Donglai Zhou, Pieter E. S. Smith, Edward Sharman, Hengyu Xiao, Song Wang,* Yan Huang* and Jun Jiang*

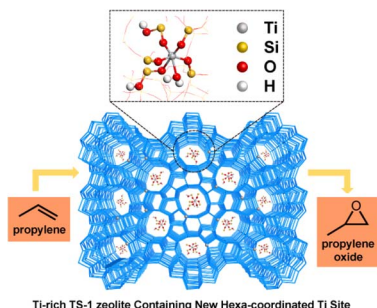
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Silver-mediated formal $[4\pi + 2\sigma]$ cycloaddition reactions of bicyclobutanes with nitrile imines: access to 2,3-diazobicyclo[3.1.1]heptenes

Huijuan Liao, Jianyang Dong,* Xuechen Zhou, Qin Jiang, Zishan Lv, Fang Lei and Dong Xue*

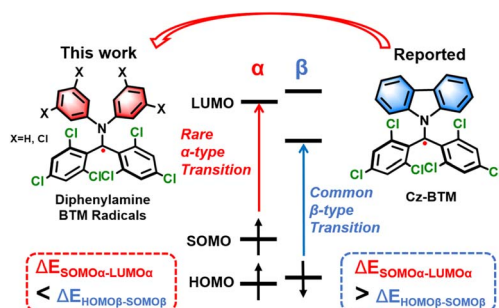
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Ethanol-assisted synthesis of titanium-rich TS-1 zeolite: a new hexa-coordinated Ti site for efficient propylene epoxidation

Dapeng Hao, Xintong Li, Guangyuan He, Risheng Bai, Yang Bai, Tianjun Zhang, Lisu Bai, Jialiang Li, Qiang Zhang, Donghai Mei, Zhaochi Feng* and Jihong Yu*

4668



Stable luminescent diphenylamine biphenylmethyl radicals with α -type $D_0 \rightarrow D_1$ transition and antiferromagnetic properties

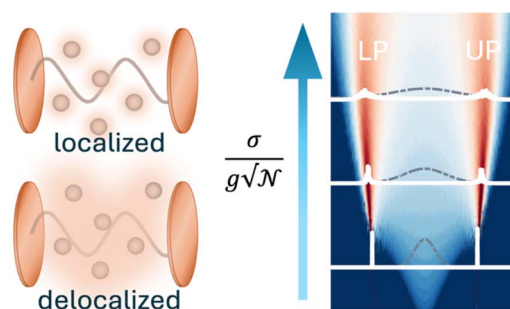
Shengxiang Gao, Chunxiao Wu, Ming Zhang and Feng Li*



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Unlocking delocalization: how much coupling strength is required to overcome energy disorder in molecular polaritons?

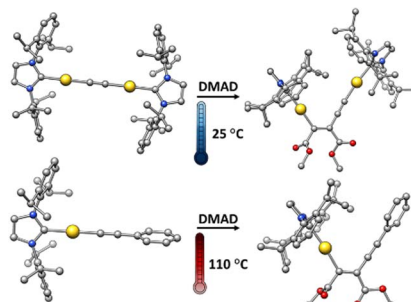
Tianlin Liu, Guoxin Yin and Wei Xiong*



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Stepwise alkyne insertion in Au(I) acetylides: influence of the nuclearity

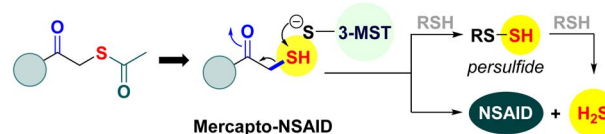
Juan Cayuela-Castillo, Francisco J. Fernández-de-Córdova, Matthew S. See, Israel Fernández* and Pablo Ríos*



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Mercapto-NSAIDs generate a non-steroidal anti-inflammatory drug (NSAID) and hydrogen sulfide

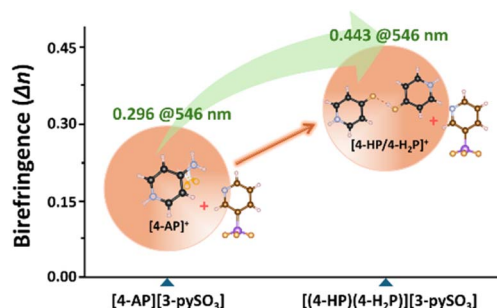
Simran M. Gupta, Pratiksha S. Mohite and Harinath Chakrapani*



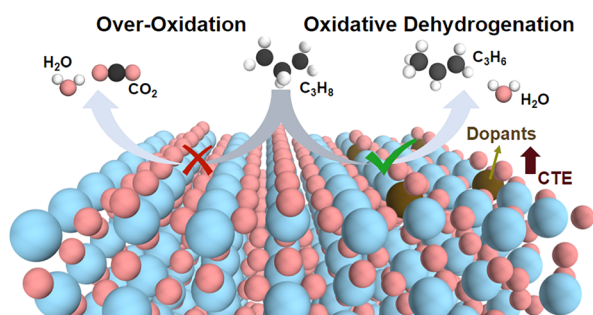
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Synergistic engineering of ultraviolet metal-free crystals with exceptional birefringence via pyridine-derived dimers

Jiachen Lu and Kang Min Ok*



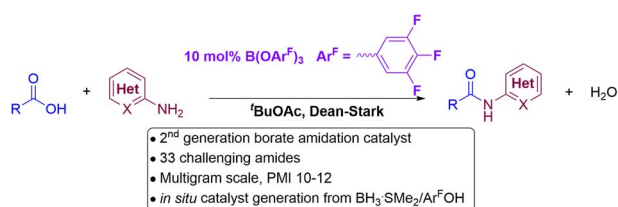
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Role and regulation of surface oxygen vacancies in vanadium-based oxides for chemical looping oxidative dehydrogenation of propane

Dehui Luo, Ran Luo, Xianhui Wang, Xin Chang, Tingting Yang, Sai Chen, Zhi-Jian Zhao* and Jinlong Gong*

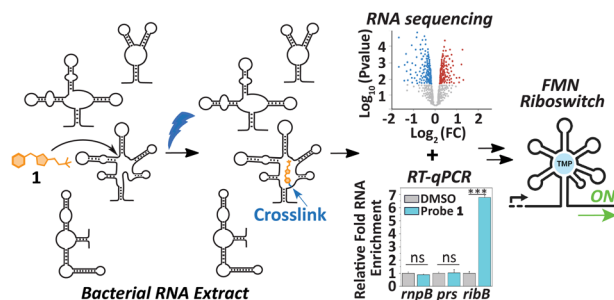
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Borate-catalysed direct amidation reactions of coordinating substrates

Richard J. Procter, Carla Alamillo-Ferrer, Usman Shabbir, Phyllida Britton, Dejan-Krešimir Bučar, Alexandre S. Dumon, Henry S. Rzepa,* Jordi Burés,* Andrew Whiting* and Tom D. Sheppard*

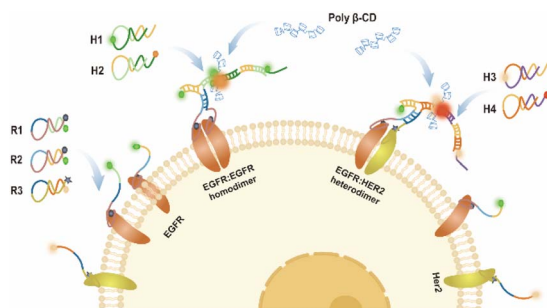
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Chemotranscriptomic profiling with a thiamine monophosphate photoaffinity probe

Stefan Crielaard, Casper F. M. Peters, Alexandar Slivkov, Daphne A. L. van den Homberg and Willem A. Velema*

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A supramolecular FRET signal amplification nanoprobe for high contrast and synchronous *in situ* imaging of cell surface receptor homodimers/heterodimers

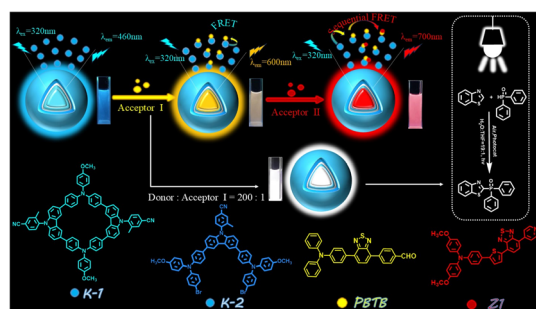
Ya Wang, Feng Yao, Lulu Song, Mengpan Zhang, Zitong Gong, Yunli Zhao, Yamin Xiong* and Leiliang He*



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Novel supramolecular artificial light-harvesting systems based on AIE-active macrocycles for efficient white-light photocatalysis in water

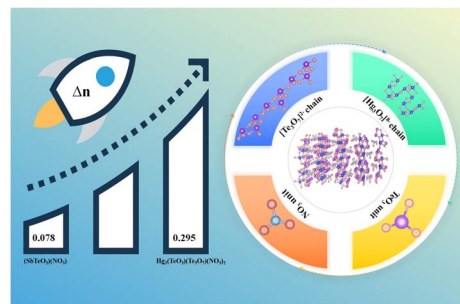
Jun-Cheng Yang, Ke Chen, Guo-Ling Zhang, Chunxuan Qi, Hai-Tao Feng* and Ben Zhong Tang*



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"All-four-in-one": a novel mercury tellurite–nitrate $\text{Hg}_3(\text{TeO}_3)(\text{Te}_3\text{O}_7)(\text{NO}_3)_2$ exhibiting exceptional optical anisotropy

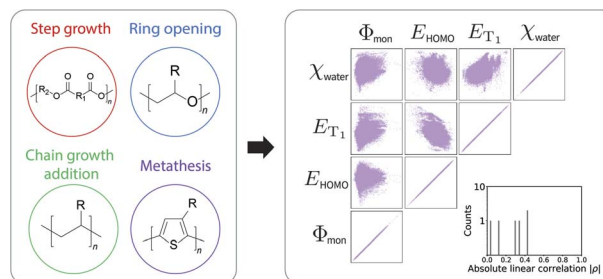
Ru-Ling Tang,* Yi-Lei Lv, Liang Ma, Bing-Wei Miao, Wenlong Liu and Sheng-Ping Guo*



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Functional monomer design for synthetically accessible polymers

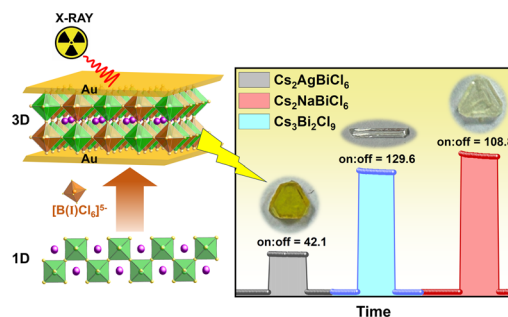
Seonghwan Kim, Charles M. Schroeder and Nicholas E. Jackson*



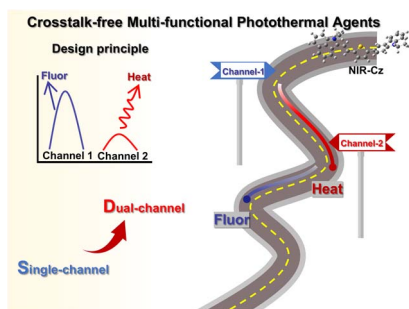
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Highly stable bismuth-chloride perovskite X-ray direct detectors with an ultralow detection limit

Haoyu Chen, Qingyun Han, Haoming Qin, Yueqi Shen, Huijun Lv, Yan Liu, Liping Du, Yong Wang, Yihui He* and Weihua Ning*



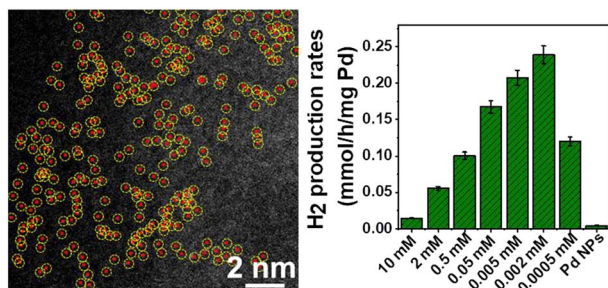
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Construction of crosstalk-free multi-functional phototherapeutic agents

Lixuan Dai, Wenxiu Li, Xiaoli Zhong, Mingguang Ren, Tony D. James* and Weiying Lin*

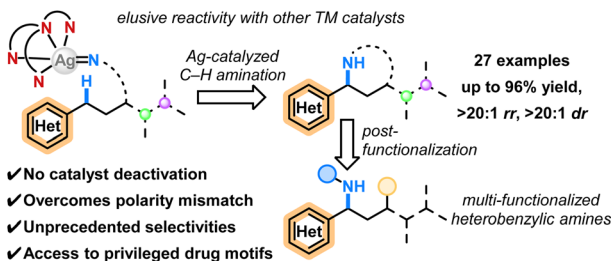
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Pd single atoms on g-C₃N₄ photocatalysts: minimum loading for maximum activity

Velu Jeyalakshmi, Siming Wu, Shanshan Qin, Xin Zhou, Bidyut Bikash Sarma, Dmitry E. Doronkin, Jan Kolařík, Miroslav Šoós and Patrik Schmuki*

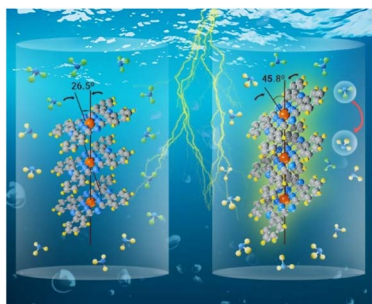
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Site- and stereoselective silver-catalyzed intramolecular amination of electron-deficient heterobenzyl C-H bonds

Tuan Anh Trinh, Stanislav Cherempei, Daniel S. Rampon and Jennifer M. Schomaker*

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Controlling electrocatalytic nitrate reduction efficiency by utilizing dπ-pπ interactions in parallel stacking molecular systems

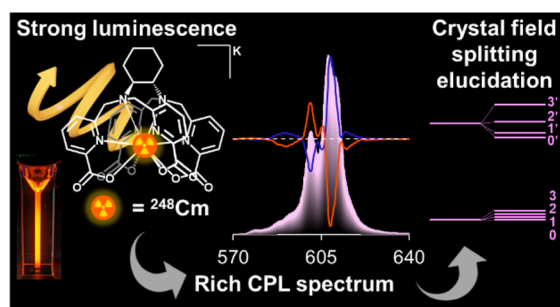
Sourav Bhowmick, Ashadul Adalder, Abhishek Maiti, Samadhan Kapse, Ranjit Thapa, Supriya Mondal and Uttam Kumar Ghora*



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Room temperature crystal field splitting of curium resolved by circularly polarized luminescence spectroscopy

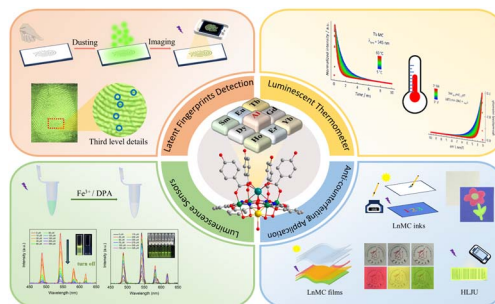
Joshua J. Woods, Appie Peterson, Joseph A. Adewuyi, Rachael Lai, Jennifer N. Wacker, Rebecca J. Abergel* and Gaël Ung*



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A novel $\text{Ln}^{3+}/\text{Al}^{3+}$ metallacrown multifunctional material for latent fingerprint detection, luminescent thermometers and luminescent sensors

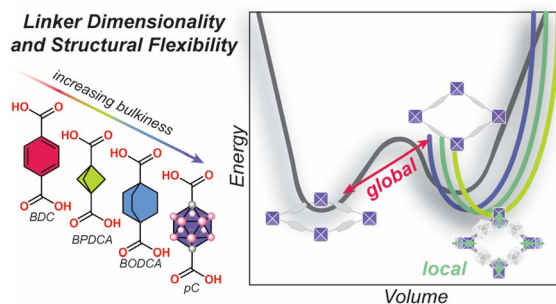
Han Yan, Claudia M. S. Calado, Hao Wang, Muralee Murugesu* and Wen-Bin Sun*



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Exceeding flexpectations: a combined experimental and computational investigation of structural flexibility in 3-dimensional linker-based metal-organic frameworks

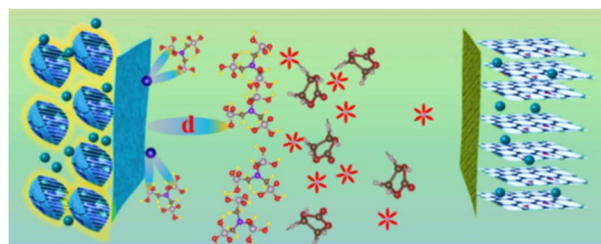
Courtney S. Smoljan, Filip Formalik, Michael L. Barsoum, Kira M. Fahy, Madeleine A. Gaidimas, Florencia A. Son, Haomiao Xie, Karam B. Idrees, Omar K. Farha* and Randall Q. Snurr*

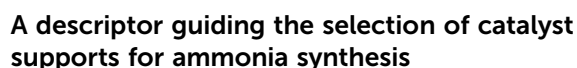


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Inhibiting homogeneous catalysis of cobalt ions towards stable battery cycling of LiCoO_2 at 4.6 V

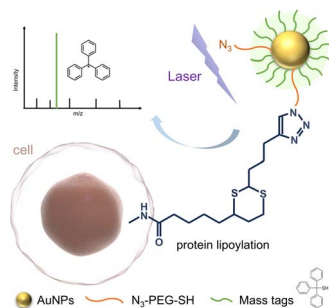
Chao Sun, Bing Zhao, Qing Wen, Xiang-tao Chen, Ning-yun Hong, Jin-bo Zeng, Jia-feng Zhang, Ling-jun Li, Jie-xi Wang, Xia-hui Zhang and Jun-chao Zheng*





Andreas Weilhard, Ilya Popov, Emerson C. Kohlrausch,
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Sadegh Ghaderzadeh, Louise Smith, Mark Isaacs,
James O'Shea, Anabel E. Lanterna, Wolfgang Theis,
David Morgan, Graham J. Hutchings, Elena Besley,
Andrei N. Khlobystov and Jesum Alves Fernandes*

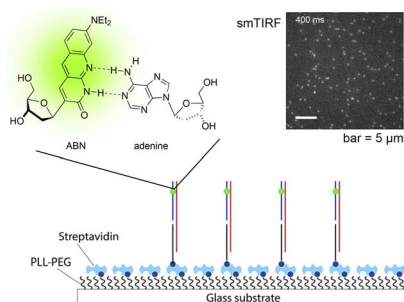
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Chemoselective and laser cleavable probes for *in situ* protein lipoylation detection by laser desorption/ionization mass spectrometry

Qiuyao Du, Xi Yu, Ke Jia, Yijiao Qu, Jing Han, Jiameng Sun,
Duo Shen, Huihui Liu and Zongxiu Nie*

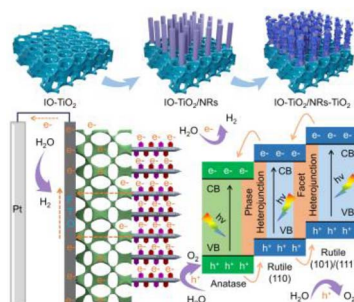
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Single-molecule detection of oligonucleotides using the fluorescent nucleobase analogue ABN

George N. Samaan, Andres Jimenez Salinas, Alexandra E. Bailie, Julian Grim, Julian M. Cizmiciu, Anita C. Jones,* Youngkwang Lee* and Byron W. Purse*

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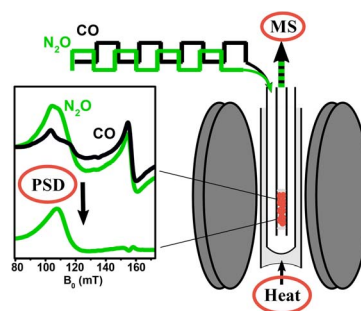
Inverse opal anatase/rutile TiO₂ multi-heterojunctions enable efficient photoelectrochemical water splitting

Bo-Hao Xiao, Chen Huo, Jin-Yu Chen, Ying-Guan Xiao,
Shun-Sheng Cao* and Zhao-Qing Liu*

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Elucidation of site-specific red-ox kinetics in the CO-assisted N_2O decomposition over Fe-ferrierite by combining modulation excitation with *operando* EPR spectroscopy

Jörg W. A. Fischer, Filippo Buttignol, Alberto Garbujó, Davide Ferri* and Gunnar Jeschke*



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Protein-cell conjugates as artificial surface display for interfacial biocatalysis

Xiankun Wu, Henrik Karring, Zhongkai Wang* and Changzhu Wu*

