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IN THIS ISSUE

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Cover
See Dominic J. Hare, Philip A. Doble *et al.*, pp. 5383–5393.
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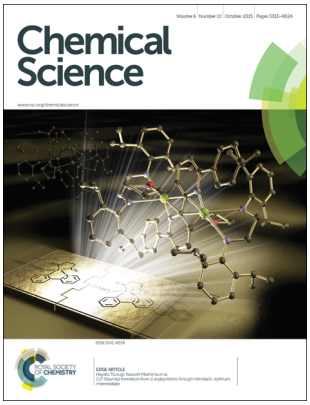

Inside cover
See Hayato Tsurugi, Kazushi Mashima *et al.*, pp. 5394–5399.
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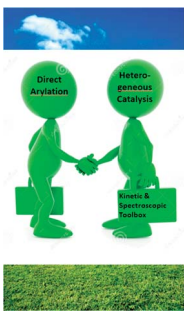
PERSPECTIVE



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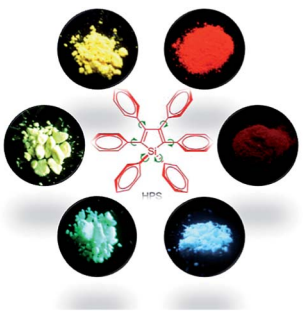

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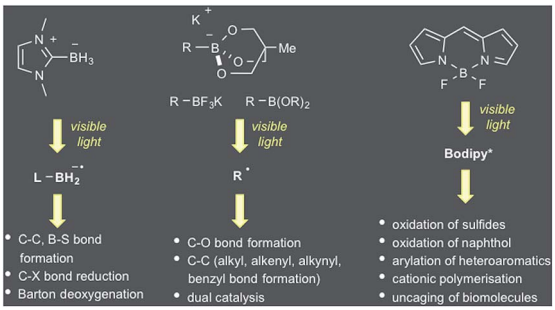

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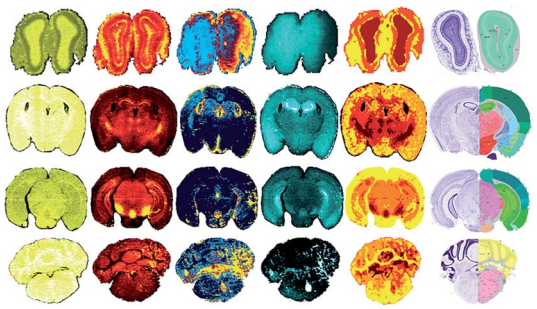

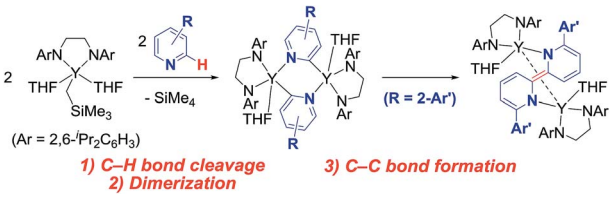

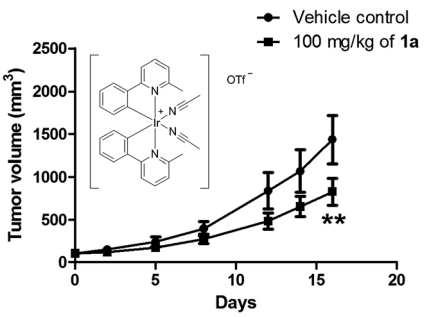

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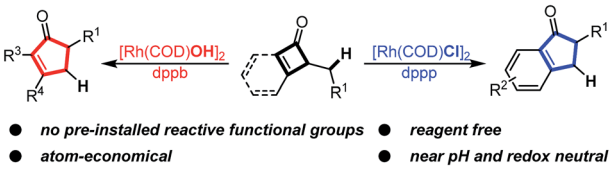
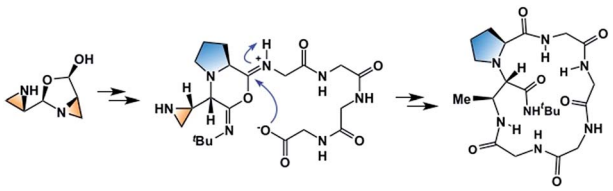
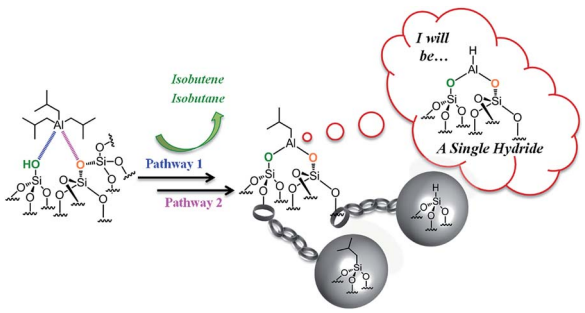
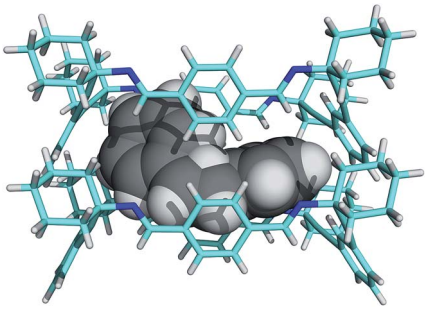
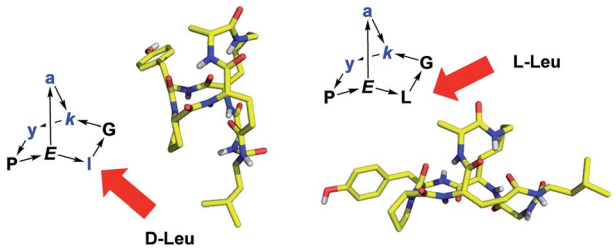






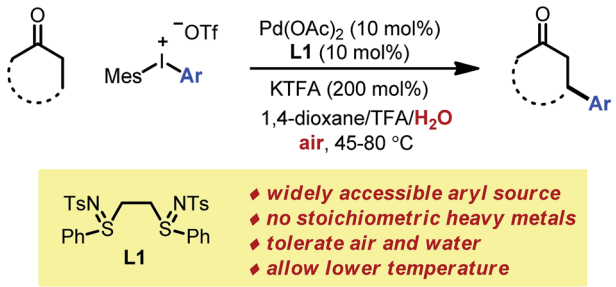




Bridged bicyclic peptides as potential drug scaffolds: synthesis, structure, protein binding and stability

Marco Bartoloni, Xian Jin, Maria José Marcaida, João Banha, Ivan Dibonaventura, Swathi Bongoni, Kathrin Bartho, Olivia Gräbner, Michael Sefkow, Tamis Darbre and Jean-Louis Reymond*

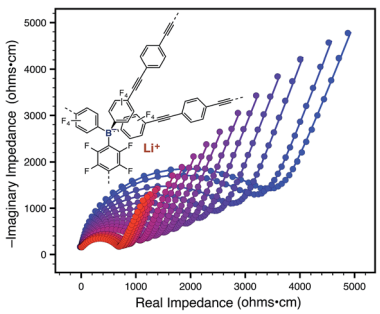
Diastereomeric norbornapeptides represent globular scaffolds with geometries determined by the chirality of amino acid residues and sharing structural features of β-turns and α-helices.



Palladium-catalyzed direct β-arylation of ketones with diaryliodonium salts: a stoichiometric heavy metal-free and user-friendly approach

Zhongxing Huang, Quynh P. Sam and Guangbin Dong*

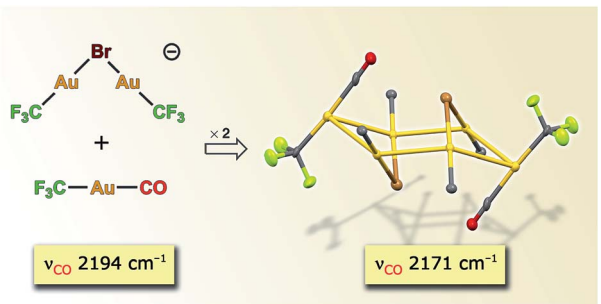
A user-friendly protocol for the Pd-catalyzed direct β-arylation of ketones is described, which avoids the use of stoichiometric heavy metals.



Tetraarylborate polymer networks as single-ion conducting solid electrolytes

Jeffrey F. Van Humbeck, Michael L. Aubrey, Alaaeddin Alsbaiee, Rob Ameloot, Geoffrey W. Coates, William R. Dichtel and Jeffrey R. Long*

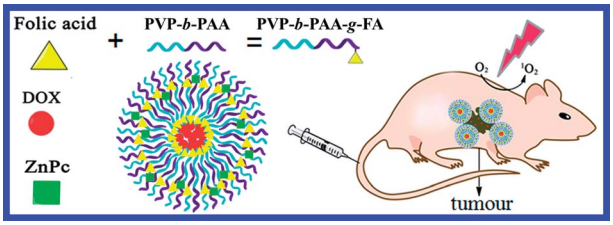
A new family of solid polymer electrolytes based upon anionic tetrakis(phenyl)borate tetrahedral nodes and linear bis-alkyne linkers is reported.

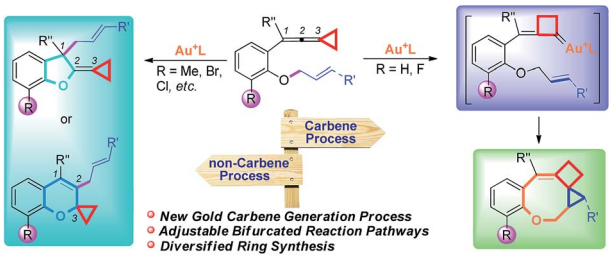


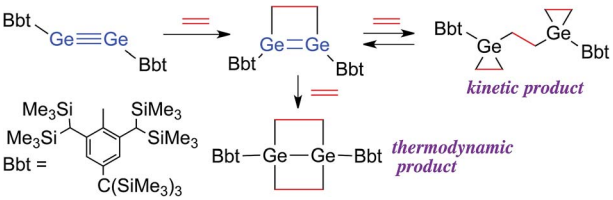
A hexanuclear gold carbonyl cluster

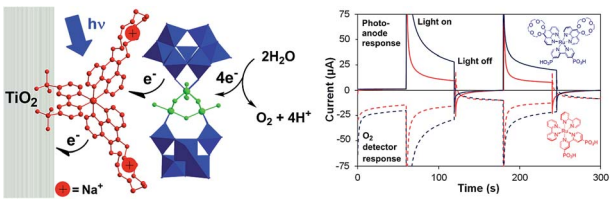
Sonia Martínez-Salvador, Larry R. Falvello, Antonio Martín and Babil Menjón*

Aurophilic interactions are responsible for the spontaneous formation of a *cyclo*-Au_6 carbonyl cluster whereby significant ν_{CO} lowering is observed.









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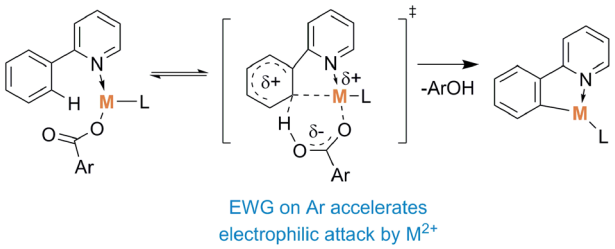
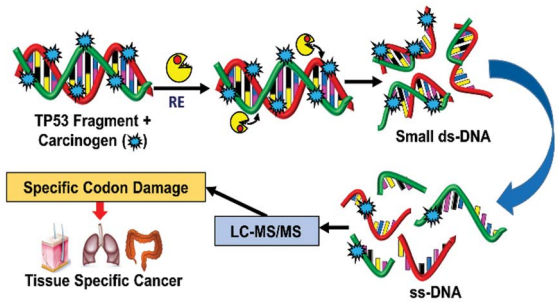


Carboxylate-assisted C–H activation of phenylpyridines with copper, palladium and ruthenium: a mass spectrometry and DFT study

A. Gray, A. Tsybizova and J. Roithova*

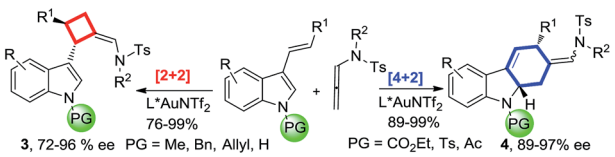
The transition state of metal carboxylate mediated C–H activation is associated with carbon–metal bond formation supported by electron-poor carboxylates.



Chemical selectivity of nucleobase adduction relative to *in vivo* mutation sites on exon 7 fragment of p53 tumor suppressor gene

Spundana Malla, Karteek Kadimisetty, You-Jun Fu, Dharamainder Choudhary, Ingela Jansson, John B. Schenkman and James F. Rusling*

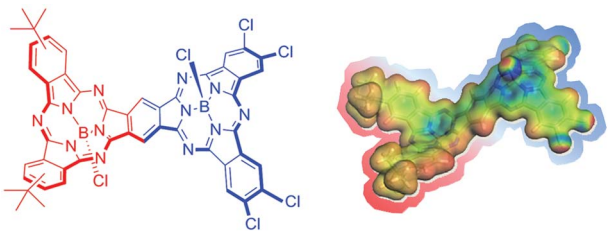
A 32-bp fragment of P53 gene reacted with benzo[*a*]pyrene metabolite BPDE was analyzed by LC-MS/MS. Chemically reactive sites were similar to frequently mutated codons in tumors.



Enantioselective gold-catalyzed intermolecular [2+2] *versus* [4+2]-cycloadditions of 3-styrylindoles with *N*-allenamides: observation of interesting substituent effects

Yidong Wang, Peichao Zhang, Yuan Liu, Fei Xia* and Junliang Zhang*

The cycloaddition mode ([2+2] *vs.* [4+2]) can be unexpectedly switched by the simple modification of the *N*-substituent of the 3-styrylindoles.



A push–pull unsymmetrical subphthalocyanine dimer

Germán Zango, Johannes Zirzlmeier, Christian G. Claessens, Timothy Clark,* M. Victoria Martínez-Díaz,* Dirk M. Guldi* and Tomás Torres*

Unsymmetrical subphthalocyanine fused dimers have been prepared, resulting in unprecedented push–pull π-extended curved aromatic macrocycles.

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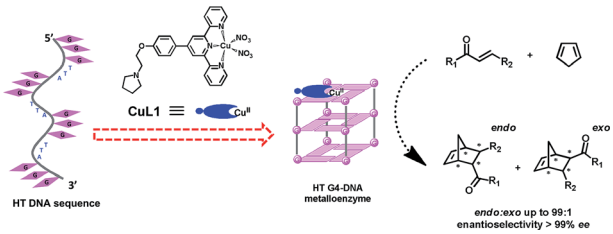

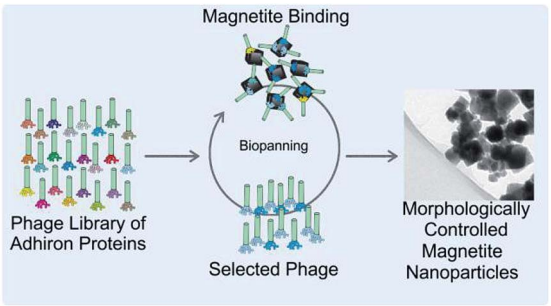

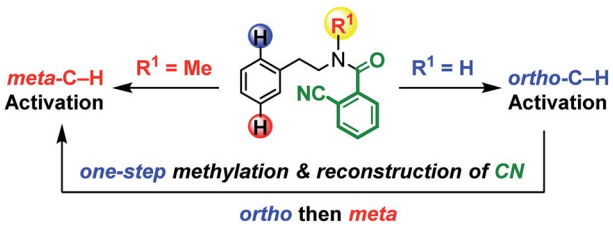

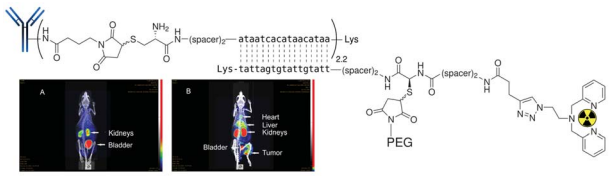

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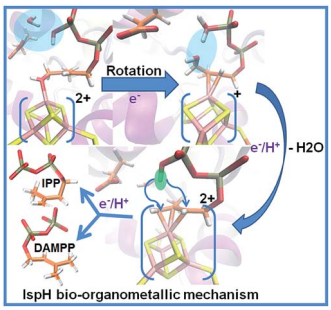

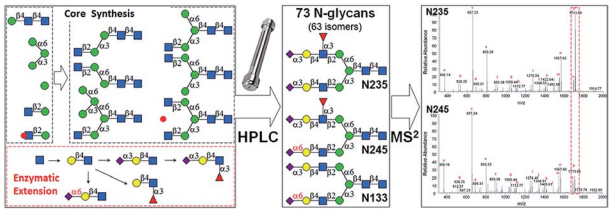

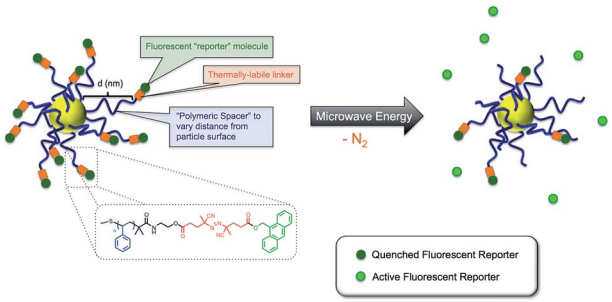

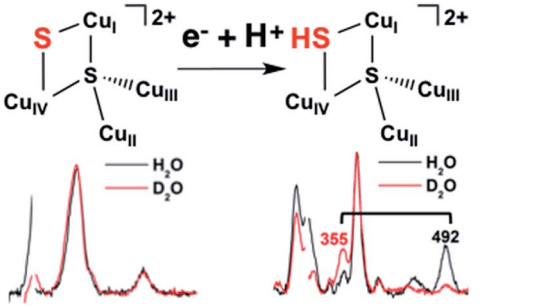

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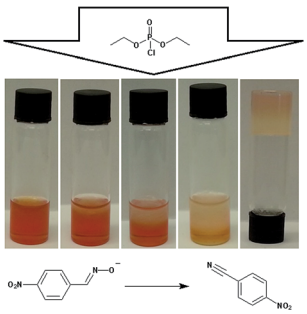
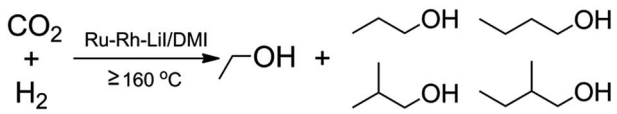


Detection and remediation of organophosphorus compounds by oximate containing organogels

Jennifer R. Hiscock, Mark R. Sambrook, Neil J. Wells and Philip A. Gale*

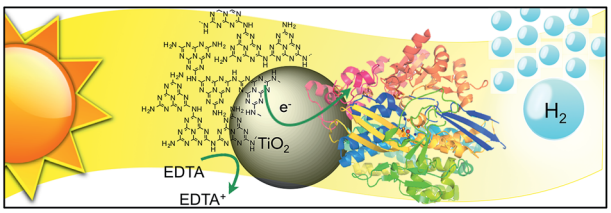
A series of supramolecular diamide organogels containing a reactive compound for the remediation of organophosphorus (OP) species, in particular OP chemical warfare agents (CWAs), has been prepared in DMSO.



Highly selective hydrogenation of CO_2 into C_{2+} alcohols by homogeneous catalysis

Qingli Qian,* Meng Cui, Zhenhong He, Congyi Wu, Qinggong Zhu, Zhaofu Zhang, Jun Ma, Guanying Yang, Jingjing Zhang and Buxing Han*

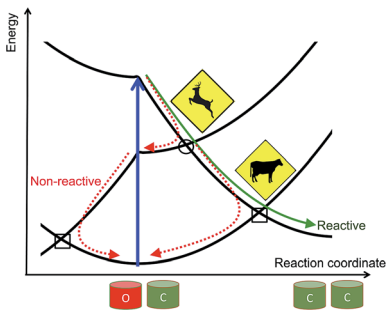
Methanol, ethanol, propanol, 2-methyl propanol, butanol, and 2-methyl butanol were produced in homogeneous CO_2 hydrogenation with a selectivity for C_{2+} alcohols of 96.4%.



Carbon nitride–TiO_2 hybrid modified with hydrogenase for visible light driven hydrogen production

Christine A. Caputo, Lidong Wang, Radim Beranek and Erwin Reisner*

Solar light driven hydrogen production with a heterogenised hydrogenase on a carbon nitride–TiO_2 hybrid is reported that sets a new benchmark for photo-H_2 production.



A curve-crossing model to rationalize and optimize diarylethene dyads

Benjamin Lasorne,* Arnaud Fihey, David Mendive-Tapia and Denis Jacquemin*

Extra crossing points play a key role in the photochemistry of diarylethene dyads.

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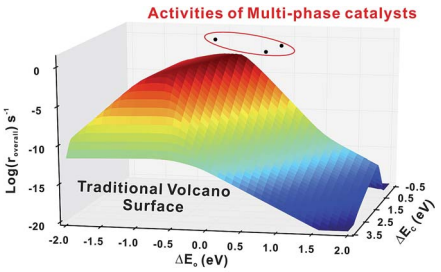
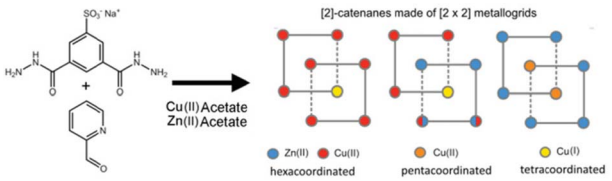
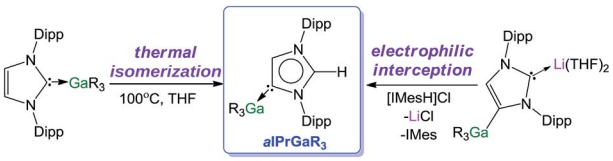
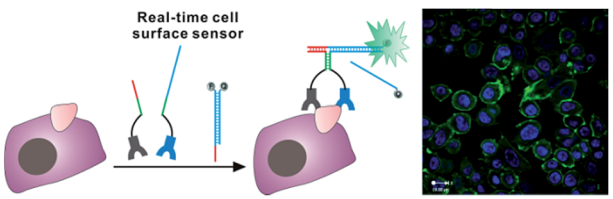


Multi-phase catalysts VS. Mono-phase catalysts







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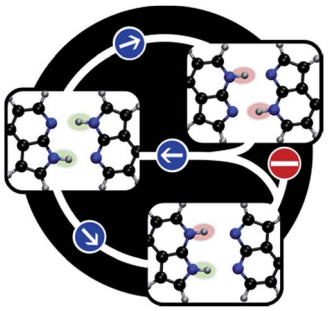

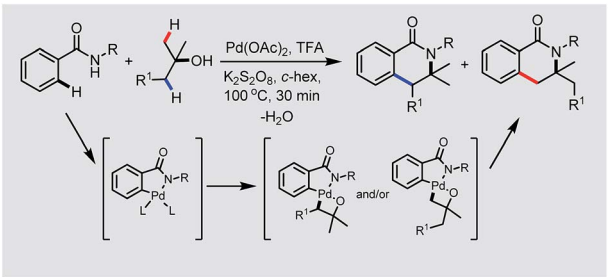

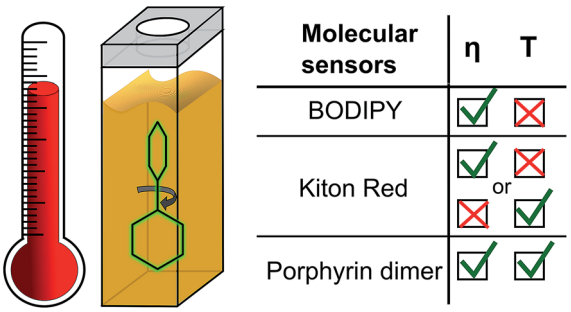

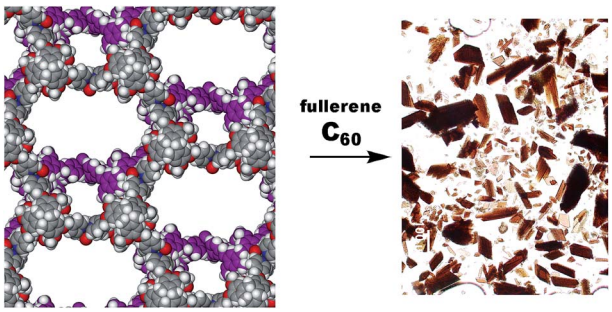

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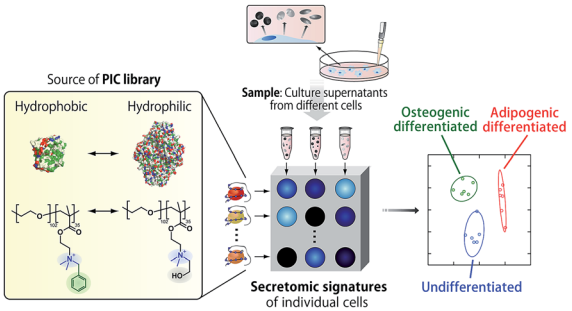

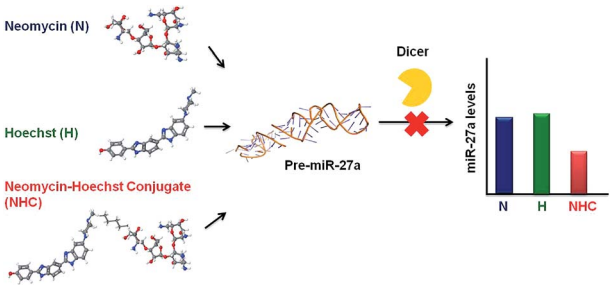

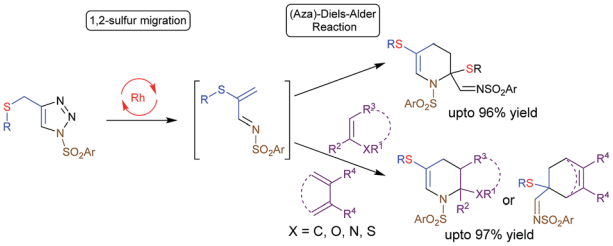

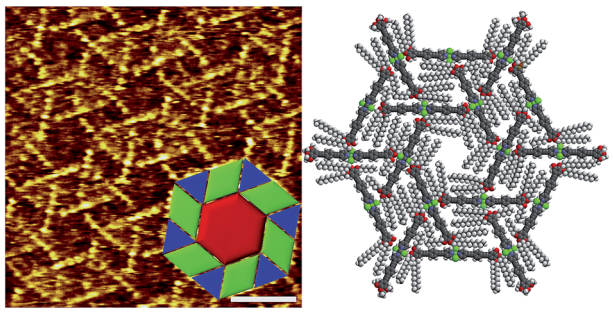

EDGE ARTICLES

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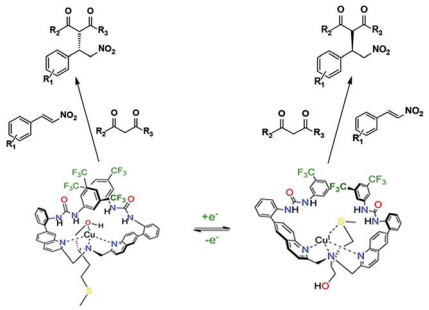
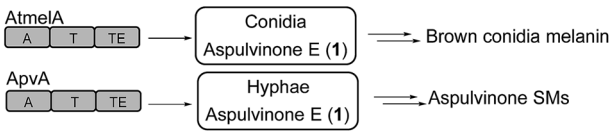
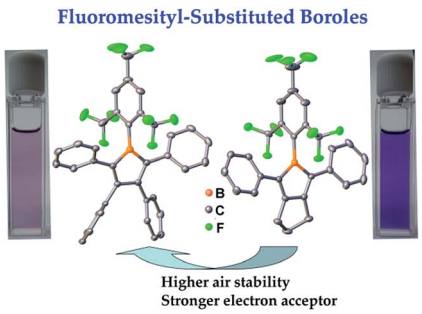
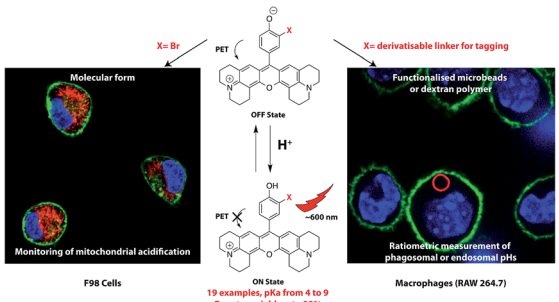
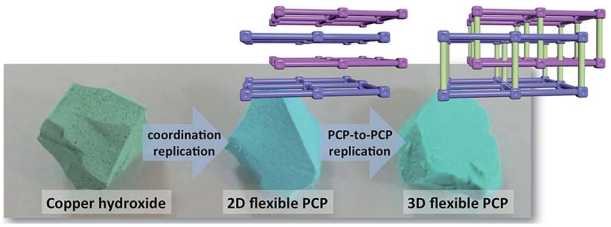






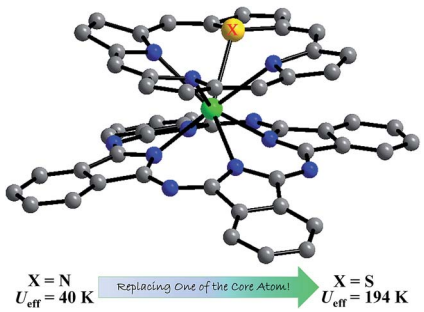




Mesoscopic superstructures of flexible porous coordination polymers synthesized *via* coordination replication

Kenji Sumida, Nirmalya Moitra, Julien Reboul, Shotaro Fukumoto, Kazuki Nakanishi, Kazuyoshi Kanamori, Shuhei Furukawa* and Susumu Kitagawa*

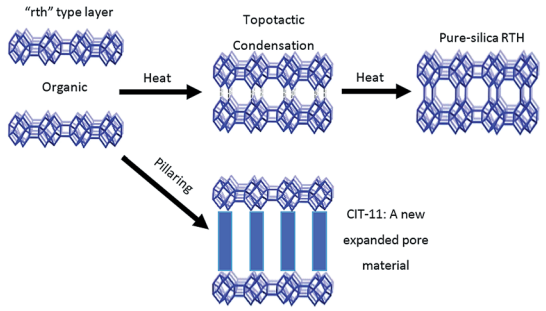
Monolithic superstructures of two- and three-dimensional flexible frameworks are prepared *via* coordination replication from a copper hydroxide parent phase.



Rational enhancement of the energy barrier of bis(tetrapyrrole) dysprosium SMMs *via* replacing atom of porphyrin core

Wei Cao, Chen Gao, Yi-Quan Zhang, Dongdong Qi, Tao Liu,* Kang Wang, Chunying Duan, Song Gao* and Jianzhuang Jiang*

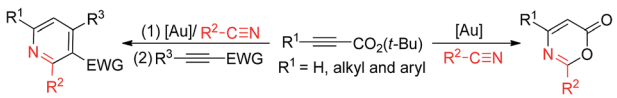
Replacing a porphyrin N atom induces higher electrostatic environment anisotropy around the Dy center, giving the highest energy barrier among bis(tetrapyrrole) Dy SMMs.



Synthesis of the RTH-type layer: the first small-pore, two dimensional layered zeolite precursor

Joel E. Schmidt, Dan Xie and Mark E. Davis*

The "rth" type layer is the first porous 2D zeolite layer; it forms zeolite RTH *via* topotactic condensation or can be pillared to create a thermally stable, expanded pore material.

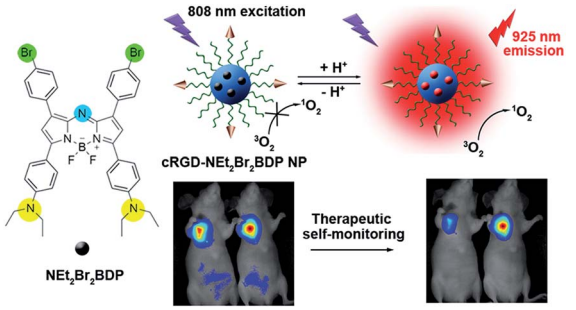


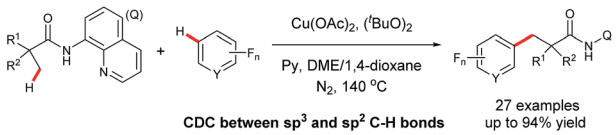
Gold-catalyzed formal [4π + 2π]-cycloadditions of propiolate derivatives with unactivated nitriles

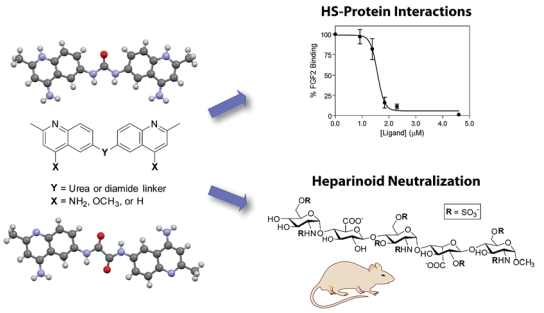
Somnath Narayan Karad, Wei-Kang Chung and Rai-Shung Liu*

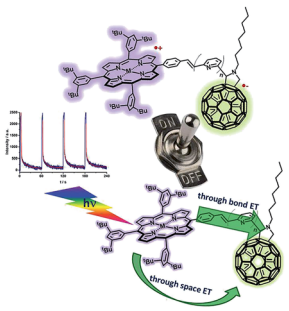
Gold-catalyzed hetero-[4π + 2π]-cycloadditions of *tert*-butyl propiolates with unactivated nitriles are described. This new finding enables a one-pot gold-catalyzed synthesis of highly substituted pyridines.

EDGE ARTICLES









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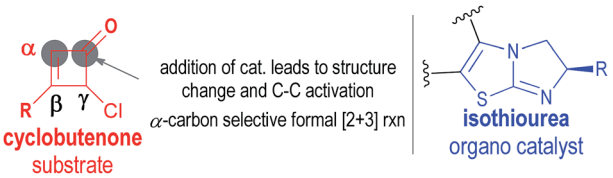
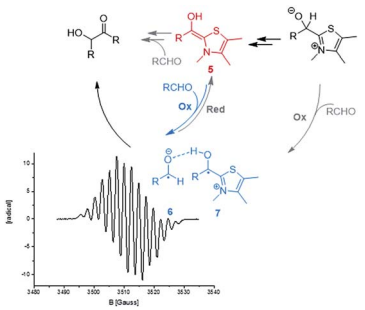


Cycloaddition of cyclobutenone and azomethine imine enabled by chiral isothiourea organic catalysts

Bao-Sheng Li, Yuhuang Wang, Zhichao Jin and Yonggui Robin Chi*

An organocatalytic carbon–carbon bond activation of γ-mono-chlorine substituted cyclobutenone provides an α-carbon selective cycloadduct with excellent stereoselectivites.



NHC-catalysed benzoin condensation – is it all down to the Breslow intermediate?

Julia Rehbein,* Stephanie-M. Ruser and Jenny Phan

The NHC-catalysed benzoin condensation has been studied mechanistically by a combination of experimental and computational chemistry. The presented EPR-spectroscopic and computational data provide evidence for a radical pair as a potential second key-intermediate that is derived from the Breslow-intermediate *via* an SET process.

CORRECTIONS

Correction: Characterizing chain processes in visible light photoredox catalysis

Megan A. Cismesia and Tehshik P. Yoon*

Correction: Fluorescent carbon dot–molecular salt hydrogels

Angelina Cayuela, Stuart R. Kennedy, M. Laura Soriano, Christopher D. Jones, Miguel Valcárcel* and Jonathan W. Steed*

CORRECTIONS

6021

Correction: Humidity-dependent surface tension measurements of individual inorganic and organic submicrometre liquid particles

Holly S. Morris, Vicki H. Grassian* and Alexei V. Tivanski*