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See Yong-Gui Gao, Esther C. Y. Woon *et al.*, pp. 112–122.
Cover image created by Esther Woon, Joel Toh and Sunny Angfrom, *Chem. Sci.*, 2015, **6**, 112.

Inside cover
See G. Aromí *et al.*, pp. 123–131.
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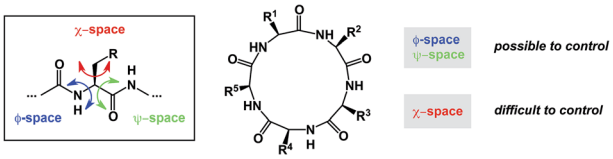
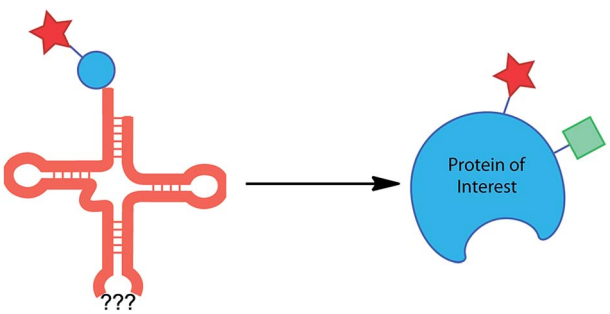
PERSPECTIVE



MINIREVIEWS



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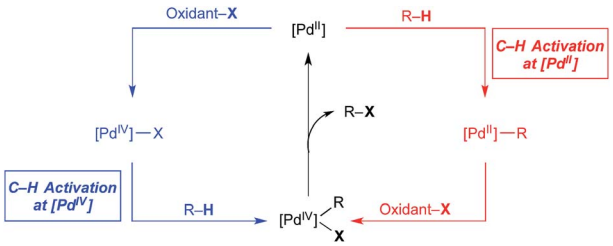

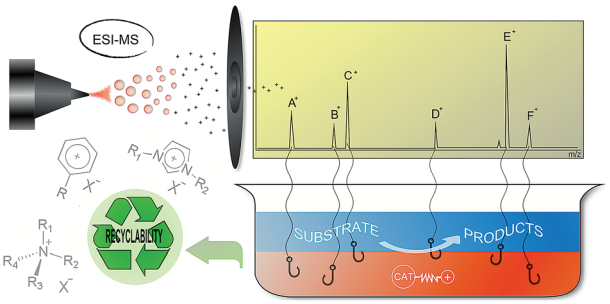

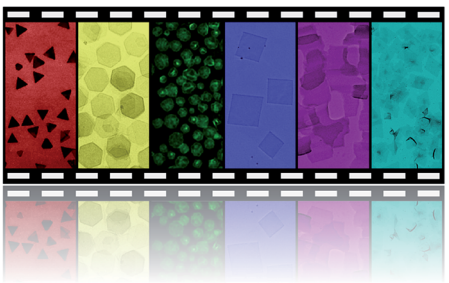

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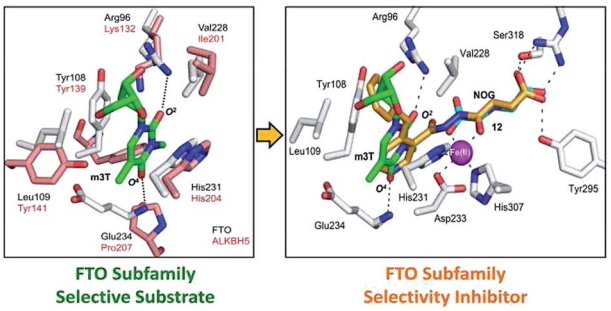

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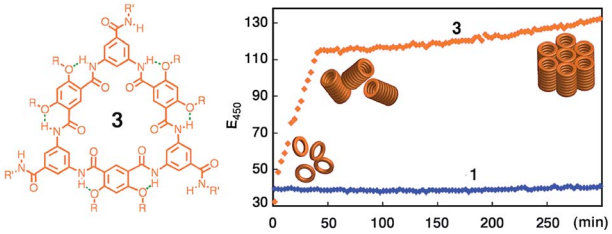
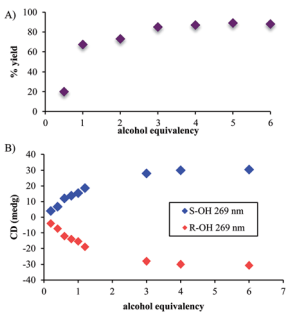
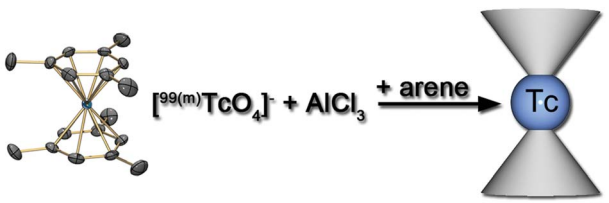
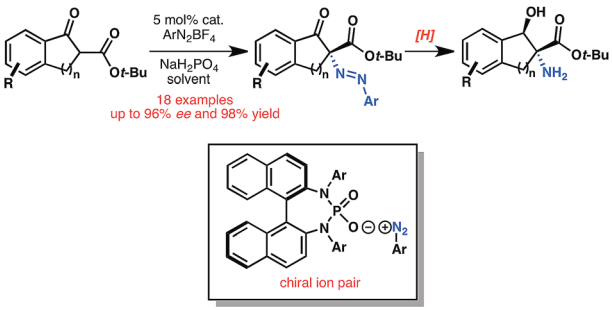
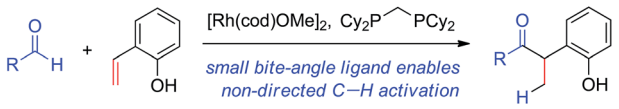






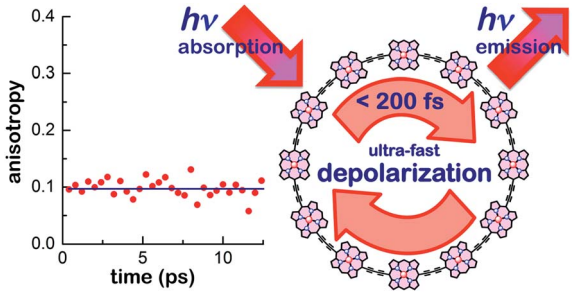




Mechanistic insights into hydroacylation with non-chelating aldehydes

Stephen K. Murphy, Achim Bruch and Vy M. Dong*

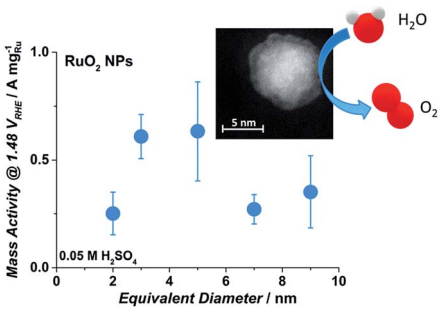
Rhodium catalysts with small-bite-angle diphosphines enable branched-selective hydroacylation of 2-vinylphenols *via* C–H activation of non-chelating aldehydes.



Ultrafast delocalization of excitation in synthetic light-harvesting nanorings

C.-K. Yong, P. Parkinson, D. V. Kondratuk, W.-H. Chen, A. Stannard, A. Summerfield, J. K. Sprafke, M. C. O'Sullivan, P. H. Beton, H. L. Anderson* and L. M. Herz*

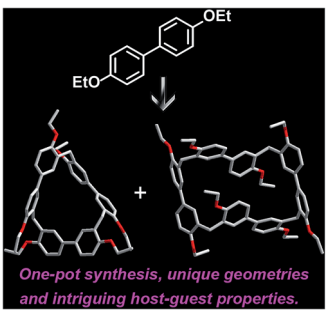
When light is absorbed by a nanoring consisting of 6–24 porphyrin units, the excitation delocalizes over the whole molecule within 200 fs. Highly symmetric nanorings exhibit thermally enhanced super-radiance.



Oxygen evolution on well-characterized mass-selected Ru and RuO_2 nanoparticles

Elisa A. Paoli, Federico Masini, Rasmus Frydendal, Davide Deiana, Christian Schlaup, Mauro Malizia, Thomas W. Hansen, Sebastian Horch, Ifan E. L. Stephens* and Ib Chorkendorff*

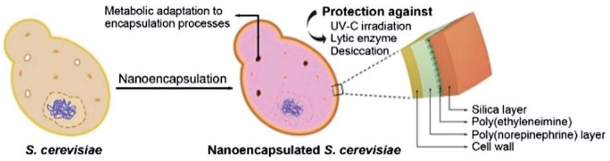
Well-defined mass-selected Ru and RuO_2 nanoparticles exhibit an order of magnitude improvement in the oxygen evolution activity, relative to the state-of-the-art, with a maximum at around 3–5 nm.

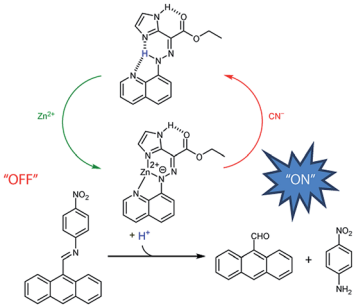


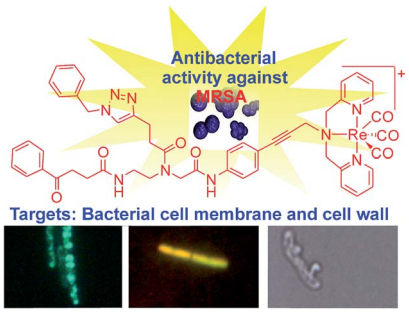
Biphen[*n*]arenes

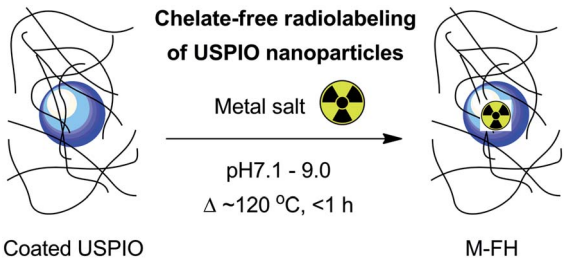
Huanqing Chen, Jiazeng Fan, Xiaoshi Hu, Junwei Ma, Shilu Wang, Jian Li, Yihua Yu, Xueshun Jia and Chunju Li*

We describe the one-pot synthesis, unique geometries and intriguing host–guest properties of a new class of supramolecular macrocycles – biphen[*n*]arenes ($n = 3, 4$).









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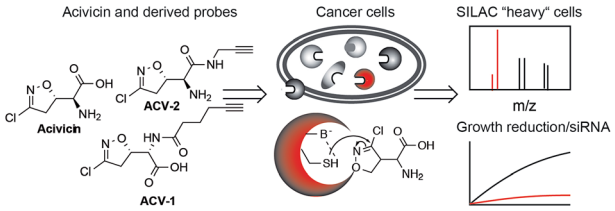

Target discovery of acivicin in cancer cells elucidates its mechanism of growth inhibition

Johannes Kreuzer, Nina C. Bach, Daniel Forler and Stephan A. Sieber*

Using a chemical proteomic strategy we analyzed the targets of acivicin and provided a mechanistic explanation for its inhibition of cancer cell growth.

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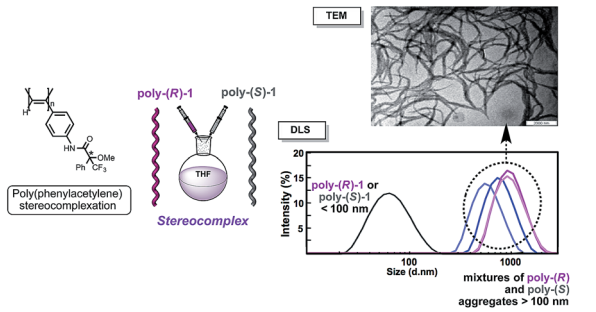

Reversible assembly of enantiomeric helical polymers: from fibers to gels

Seila Leiras, Félix Freire,* Emilio Quiñoá and Ricardo Riguera*

A novel class of stereocomplexes is described by the interaction of helically complementary poly(phenylacetylene)s (PPAs) carrying an α-methoxy-α-trifluoromethylphenylacetamide pendant group.

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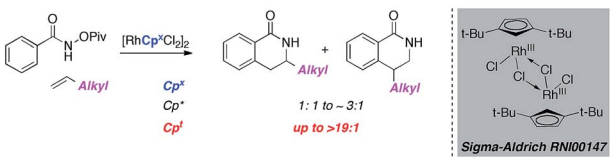

Ligand design for Rh(III)-catalyzed C–H activation: an unsymmetrical cyclopentadienyl group enables a regioselective synthesis of dihydroisoquinolones

Todd K. Hyster, Derek M. Dalton and Tomislav Rovis*

A modified cyclopentadienyl ligand greatly improves regioselectivity in Rh(III) catalyzed alkene insertion/C–H activation.

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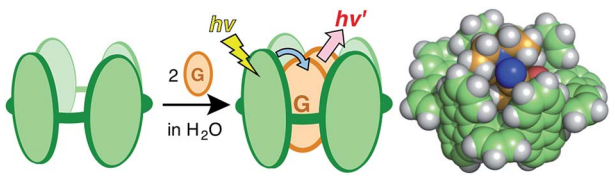

An aqueous molecular tube with polyaromatic frameworks capable of binding fluorescent dyes

Keita Hagiwara, Munetaka Akita and Michito Yoshizawa*

An aqueous polyaromatic tube binds two molecules of fluorescent dyes in water and the bound dye dimers exhibit unusual excimer-like emissions through efficient host–guest energy transfer.

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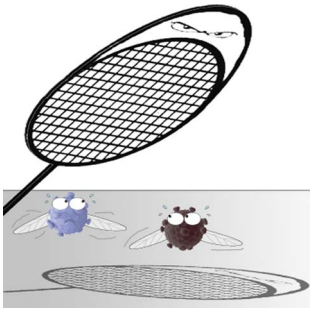

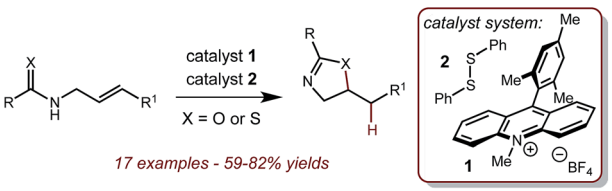

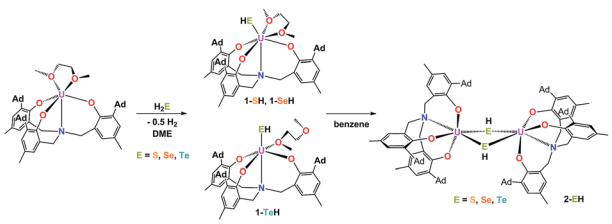

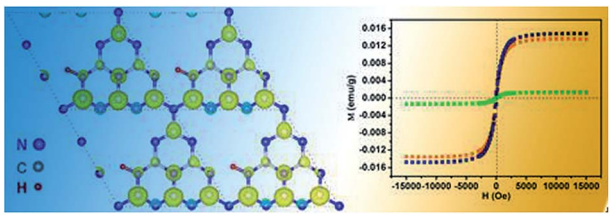

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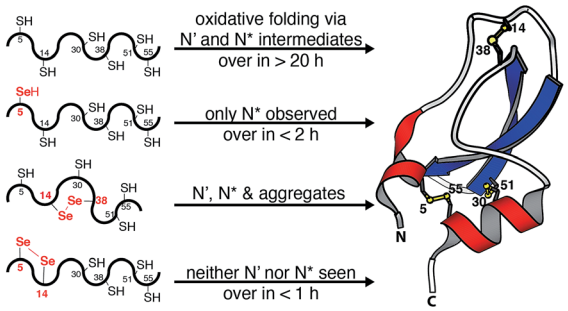
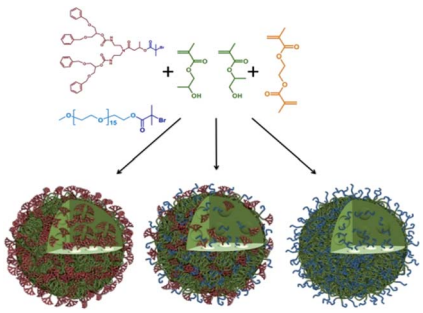
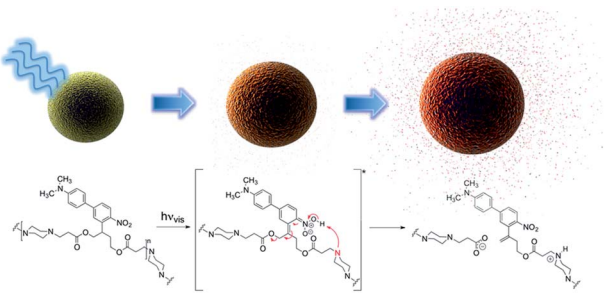
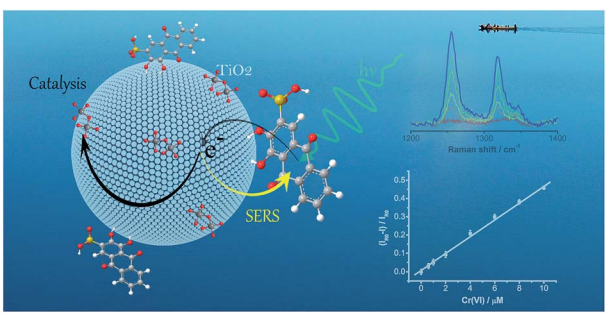
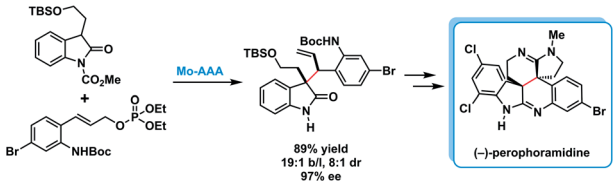






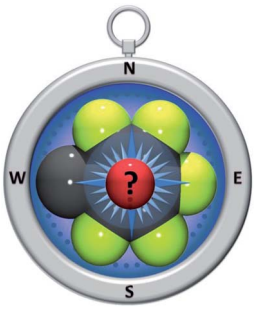




A catalytic asymmetric total synthesis of (–)-perophoramidine

B. M. Trost,* M. Osipov, S. Krüger and Y. Zhang

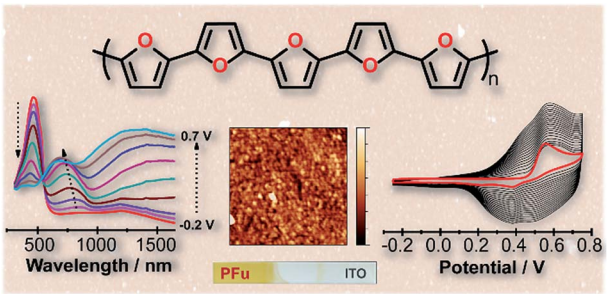
We describe a catalytic asymmetric total synthesis of the ascidian alkaloid (–)-perophoramidine employing a Mo-catalyzed asymmetric allylic alkylation and unprecedented imino ether allylation as key steps.



The pentafluorophenyl group as π-acceptor for anions: a case study

Michael Giese, Markus Albrecht,* Arto Valkonen and Kari Rissanen*

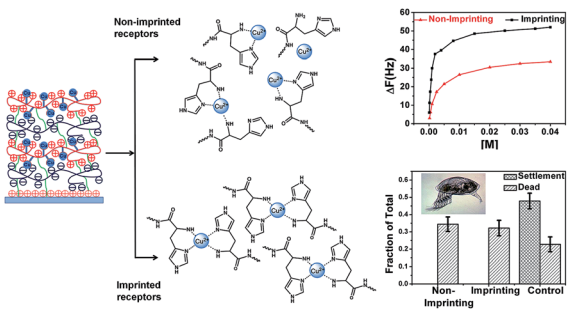
A unique structural study investigates the variability of anion–π bonding in the solid state structures of pentafluorophenyl arenes. The hapticity concept is used as tool to describe the structural differences of various anion–π complexes.



Conducting polyfurans by electropolymerization of oligofurans

Dennis Sheberla,* Snehangshu Patra, Yair H. Wijsboom, Sagar Sharma, Yana Sheynin, Abd-Elrazek Haj-Yahia, Adva Hayoun Barak, Ori Gidron and Michael Bendikov

Polyfuran films produced by electropolymerization of a series of oligofurans substituted with alkyl groups show improved properties, such as good conductivity and stability, well-defined spectroelectrochemistry and smooth morphology.

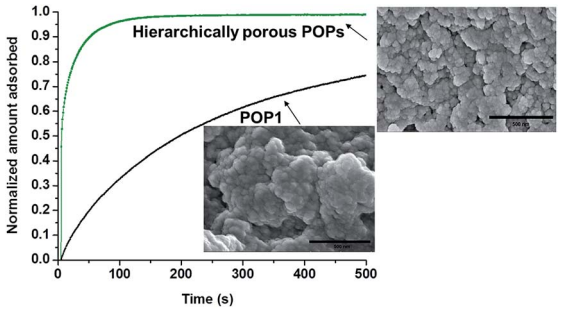


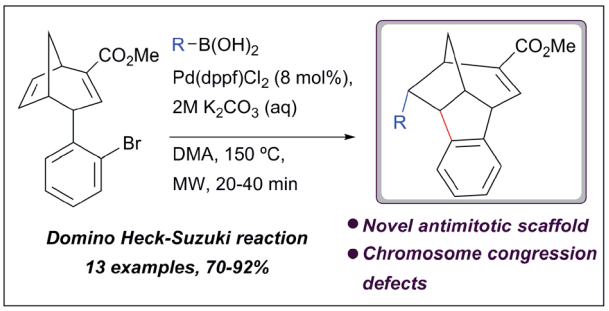
Imprinting of metal receptors into multilayer polyelectrolyte films: fabrication and applications in marine antifouling

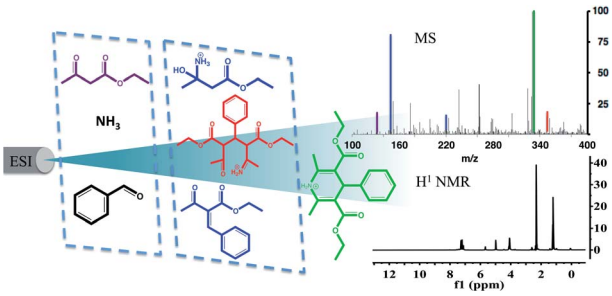
Sreenivasa Reddy Puniredd, Dominik Jańczewski,* Dewi Pitrasari Go, Xiaoying Zhu, Shifeng Guo, Serena Lay Ming Teo, Serina Siew Chen Lee and G. Julius Vancso*

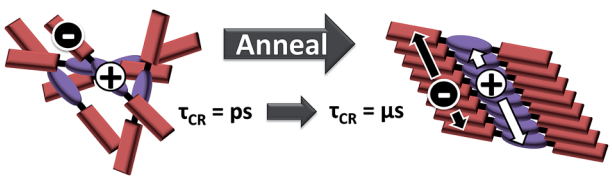
Polymeric films constructed using layer-by-layer fabrication were employed as a platform for metal ion immobilization and applied as a marine antifouling coating.

EDGE ARTICLES









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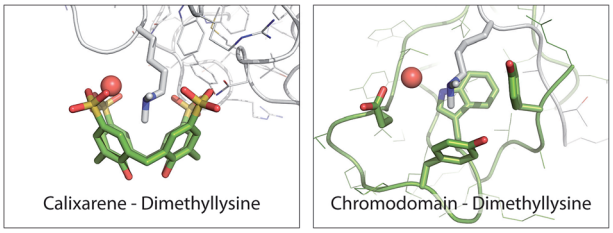

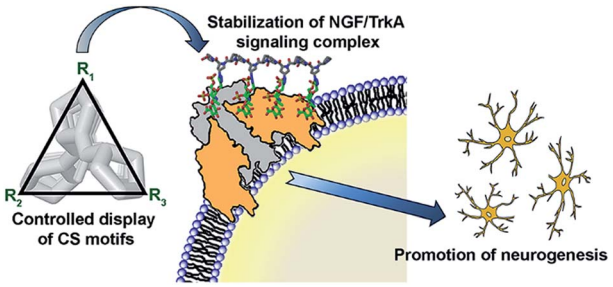

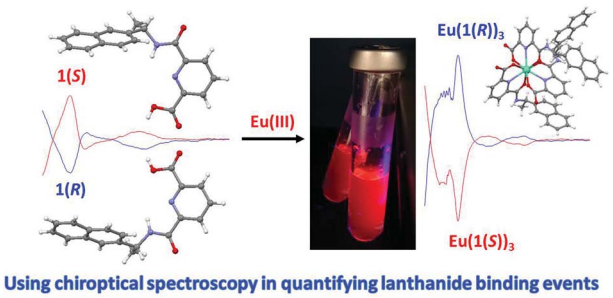

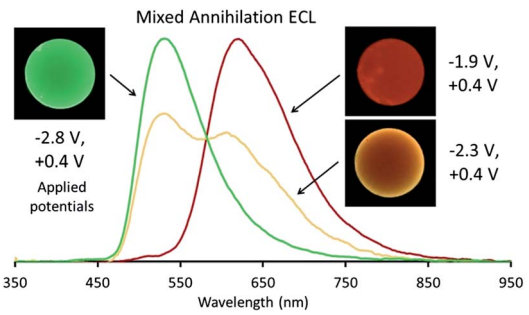

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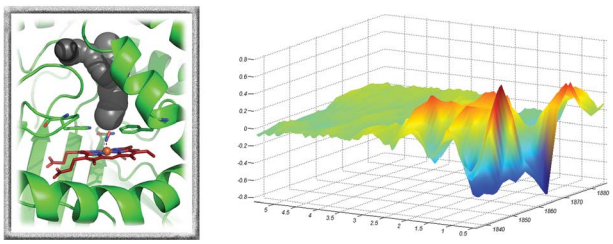

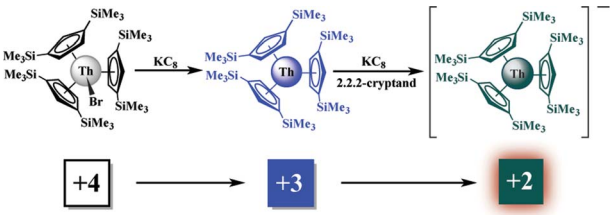

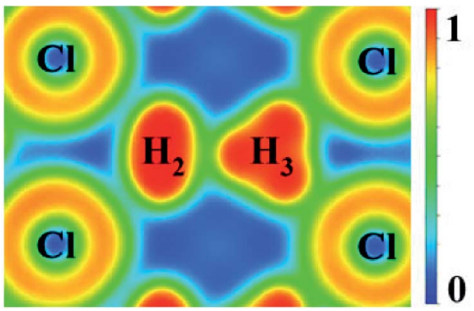

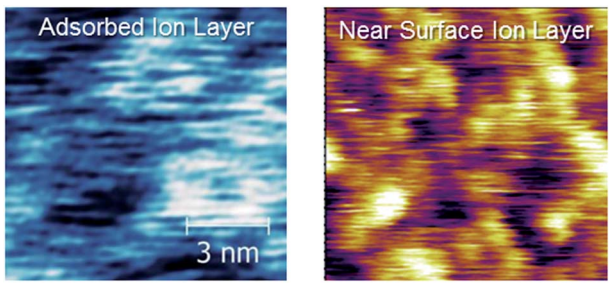

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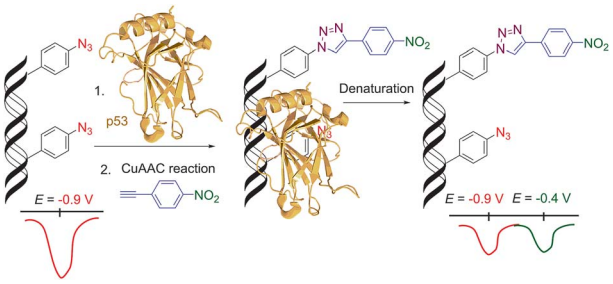
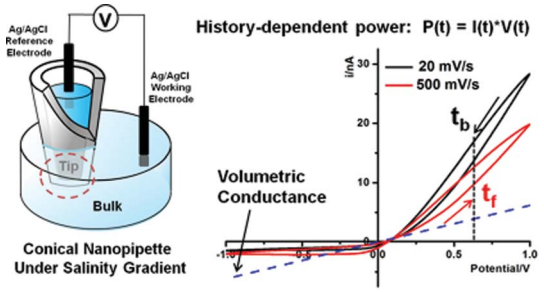
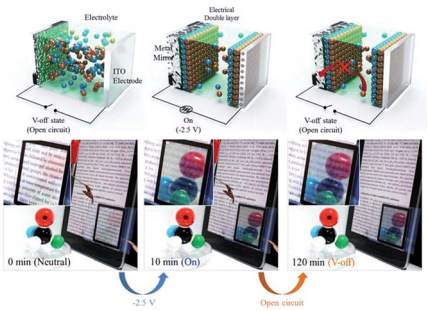
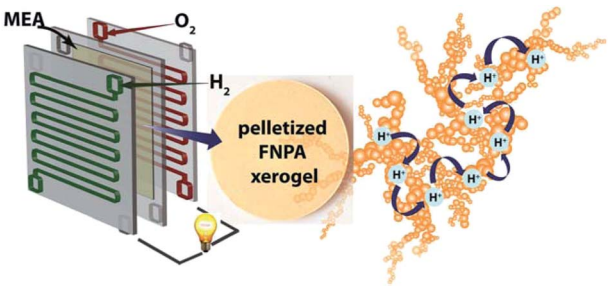


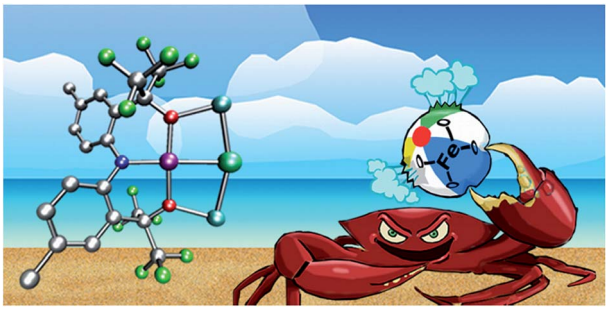






EDGE ARTICLES

608

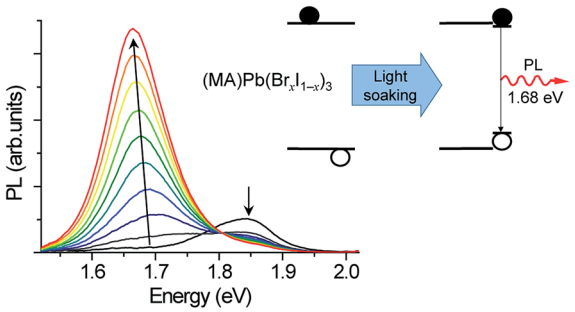


A high-spin square-planar Fe(II) complex stabilized by a trianionic pincer-type ligand and conclusive evidence for retention of geometry and spin state in solution

M. E. Pascualini, N. V. Di Russo, A. E. Thuijs, A. Ozarowski, S. A. Stoian, K. A. Abboud, G. Christou and A. S. Veige*

Extensive spectroscopic evaluation of a novel ONO^{3-} trianionic pincer Fe(II) complex indicates the rare square-planar geometry and $S = 2$ spin state are retained in solution.

613

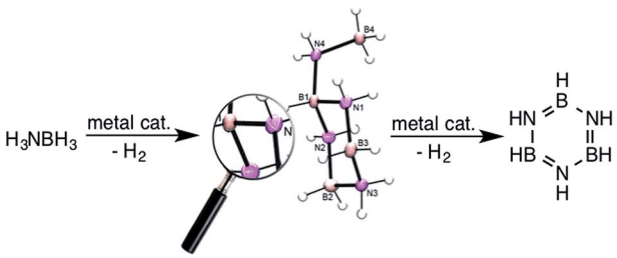


Reversible photo-induced trap formation in mixed-halide hybrid perovskites for photovoltaics

Eric T. Hoke, Daniel J. Slotcavage, Emma R. Dohner, Andrea R. Bowring, Hemamala I. Karunadasa* and Michael D. McGehee*

A reversible photo-induced instability has been found in mixed-halide photovoltaic perovskites that limits the open circuit voltage in solar cells.

618

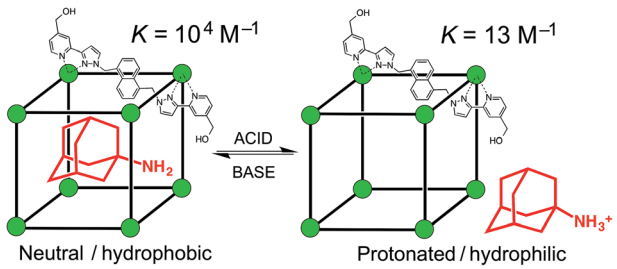


Probing the second dehydrogenation step in ammonia-borane dehydrocoupling: characterization and reactivity of the key intermediate, B-(cyclotriborazanyl)amine-borane

Hassan A. Kalviri, Felix Gärtner, Gang Ye, Ilia Korobkov and R. Tom Baker*

The key intermediate in metal-catalyzed dehydrogenation of ammonia-borane to borazine is shown to be the BN analog of ethylcyclohexane.

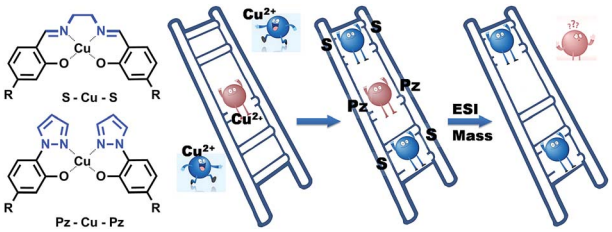
625

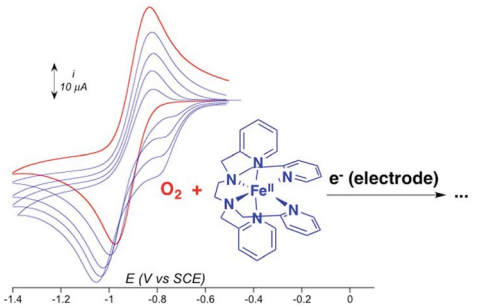


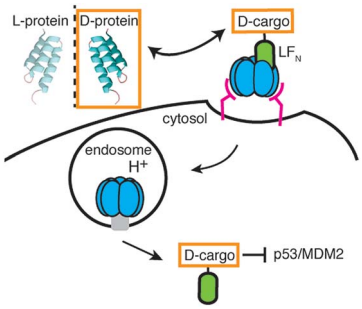
pH-dependent binding of guests in the cavity of a polyhedral coordination cage: reversible uptake and release of drug molecules

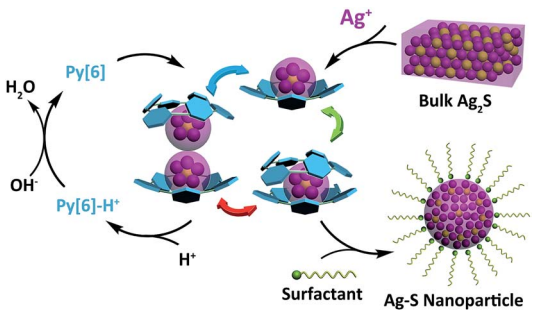
William Cullen, Simon Turega, Christopher A. Hunter* and Michael D. Ward*

Binding of organic guests containing acidic or basic groups inside a water-soluble coordination cage host shows strong pH dependence.









EDGE ARTICLES

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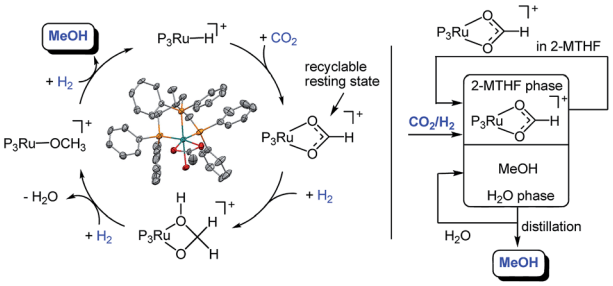

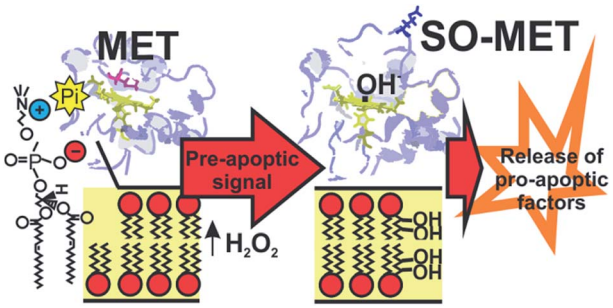

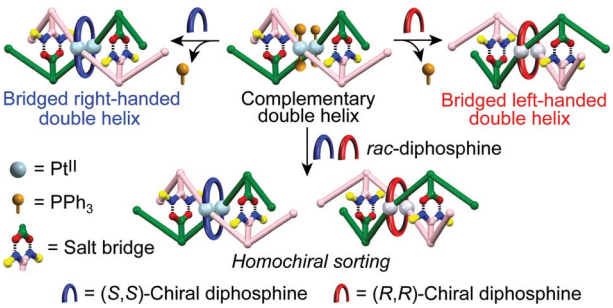

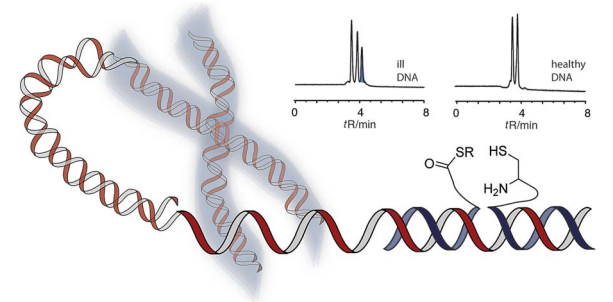

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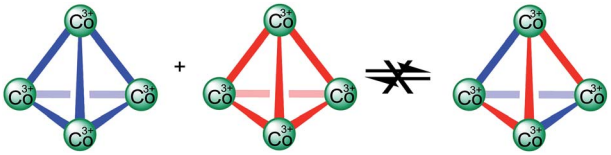

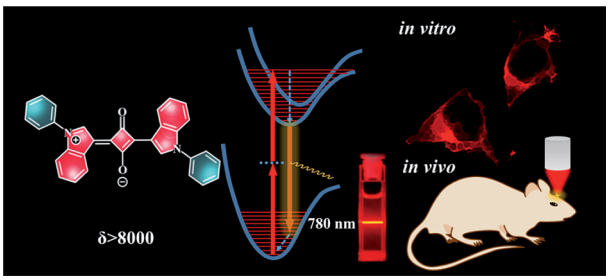

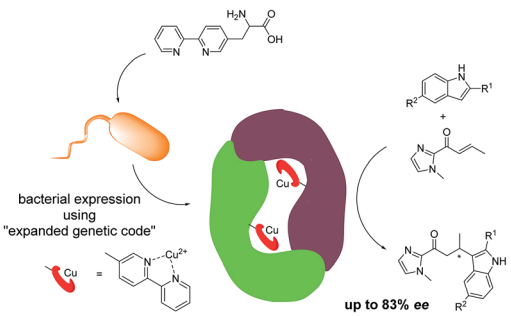

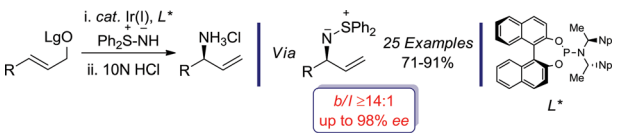

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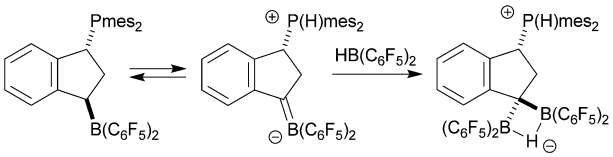
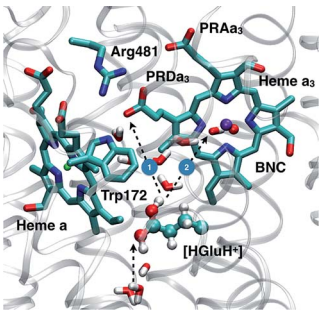


$(C_6F_5)_2B$-CH_3: pK_a(calcd) = 16.2 (in dichloromethane)



CORRECTION