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IN THIS ISSUE

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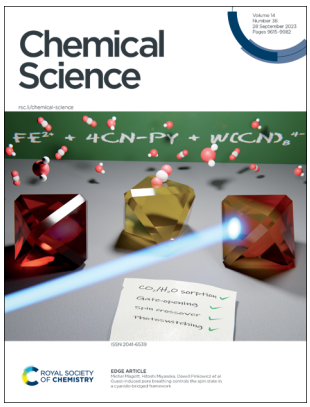

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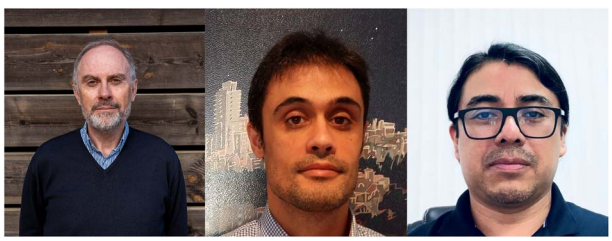
See Daniel Mandler *et al.*, pp. 9630–9650. Image reproduced by permission of Daniel Mandler from *Chem. Sci.*, 2023, **14**, 9630. Artwork created by Nitzan Shauloff.

EDITORIAL

9628

Emerging frontiers in aromaticity

Miquel Solà,* Israel Fernández* and Gabriel Merino*

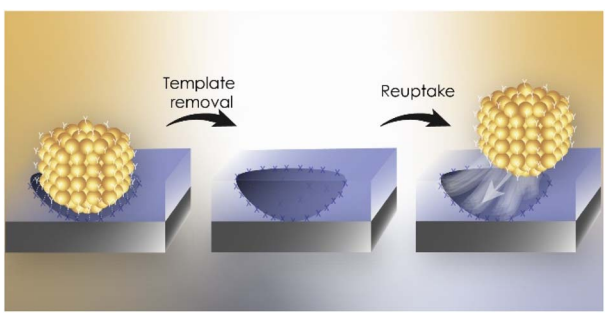


REVIEW

9630

Imprinting of nanoparticles in thin films: Quo Vadis?

Din Zelikovich, Linoy Dery, Hila Sagi-Cohen and Daniel Mandler*



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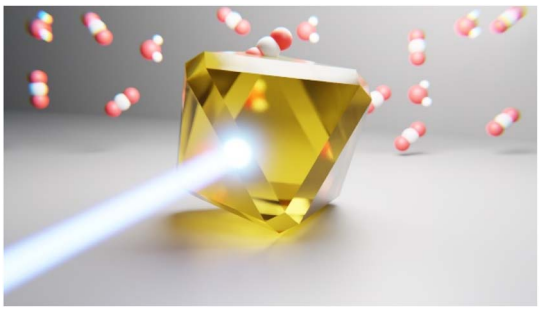
Guest-induced pore breathing controls the spin state in a cyanido-bridged framework

Michał Magott,* Klaudia Płonka, Barbara Sieklucka, Katarzyna Dziedzic-Kocurek, Wataru Kosaka, Hitoshi Miyasaka* and Dawid Pinkowicz*



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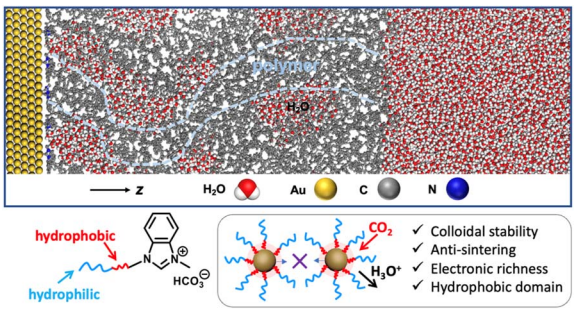
Why surface hydrophobicity promotes CO_2 electroreduction: a case study of hydrophobic polymer *N*-heterocyclic carbenes

Qiang Luo, Hanyi Duan, Michael C. McLaughlin, Kecheng Wei, Joseph Tapia, Joseph A. Adewuyi, Seth Shuster, Maham Liaqat, Steven L. Suib, Gaël Ung, Peng Bai,* Shouheng Sun* and Jie He*



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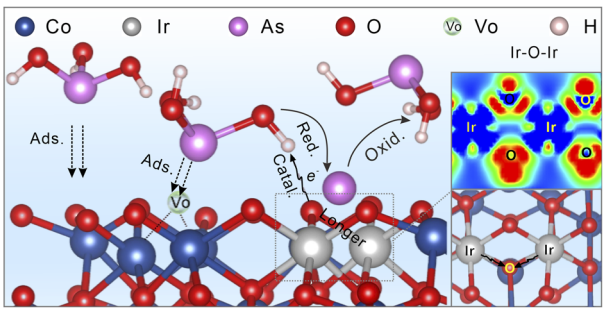
Modulating paired Ir–O–Ir *via* electronic perturbations of correlated Ir single atoms to overcome catalytic selectivity

Shi-Hua Chen, Yuan-Fan Yang, Zong-Yin Song, Xiang-Yu Xiao, Cong-Cong Huang, Xin Cai, Pei-Hua Li, Meng Yang, Aicheng Chen, Wen-Qing Liu* and Xing-Jiu Huang*



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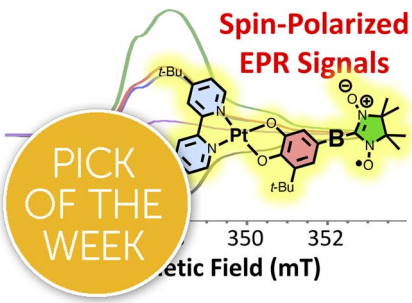
Competitive reversed quartet mechanisms for photogenerated ground state electron spin polarization

Martin L. Kirk,* David A. Shultz,* Patrick Hewitt, Anil Reddy Marri and Art van der Est*



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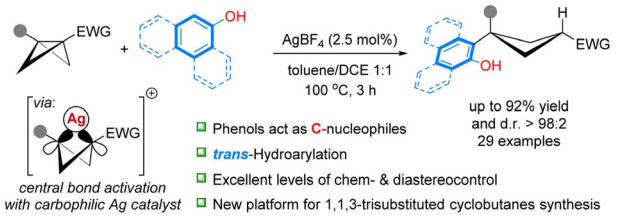

C(sp^2)–H cyclobutylation of hydroxyarenes enabled by silver-π-acid catalysis: diastereocontrolled synthesis of 1,3-difunctionalized cyclobutanes

Lei Tang, Qi-Nan Huang, Feng Wu, Yuanjiu Xiao, Jin-Lan Zhou, Tong-Tong Xu, Wen-Biao Wu,* Shuanglin Qu* and Jian-Jun Feng*

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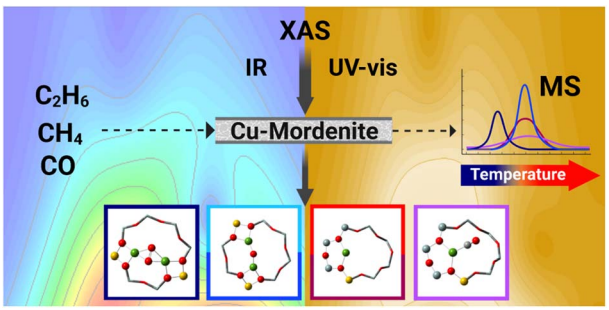

Understanding C–H activation in light alkanes over Cu-MOR zeolites by coupling advanced spectroscopy and temperature-programmed reduction experiments

Karoline Kvande, Beatrice Garetto, Gabriele Deplano, Matteo Signorile, Bjørn Gading Solemsli, Sebastian Prodinger, Unni Olsbye, Pablo Beato, Silvia Bordiga, Stian Svelle* and Elisa Borfecchia*

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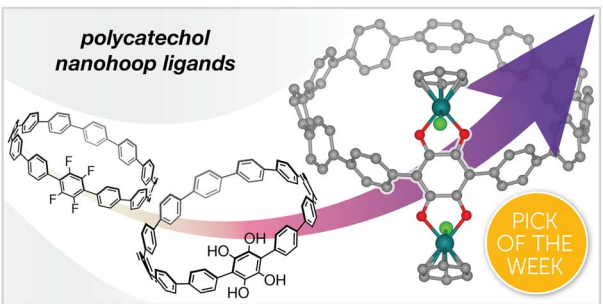

Synthesis and metalation of polycatechol nanohoops derived from fluorocycloparaphenylenes

Ashlyn A. Kamin, Tara D. Clayton, Claire E. Otteson, Paige M. Gannon, Sebastian Krajewski, Werner Kaminsky, Ramesh Jasti and Dianne J. Xiao*

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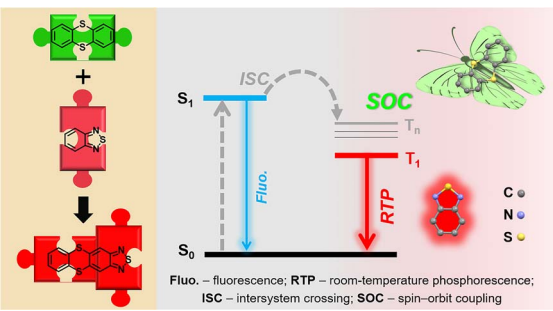

A functional unit combination strategy for enhancing red room-temperature phosphorescence

Shuaiqiang Zhao, Zhiqiang Yang, Xiangyu Zhang, Haichao Liu,* Yingbo Lv, Shiyin Wang, Zhongzhao Yang, Shi-Tong Zhang and Bing Yang*

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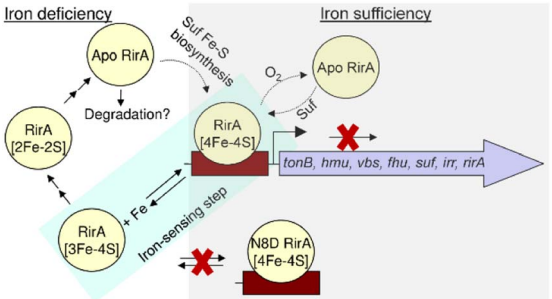
Stabilisation of the RirA [4Fe–4S] cluster results in loss of iron-sensing function

Elizabeth Gray, Melissa Y. Y. Stewart, Libby Hanwell, Jason C. Crack, Rebecca Devine, Clare E. M. Stevenson, Anne Volbeda, Andrew W. B. Johnston, Juan C. Fontecilla-Camps, Matthew I. Hutchings, Jonathan D. Todd and Nick E. Le Brun*



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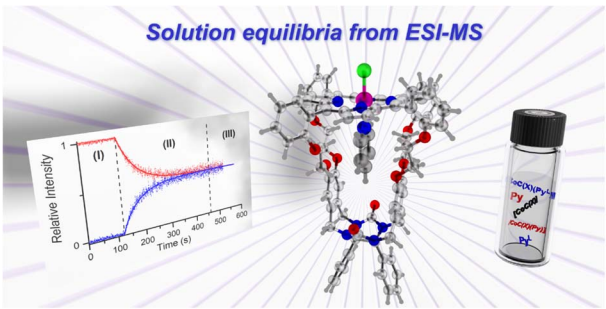
Kinetics of ligand exchange in solution: a quantitative mass spectrometry approach

Quentin Duez,* Paul Tinnemans, Johannes A. A. W. Elemans and Jana Roithová*



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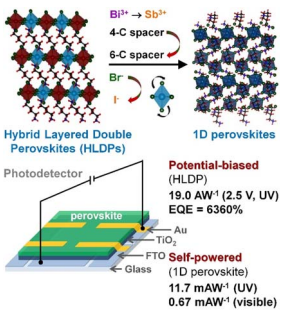
Transition from Dion–Jacobson hybrid layered double perovskites to 1D perovskites for ultraviolet to visible photodetection

Arnab Mandal, Shresth Gupta, Supriti Dutta, Swapan K. Pati and Sayan Bhattacharyya*



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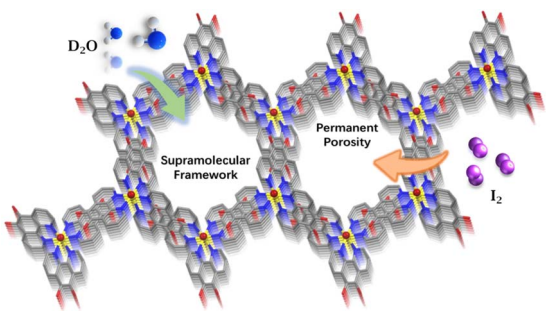
Modular metallotecton for engineering permanently porous frameworks: supernumerary role of ancillary ion

Deepak Gupta, Géraldine Chanteux, Gulshan Kumar, Koen Robeyns and Alexandru Vlad*



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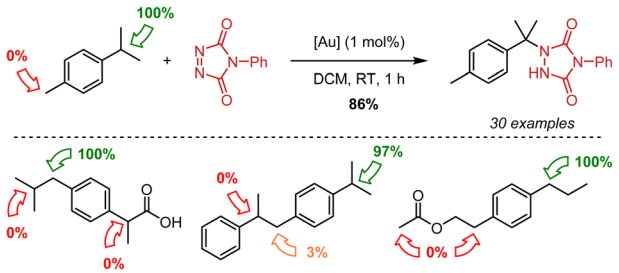

Site selective gold(I)-catalysed benzylic C–H amination *via* an intermolecular hydride transfer to triazolinediones

Kevin Bevernaege, Nikolaos V. Tzouras, Albert Poater, Luigi Cavallo, Steven P. Nolan,* Fady Nahra* and Johan M. Winne*

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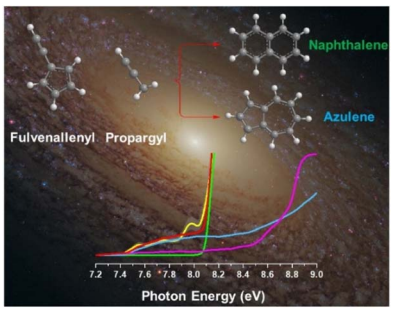

Gas-phase preparation of azulene ($C_{10}H_8$) and naphthalene ($C_{10}H_8$) *via* the reaction of the resonantly stabilized fulvenallenyl ($C_7H_5^{\cdot}$) and propargyl ($C_3H_3^{\cdot}$) radicals

Wang Li, Jiuzhong Yang, Long Zhao,* David Couch, Myrsini San Marchi, Nils Hansen,* Alexander N. Morozov, Alexander M. Mebel* and Ralf I. Kaiser*

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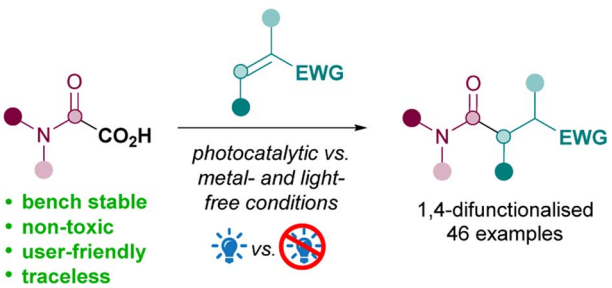

Direct decarboxylative Giese amidations: photocatalytic *vs.* metal- and light-free

David M. Kitcatt, Katie A. Scott, Elena Rongione, Simon Nicolle and Ai-Lan Lee*

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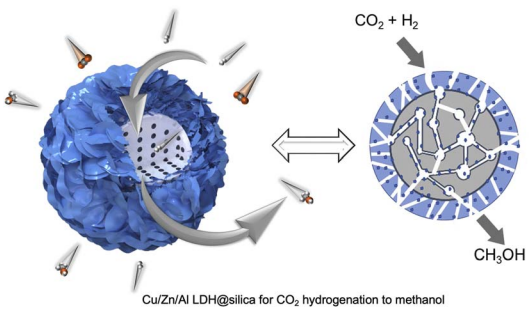

Core–shell silica@Cu_xZnAl LDH catalysts for efficient CO_2 hydrogenation to methanol

Meng Lyu, Jianwei Zheng, Claire Coulthard, Jing Ren, Yufei Zhao, Shik Chi Edman Tsang, Chunping Chen* and Dermot O'Hare*

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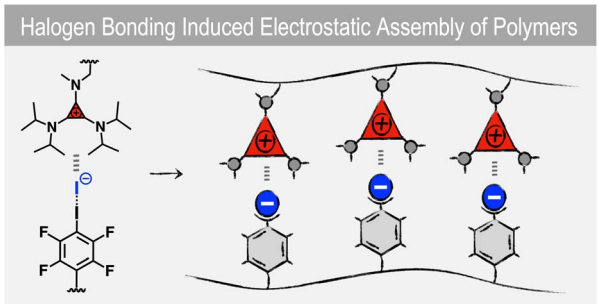
Exploring the supramolecular chemistry of cyclopropeniums: halogen-bonding-induced electrostatic assembly of polymers

Shiwen Huang, Jianlin Zheng, Zihao Jiang, Jiaxiong Liu and Yiliu Liu*



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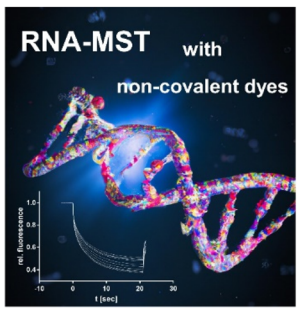
Non-covalent dyes in microscale thermophoresis for studying RNA ligand interactions and modifications

Elisabeth Kallert, Malte Behrendt, Ariane Frey, Christian Kersten and Fabian Barthels*



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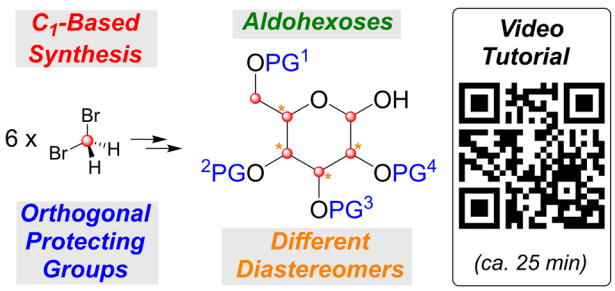
A unified strategy for the synthesis of aldohexoses by boronate assisted assembly of CH_2X_2 derived C_1-building blocks

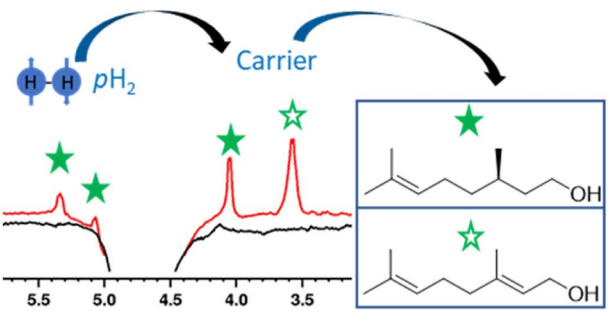
Sujenth Kirupakaran, Glib Arago and Christoph Hirschhäuser*



9843

Enhancing the NMR signals of plant oil components using hyperpolarisation relayed *via* proton exchange

Adel Alshehri, Ben. J. Tickner, Wissam Iali and Simon B. Duckett*



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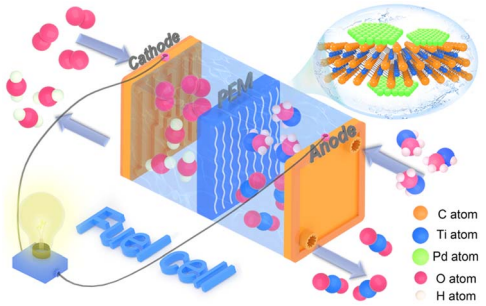
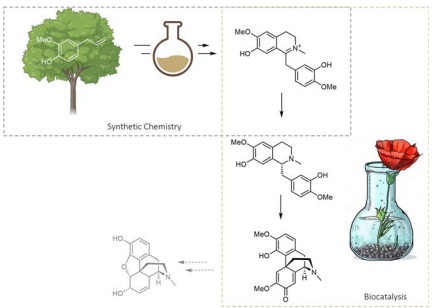
9854



A 2D/2D heterojunction of ultrathin Pd nanosheet/MXene towards highly efficient methanol oxidation reaction: the significance of 2D material nanoarchitectonics

Huajie Huang, Di Xiao, Zihan Zhu, Chi Zhang, Lu Yang, Haiyan He, Jungmok You, Quanguo Jiang,* Xingtao Xu* and Yusuke Yamauchi*

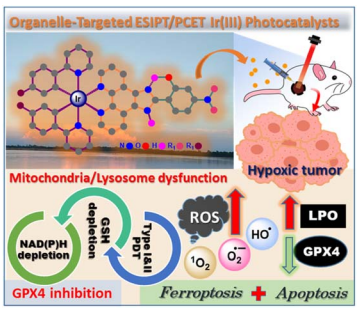
9863



Concise synthesis of (*R*)-reticuline and (+)-salutaridine by combining early-stage organic synthesis and late-stage biocatalysis

Emmanuel Cigan, Jakob Pletz, Sarah A. Berger, Bettina Hierzberger, Michael Grilec-Zlamal, Alexander Steiner, Isabel Oroz-Guinea and Wolfgang Kroutil*

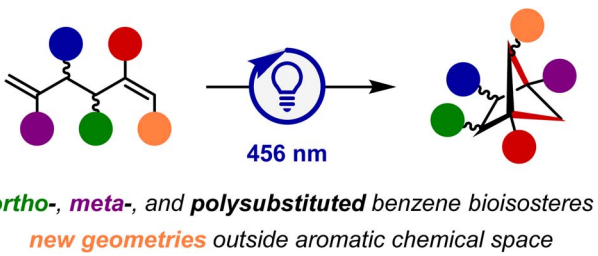
9872



Interrogating bioinspired ESIPT/PCET-based Ir(III)-complexes as organelle-targeted phototherapeutics: a redox-catalysis under hypoxia to evoke synergistic ferroptosis/apoptosis

Maniklal Shee, Dan Zhang, Moumita Banerjee, Samrat Roy, Bipul Pal, Anakuthil Anoop,* Youyong Yuan* and N. D. Pradeep Singh*

9885



Synthesis of polysubstituted bicyclo[2.1.1]hexanes enabling access to new chemical space

Marius Reinhold, Justin Steinebach, Christopher Golz and Johannes C. L. Walker*

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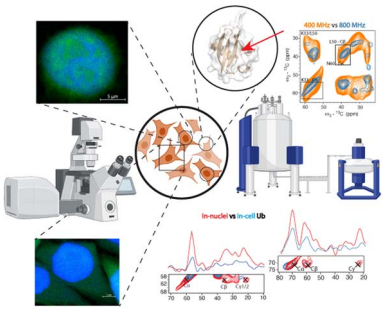
9892

A high-field cellular DNP-supported solid-state NMR approach to study proteins with sub-cellular specificity

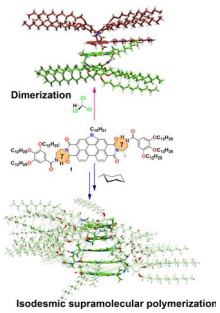
David Beriashvili, Ru Yao, Francesca D'Amico, Michaela Krafčíková, Andrei Gurinov, Adil Safeer, Xinyi Cai, Monique P. C. Mulder, Yangping Liu, Gert E. Folkers and Marc Baldus*



9900

Solvent-dependent self-assembly of *N*-annulated perylene diimides. From dimers to supramolecular polymers

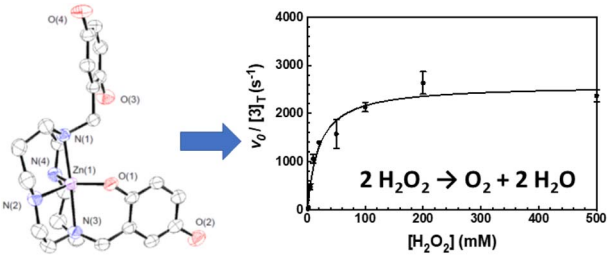
Cristina Naranjo, Azahara Doncel-Giménez, Rafael Gómez, Juan Aragó,* Enrique Ortí* and Luis Sánchez*



9910

A macrocyclic quinol-containing ligand enables high catalase activity even with a redox-inactive metal at the expense of the ability to mimic superoxide dismutase

Sana Karbalaei, Alicja Franke, Julian Oppelt, Tarfi Aziz, Aubree Jordan, P. Raj Pokkuluri, Dean D. Schwartz, Ivana Ivanović-Burmazović* and Christian R. Goldsmith*

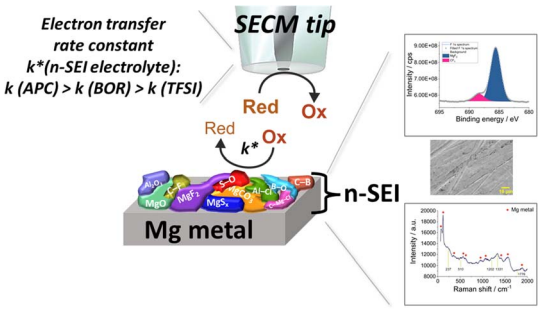


Rapid catalase activity without redox-active metals

9923

Unveiling the electronic properties of native solid electrolyte interphase layers on Mg metal electrodes using local electrochemistry

Carla Santana Santos, Martina Romio, Yuri Surace, Nicolas Eshraghi, Marco Amores, Andreas Mautner, Christiane Groher, Marcus Jahn, Edgar Ventosa and Wolfgang Schuhmann*



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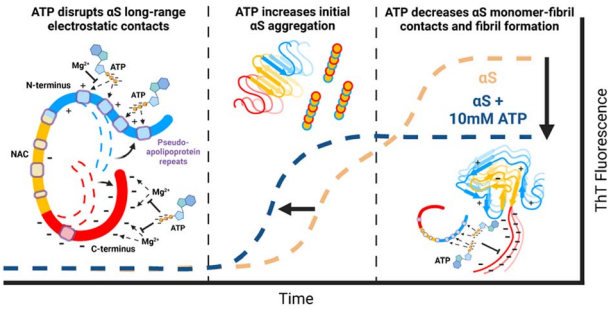
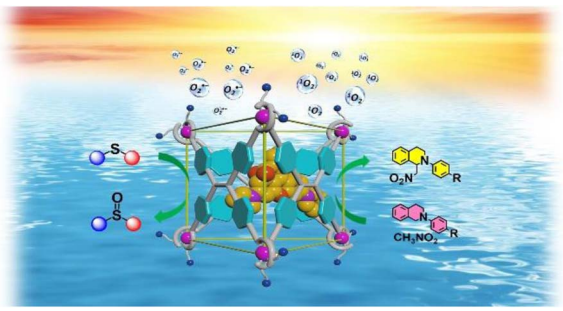


Toward a molecular mechanism for the interaction of ATP with alpha-synuclein

Evelyn Rose Kamski-Hennekam, Jinfeng Huang, Rashik Ahmed and Giuseppe Melacini*

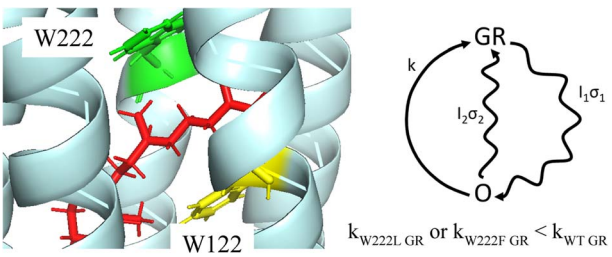
9943



An artificial light-harvesting system constructed from a water-soluble metal–organic barrel for photocatalytic aerobic reactions in aqueous media

Danyang Li, Linlin Yang, Wangjian Fang, Xinmei Fu, Hechuan Li, Jianxu Li, Xuezhao Li and Cheng He*

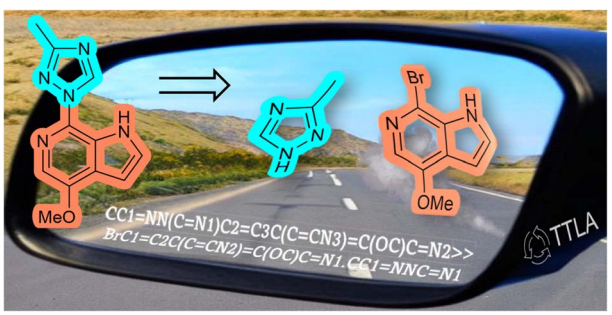
9951



Impact of protein–chromophore interaction on the retinal excited state and photocycle of *Gloeobacter* rhodopsin: role of conserved tryptophan residues

Ramprasad Misra, Ishita Das, András Dér, Gábor Steinbach, Jin-gon Shim, Wayne Busse, Kwang-Hwan Jung, László Zimányi* and Mordechai Sheves*

9959



Multistep retrosynthesis combining a disconnection aware triple transformer loop with a route penalty score guided tree search

David Kreutter and Jean-Louis Reymond*

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9970

Continuous addition kinetic elucidation: catalyst and reactant order, rate constant, and poisoning from a single experiment

Peter J. H. Williams, Charles Killeen, Ian C. Chagunda, Brett Henderson, Sofia Donnecke, Wil Munro, Jaspreet Sidhu, Denaisha Kraft, David A. Harrington* and J. Scott McIndoe*

CORRECTIONS

9978

Correction: Self-healing mixed matrix membranes containing metal–organic frameworks

Prantik Mondal and Seth M. Cohen*

9980

Correction: Peptide epitope-imprinted polymer microarrays for selective protein recognition. Application for SARS-CoV-2 RBD protein

Zsófia Bognár, Eszter Supala, Aysu Yarman, Xiaorong Zhang, Frank F. Bier, Frieder W. Scheller and Róbert E. Gyurcsányi*