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See Ming Xue et al., pp. 9557–9565. Image reproduced by permission of Ming Xue from *Chem. Sci.*, 2024, 15, 9557.



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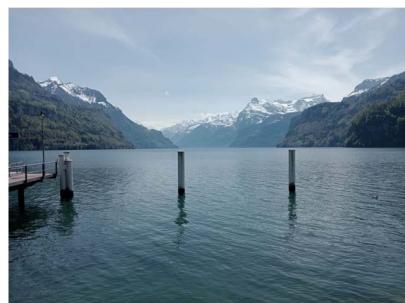
See Stefanie Dehnen et al., pp. 9438–9509. Image reproduced by permission of Stefanie Dehnen from *Chem. Sci.*, 2024, 15, 9438. Sun image: NASA/Goddard/SDO.

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Jesús Mosquera* and Alessandro Bismuto*



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Sarah L. Nordahl and Corinne D. Scown*





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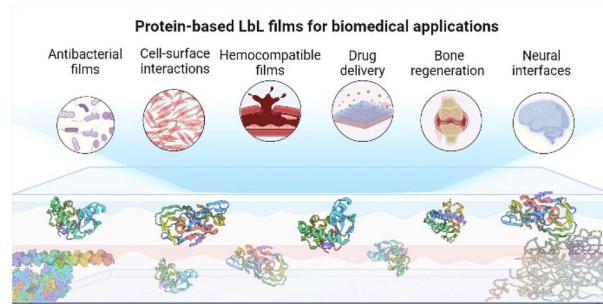
Fundamental questions
Elemental answers

PERSPECTIVES

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Protein-based layer-by-layer films for biomedical applications

Muhammad Haseeb Iqbal,* Halima Kerdjoudj and Fouzia Boulmedais*

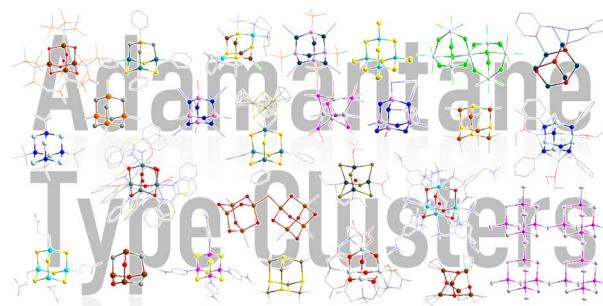


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Adamantane-type clusters: compounds with a ubiquitous architecture but a wide variety of compositions and unexpected materials properties

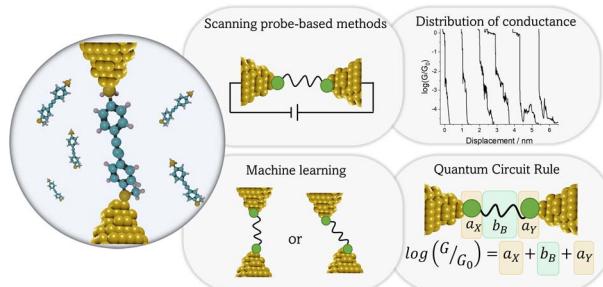
Niklas Rinn, Irán Rojas-León, Benjamin Peerless, Saravanan Gowrisankar, Ferdinand Ziese, Nils W. Rosemann, Wolf-Christian Pilgrim, Simone Sanna, Peter R. Schreiner and Stefanie Dehnhen*



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Methods for the analysis, interpretation, and prediction of single-molecule junction conductance behaviour

Elena Gorenksaia and Paul J. Low*

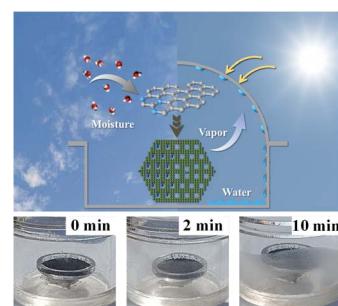


EDGE ARTICLES

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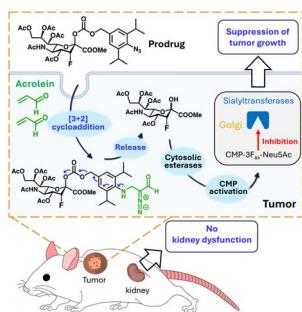
Rapid solar-driven atmospheric water-harvesting with MAF-4-derived nitrogen-doped nanoporous carbon

Jin-Hua Feng, Feng Lu, Zhen Chen, Miao-Miao Jia, Yi-Le Chen, Wei-Hai Lin, Qing-Yun Wu, Yi Li, Ming Xue* and Xiao-Ming Chen



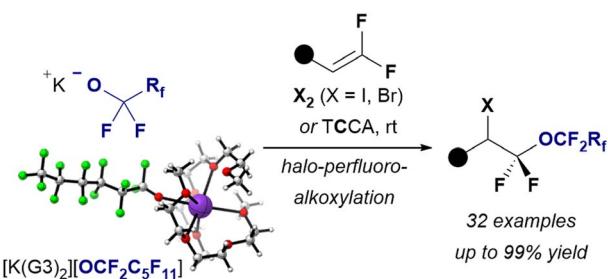
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**Anticancer approach by targeted activation of a global inhibitor of sialyltransferases with acrolein**

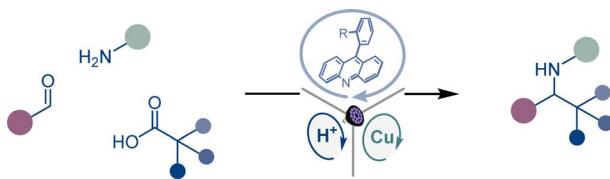
Takatsugu Kasahara, Tsung-Che Chang, Hiromasa Yoshioka, Sayaka Urano, Yasuko Egawa, Michiko Inoue, Tsuyoshi Tahara, Koji Morimoto, Ambara R. Pradipta* and Katsunori Tanaka*

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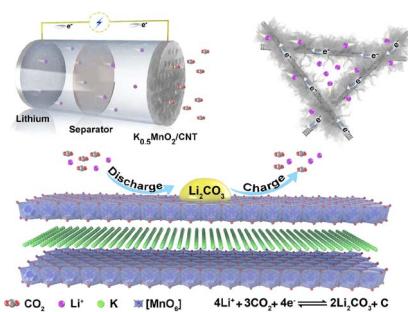
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**Cross-linked $K_{0.5}MnO_2$ nanoflower composites for high rate and low overpotential Li–CO₂ batteries**

Jiawei Wu, Jian Chen, Xiaoyang Chen, Yang Liu,* Zhe Hu, Feijian Lou,* Shulei Chou and Yun Qiao*

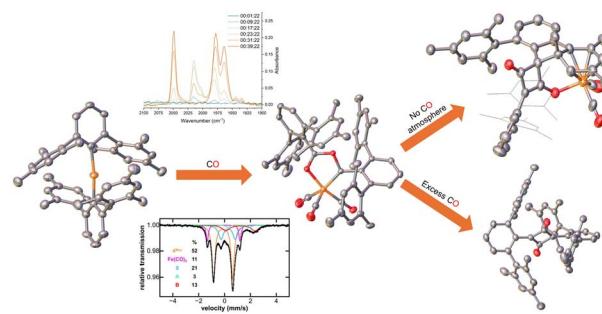


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Mechanistic investigations of the Fe(II) mediated synthesis of squaraines

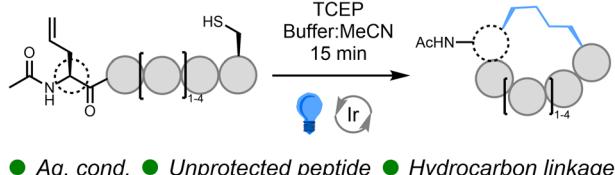
Yu Liu, Nathan T. Coles,* Nathalia Cajiao, Laurence J. Taylor, E. Stephen Davies, Alistair Barbour, Patrick J. Morgan, Kevin Butler, Ben Pointer-Gleadhill, Stephen P. Argent, Jonathan McMaster, Michael L. Neidig, David Robinson and Deborah L. Kays*



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Peptide macrocyclisation via intramolecular interception of visible-light-mediated desulfurisation

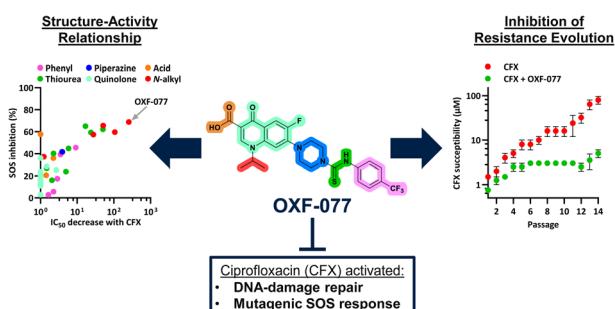
Frances R. Smith, Declan Meehan, Rhys C. Griffiths, Harriet J. Knowles, Peiyu Zhang, Huw E. L. Williams, Andrew J. Wilson and Nicholas J. Mitchell*

Peptide cyclisation via interception of cysteine desulphurisation

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Development of an inhibitor of the mutagenic SOS response that suppresses the evolution of quinolone antibiotic resistance

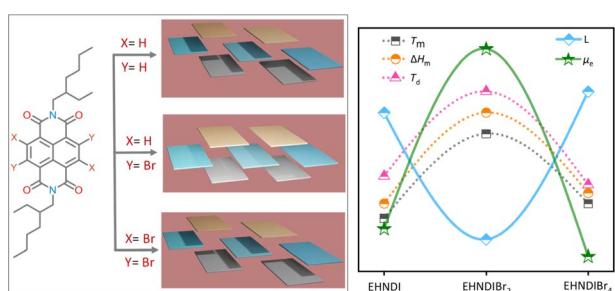
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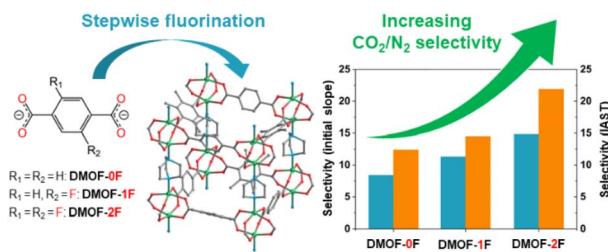
Engineered solid-state aggregates in brickwork stacks of n-type organic semiconductors: a way to achieve high electron mobility

Indrajit Giri, Shant Chhetri, Jesslyn John P., Madalasa Mondal, Arka Bikash Dey and Ratheesh K. Vijayaraghavan*



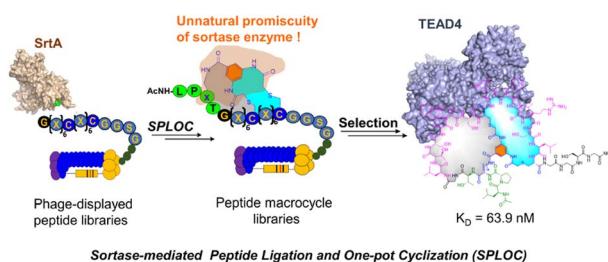
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**Increased CO₂/N₂ selectivity by stepwise fluorination in isoreticular ultramicroporous metal–organic frameworks**

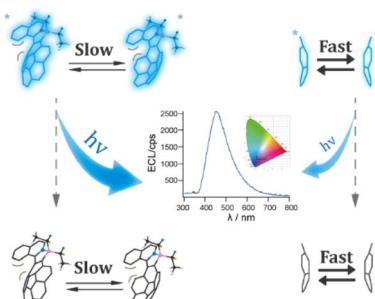
Tuo Di, Yukihiko Yoshida,* Ken-ichi Otake, Susumu Kitagawa and Hiroshi Kitagawa*

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**Employing unnatural promiscuity of sortase to construct peptide macrocycle libraries for ligand discovery**

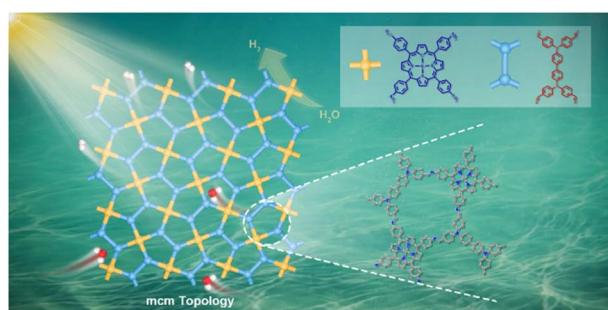
Yan-Ni Zhang, Xiao-Cui Wan, Yang Tang, Ying Chen, Feng-Hao Zheng, Zhi-Hui Cui, Hua Zhang, Zhaocai Zhou and Ge-Min Fang*

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Xiaoli Qin, Lin Huang, Ziying Zhan, Peng Fu, Qing Wang, Congyang Zhang, Jianhui Huang* and Zhifeng Ding*

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**Identification of two-dimensional covalent organic frameworks with mcm topology and their application in photocatalytic hydrogen evolution**

Peng-Ju Tian, Xiang-Hao Han, Qiao-Yan Qi and Xin Zhao*



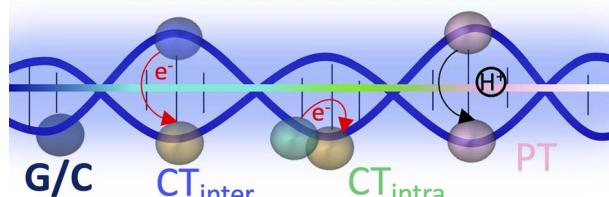
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The photoactivated dynamics of dGpdC and dCpdG sequences in DNA: a comprehensive quantum mechanical study

Lara Martínez-Fernández, James Alexander Green, Luciana Esposito, Martha Yaghoubi Jouybari, Yuyuan Zhang, Fabrizio Santoro, Bern Kohler* and Roberto Impróta*

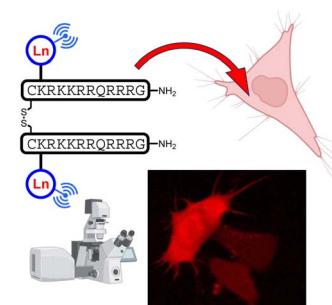
Photoactivated dynamics of GC and CG in DNA



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Efficient cytosolic delivery of luminescent lanthanide bioprosbes in live cells for two-photon microscopy

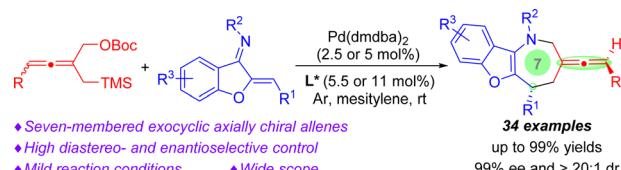
Kyangwi P. Malikitogo, Thibault Charnay, Daouda Ndiaye, Ji-Hyung Choi, Lucile Bridou, Baptiste Chartier, Sule Erbek, Guillaume Micouin, Akos Banyasz, Olivier Maury, Véronique Martel-Frachet, Alexei Grichine and Olivier Sénèque*



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Palladium-catalyzed asymmetric [4 + 3] cycloaddition of methylene-trimethylenemethane: access to seven-membered exocyclic axially chiral allenes

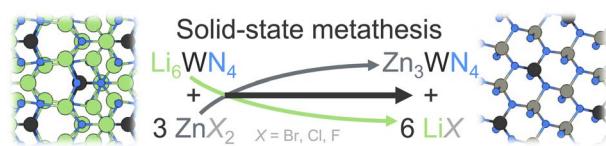
Yafei Wu, Zhuo Wang, Yuqian Shan, Yukun Ma, Teng Li, Chunhao Yuan,* Hongchao Guo* and Biming Mao*



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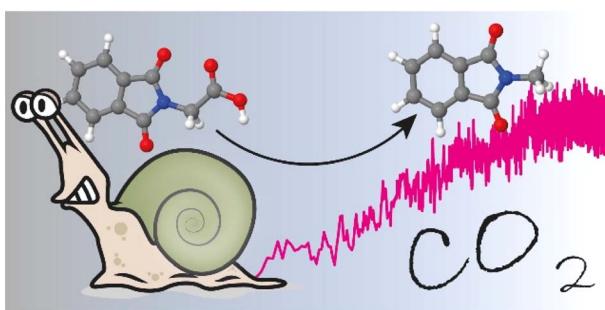
Low-temperature synthesis of cation-ordered bulk Zn_3WN_4 semiconductor via heterovalent solid-state metathesis

Christopher L. Rom,* Shaun O'Donnell, Kayla Huang, Ryan A. Klein, Morgan J. Kramer, Rebecca W. Smaha and Andriy Zakutayev*



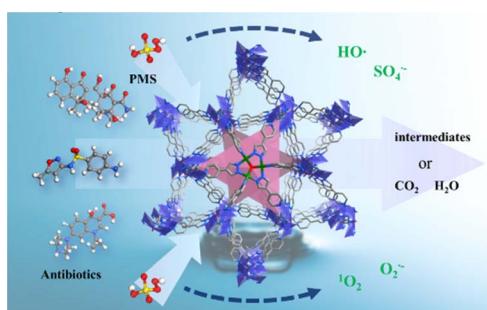
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**The slow photo-induced CO₂ release of *N*-phthaloylglycine**

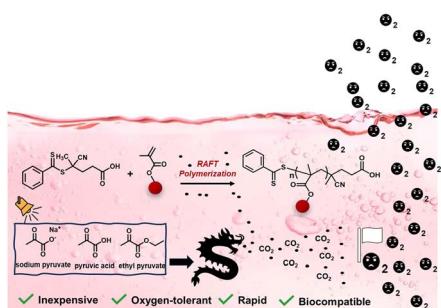
Wiebke Haselbach, Oliver Nolden, Nadine Blaise, Tom Förster, Mick Gindorf, Mathieu Kippes, Michelle P. Rademacher, Matthias Jantz, Luuk J. G. W. van Wilderen, Jens Bredenbeck, Josef Wachtveitl and Peter Gilch*

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**Boosting the degradation of antibiotics via peroxyomonosulfate activation with a Cu-based metal–organic framework**

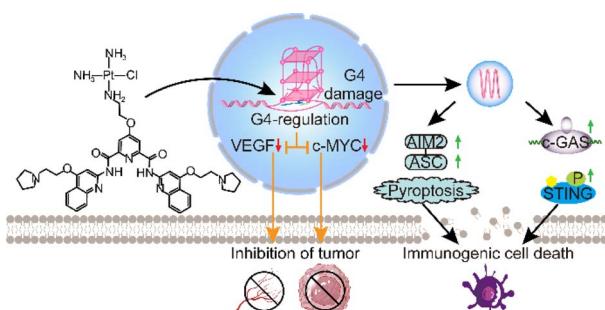
Ying Wu, Gang Liang, Wen-Bin Li, Xiao-Feng Zhong, Yang-Yang Zhang, Jia-Wen Ye, Tao Yang,* Zong-Wen Mo* and Xiao-Ming Chen

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**Aqueous photo-RAFT polymerization under ambient conditions: synthesis of protein–polymer hybrids in open air**

Arman Moini Jazani, Hironobu Murata, Martin Cvek, Anna Lewandowska-Andralojc, Roksana Bernat, Kriti Kapil, Xiaolei Hu, Ferdinando De Luca Bossa, Grzegorz Szczepaniak and Krzysztof Matyjaszewski*

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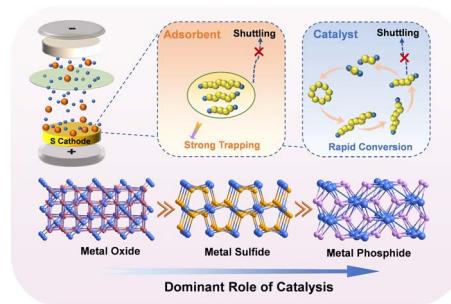
**G-quadruplex-guided cisplatin triggers multiple pathways in targeted chemotherapy and immunotherapy**

Tian-Zhu Ma, Liu-Yi Liu, You-Liang Zeng, Ke Ding, Hang Zhang, Wenting Liu,* Qian Cao, Wei Xia, Xushen Xiong,* Chao Wu* and Zong-Wan Mao*

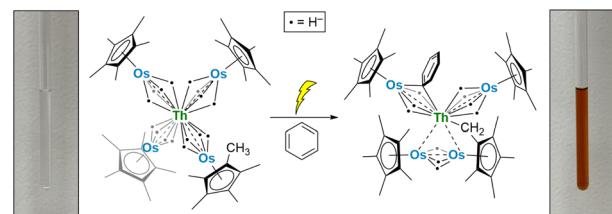


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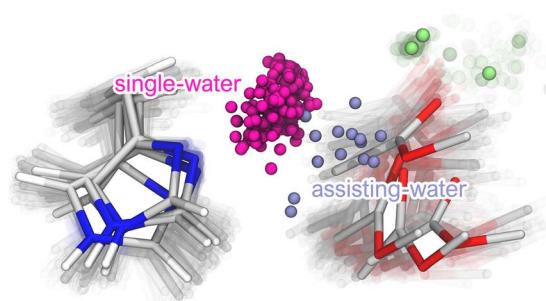
Effects of O, S, and P in transition-metal compounds on the adsorption and catalytic ability of sulfur cathodes in lithium–sulfur batteriesMeng Du, Jiakang Shi, Yuxiao Shi, Guangxun Zhang,
Yan Yan, Pengbiao Geng, Ziqi Tian and Huan Pang*

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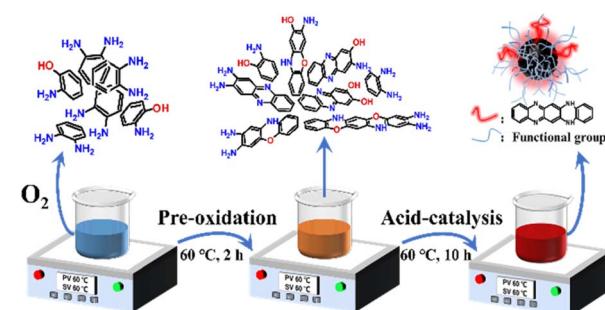
Photolysis-driven bond activation by thorium and uranium tetraosmate polyhydride complexesChristopher Z. Ye, Iker Del Rosal, Sheridan N. Kelly,
I. Joseph Brackbill, Laurent Maron, Clément Camp*
and John Arnold*

Photoinduced inter- and intramolecular C–H activation!

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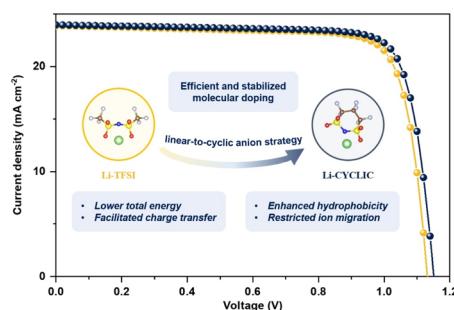
Revisiting the reaction pathways for phospholipid hydrolysis catalyzed by phospholipase A2 with QM/MM methodsAlexandre V. Pinto, Pedro Ferreira, Ana V. Cunha,
Remco W. A. Havenith, Alexandre L. Magalhães, Maria
J. Ramos and Pedro A. Fernandes*

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Intermediate aminophenol enables hectogram-scale synthesis of highly bright red carbon quantum dots under ambient conditionsXiangyong Meng, Maorong Wang, Jishuai Lin, Lihua Wang,
Jin Liu, Yang Song,* Qiang Jing* and Haiguang Zhao*

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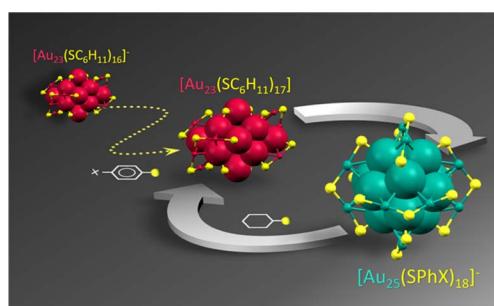
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Efficient and stabilized molecular doping of hole-transporting materials driven by a cyclic-anion strategy for perovskite solar cells

Huaibiao Zeng, Fangyan Lin, Zhongquan Wan,* Hua Yang, Hui Lu, Shaoliang Jiang, Jinqing Zhu, Haomiao Yin, Runmin Wei, Yuanxi Wang, Junsheng Luo* and Chunyang Jia*

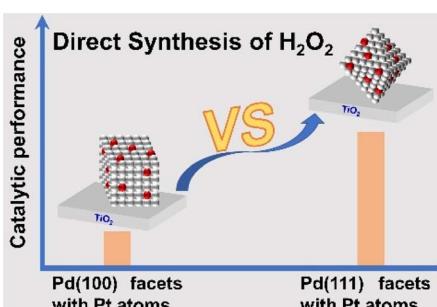
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"Visualizing" the partially reversible conversion of gold nanoclusters via the $\text{Au}_{23}(\text{S}-\text{c}-\text{C}_6\text{H}_{11})_{17}$ intermediate

Saniya Gratiou, Afreen, Eti Mahal, Jibin Thomas, Shubhadeep Saha, Akhil S. Nair, K. V. Adarsh, Biswarup Pathak and Sukhendu Mandal*

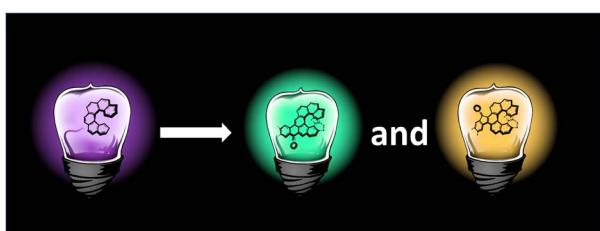
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Facet-dependent synthesis of H_2O_2 from H_2 and O_2 over single Pt atom-modified Pd nanocrystal catalysts

Ying Zhang, Qingdi Sun, Ziyue Wang, Guanghui Guo, Hao Liu, Xiaohui He* and Hongbing Ji*

9842



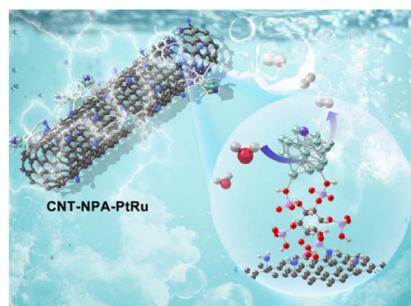
Carbonyl mediated fluorescence in aceno[n]helicenones and fluoreno[n]helicenes

Michał Šámal,* Ludmilla Sturm, Małgorzata Banasiewicz, Irena Deperasinska, Bolesław Kozankiewicz, Olaf Morawski, Yuuya Nagata, Pierre Dechambenoit, Harald Bock, Amandine Rossel, Miloš Buděšínský, Anthony Boudier and Andrej Jančářík*



EDGE ARTICLES

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Engineering the electronic structure of sub-nanometric Ru clusters via Pt single-atom modification for highly efficient electrocatalytic hydrogen evolutionYuzhuang Song, Yaowen Zhang, Wenya Gao,
Chengcheng Yu, Jun Xing, Kang Liu* and Dingxuan Ma*

CORRECTION

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Correction: Deciphering the chemical bonding of the trivalent oxygen atom in oxygen doped graphene

Andoni Ugartemendia, Irene Casademont-Reig, Lili Zhao, Zuxian Zhang, Gernot Frenking, Jesus M. Ugalde, Aran Garcia-Lekue* and Elisa Jimenez-Izal*

