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IN THIS ISSUE

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Cover
See Erwin Reisner *et al.*, pp. 2727–2736.
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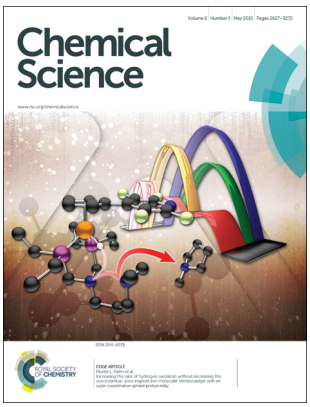

Inside cover
See Monte L. Helm *et al.*, pp. 2737–2745.
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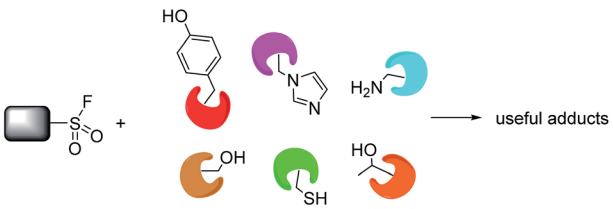
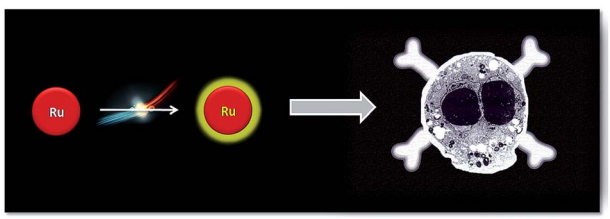
PERSPECTIVES





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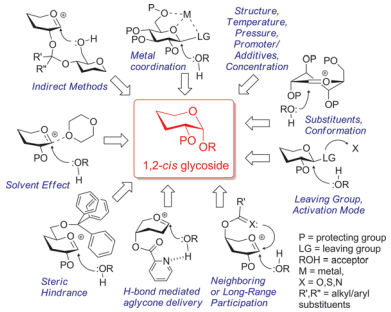
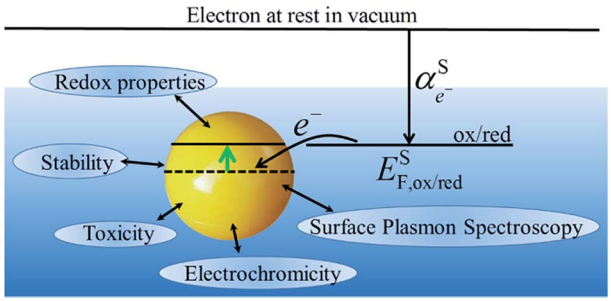
PERSPECTIVES





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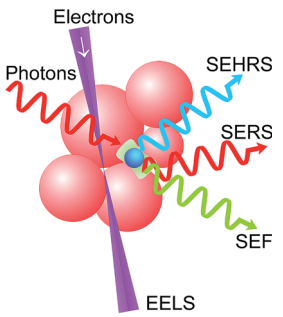

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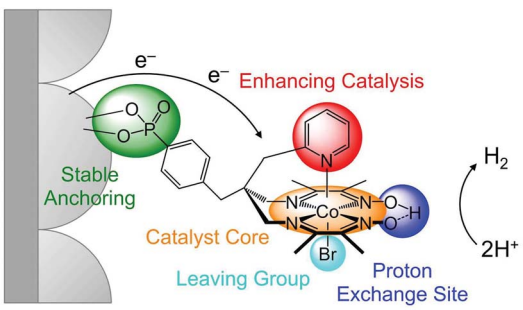

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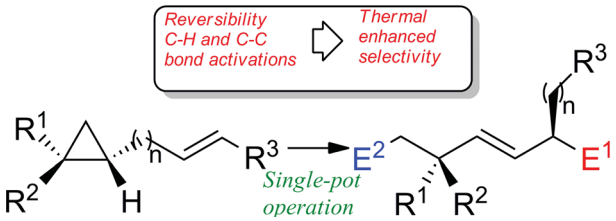

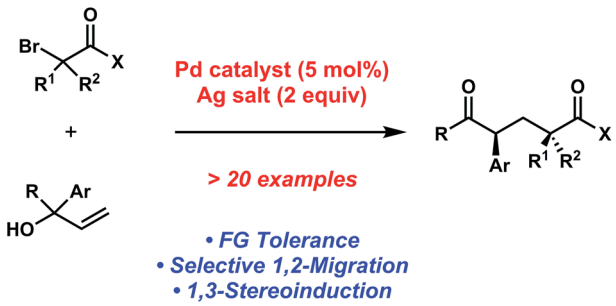

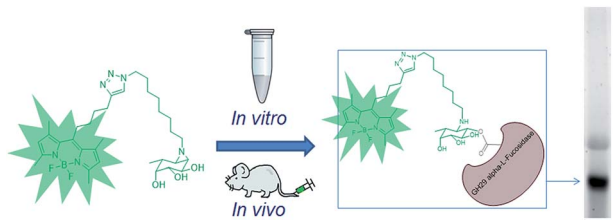

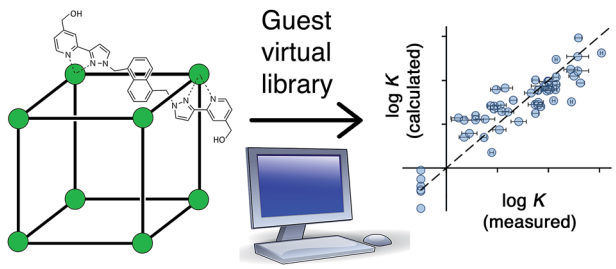

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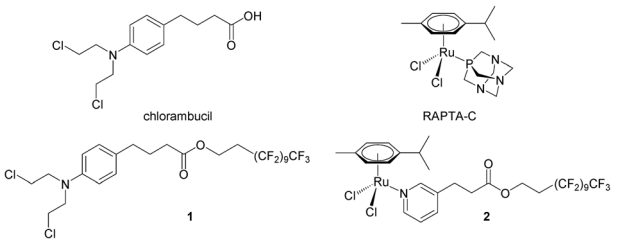
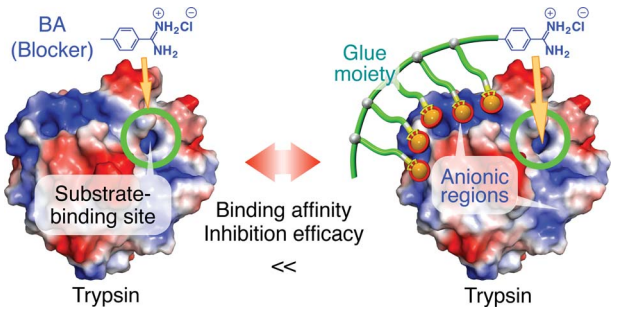


In vivo evaluation of small-molecule thermoresponsive anticancer drugs potentiated by hyperthermia

Catherine M. Clavel, Patrycja Nowak-Sliwinska, Emilia Păunescu, Arjan W. Griffioen and Paul J. Dyson*

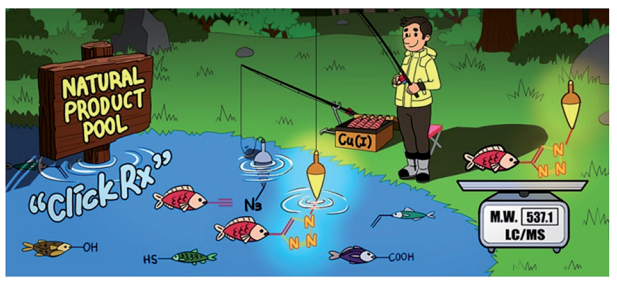
Hyperthermia used as an adjuvant with chemotherapy is highly promising in the treatment of certain cancers.



Molecular glues for manipulating enzymes: trypsin inhibition by benzamidine-conjugated molecular glues

Rina Mogaki, Kou Okuro* and Takuzo Aida*

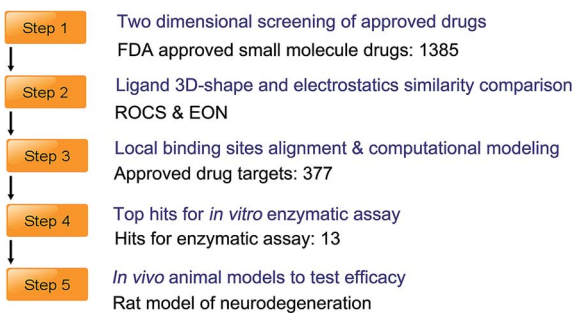
The inhibitory effect of benzamidine as blocker on the protease activity of trypsin is enhanced by covalent conjugation with bioadhesive molecular glue.



Chemical assay-guided natural product isolation *via* solid-supported chemodosimetric fluorescent probe

Hongjun Jeon, Chaemin Lim, Ji Min Lee and Sanghee Kim*

The fusion of click chemistry, fluorogenic chemodosimetry and a solid support offers advantages in identifying compounds in complex natural product mixtures.



Computational discovery and experimental verification of tyrosine kinase inhibitor pazopanib for the reversal of memory and cognitive deficits in rat model neurodegeneration

Yongliang Yang,* Guohui Li,* Dongyu Zhao, Haoyang Yu, Xiliang Zheng, Xiangda Peng, Xiaoe Zhang, Ting Fu, Xiaoqing Hu, Mingshan Niu, Xuefei Ji, Libo Zou* and Jin Wang*

Pazopanib, a tyrosine kinase inhibitor marketed for cancer treatment, abrogates the course of neurodegeneration.

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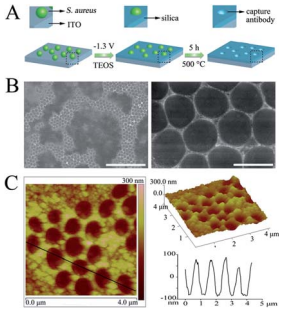

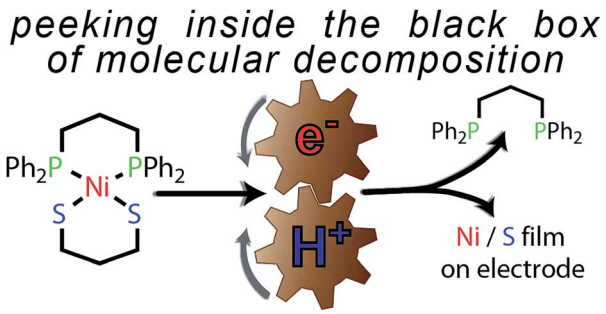

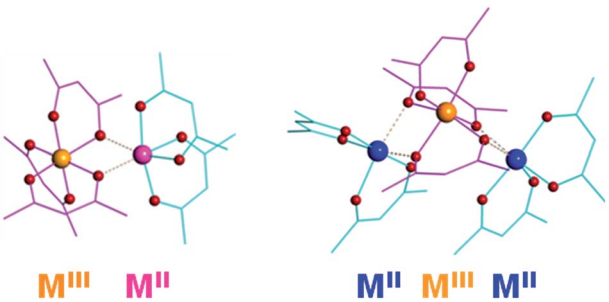

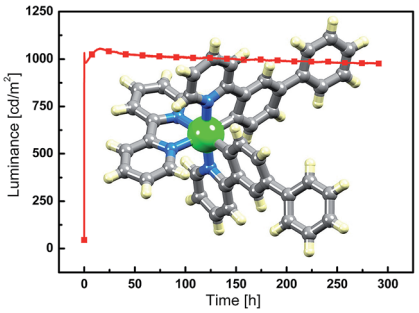

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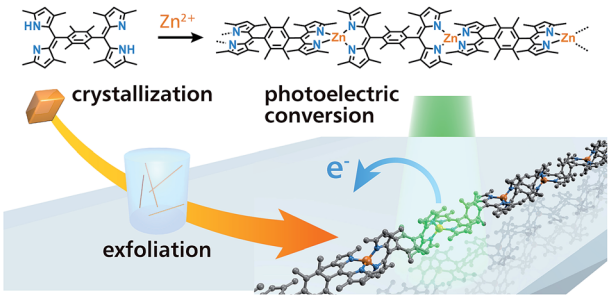
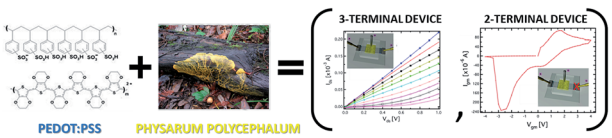


Bis(dipyrrinato)metal(II) coordination polymers: crystallization, exfoliation into single wires, and electric conversion ability

Ryota Matsuoka, Ryojun Toyoda, Ryota Sakamoto,* Mizuho Tsuchiya, Ken Hoshiko, Tatsuhiro Nagayama, Yoshiyuki Nonoguchi, Kunihisa Sugimoto, Eiji Nishibori, Tsuyoshi Kawai and Hiroshi Nishihara*

The titled coordination polymers feature crystallization, single wire exfoliation, processability, and applicability to photoelectric and thermoelectric conversion systems.

2859

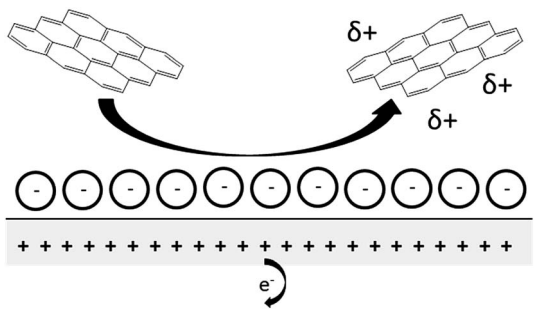


A hybrid living/organic electrochemical transistor based on the *Physarum polycephalum* cell endowed with both sensing and memristive properties

G. Tarabella, P. D'Angelo,* A. Cifarelli, A. Dimonte, A. Romeo, T. Berzina, V. Erokhin and S. Iannotta*

A hybrid bio-organic electrochemical transistor based on the *Physarum polycephalum* cell, showing a multifunctional operation (transistor and memristive-like response), has been demonstrated.

2869

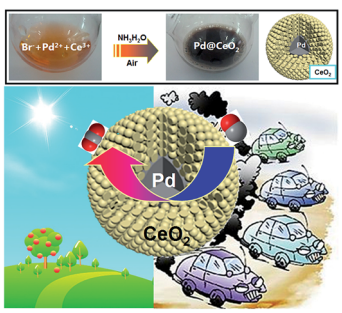


Single graphene nanoplatelets: capacitance, potential of zero charge and diffusion coefficient

Jeffrey Poon, Christopher Batchelor-McAuley, Kristina Tschulik and Richard G. Compton*

A nano-impact chronoamperometric experiment is presented here as a powerful technique for simultaneously probing important physical properties of graphene nanomaterials.

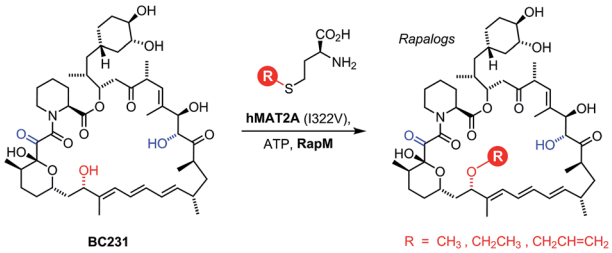
2877

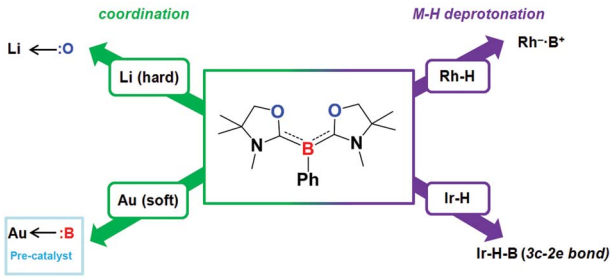


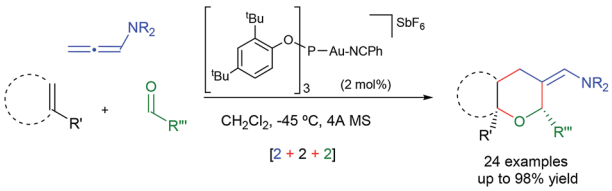
γ-Al_2O_3 supported Pd@CeO_2 core@shell nanospheres: salting-out assisted growth and self-assembly, and their catalytic performance in CO oxidation

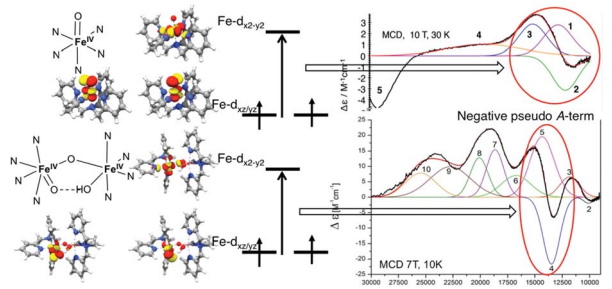
Xiao Wang, Dapeng Liu,* Junqi Li, Jiangman Zhen, Fan Wang and Hongjie Zhang*

Highly active Pd@CeO_2 core@shell nanospheres with tunable Pd core sizes for catalytic CO oxidation.









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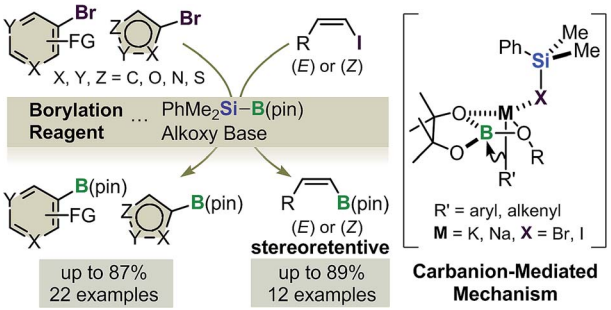

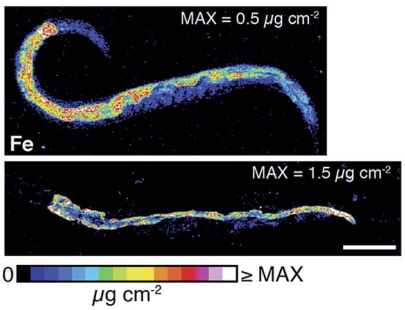

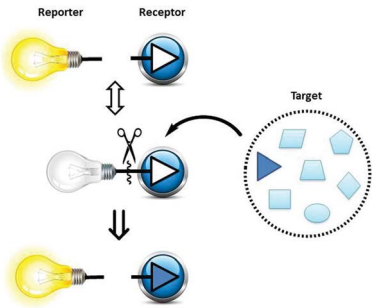

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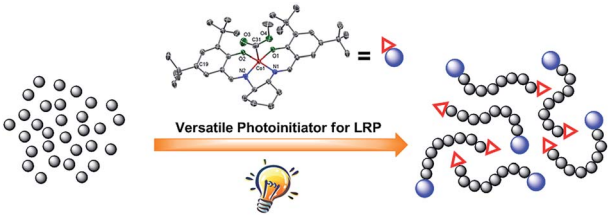
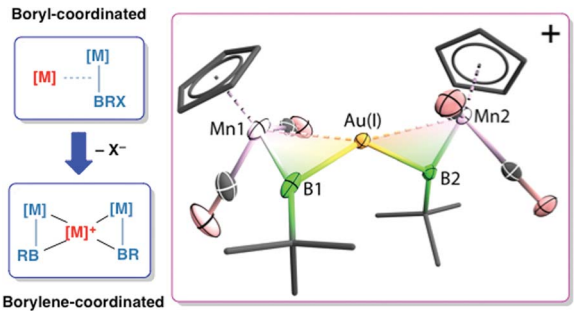


A well-defined, versatile photoinitiator (salen)Co–CO_2CH_3 for visible light-initiated living/controlled radical polymerization

Yaguang Zhao, Mengmeng Yu, Shuailin Zhang, Zhenqiang Wu, Yuchu Liu, Chi-How Peng* and Xuefeng Fu*

A well-defined organocobalt salen complex (salen)Co–CO_2CH_3 is used as a versatile photoinitiator for visible light-initiated living radical polymerization.

2989

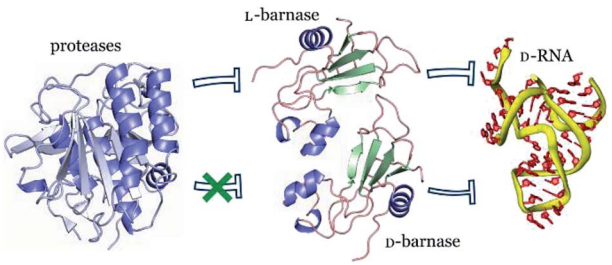


Side-on coordination of boryl and borylene complexes to cationic coinage metal fragments

Holger Braunschweig,* Krzysztof Radacki and Rong Shang

The M-(η^2-BMn) complex [(η^5-C_5H_5)$(OC)_2$Mn{μ-B(Cl)(*t*Bu)-Au(PPh_3)}] (**2**) can be functionalized *via* halide substitution reactions to afford isostructural complexes [(η^5-C_5H_5)$(OC)_2$Mn{μ-B(R)(*t*Bu)Au(PPh_3)}] (R = Ph, CCPh and NCS).

2997

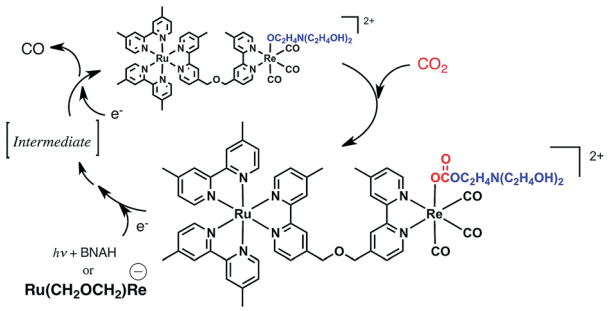


Total synthesis and biochemical characterization of mirror image barnase

Alexander A. Vinogradov, Ethan D. Evans and Bradley L. Pentelute*

Chemically prepared D-barnase catalyzes hydrolysis of native RNA and appears to be extremely stable to proteolysis.

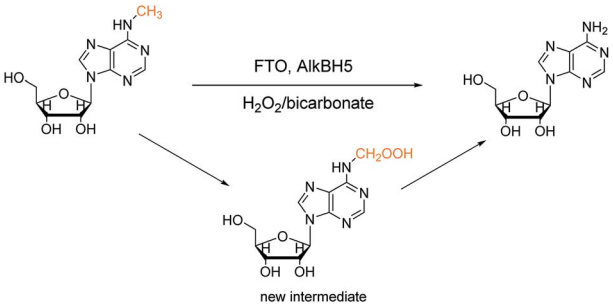
3003

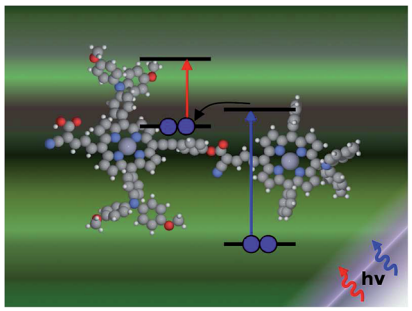


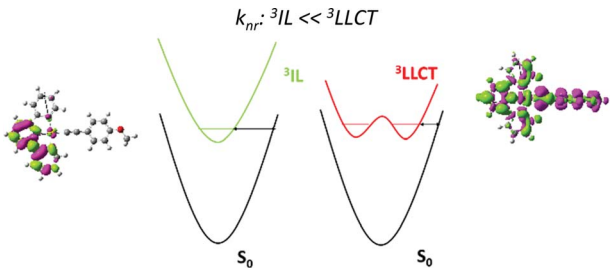
Ru(II)–Re(I) binuclear photocatalysts connected by $-CH_2XCH_2-$ (X = O, S, CH_2) for CO_2 reduction

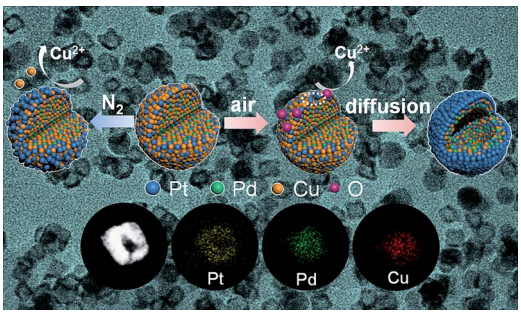
Eishiro Kato, Hiroyuki Takeda, Kazuhide Koike, Kei Ohkubo and Osamu Ishitani*

New Ru(II)–Re(I) diads with bridging ligands constructed of two diimines connected by $-CH_2OCH_2-$ or $-CH_2SCH_2-$ were synthesized and investigated as photocatalysts with enhanced oxidation power.









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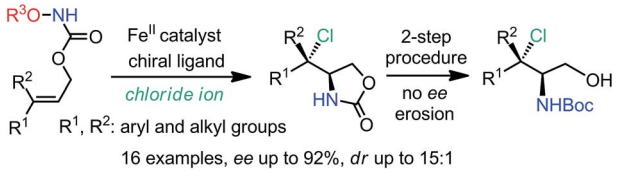
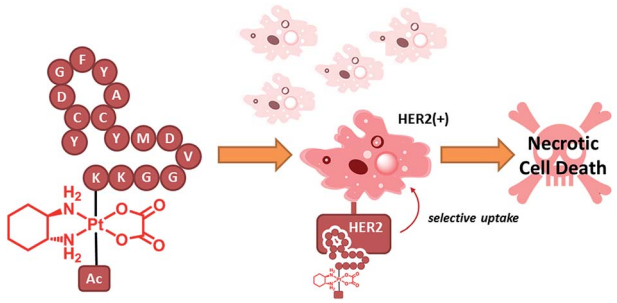


Iron(II)-catalyzed asymmetric intramolecular olefin aminochlorination using chloride ion

Cheng-Liang Zhu, Jun-Shan Tian, Zhen-Yuan Gu, Guo-Wen Xing and Hao Xu*

We report an iron-catalyzed asymmetric aminochlorination method for internal olefins; it tolerates valuable olefins that are incompatible with existing methods.

3051



Induction of targeted necrosis with HER2-targeted platinum(IV) anticancer prodrugs

Daniel Yuan Qiang Wong, Jun Han Lim and Wee Han Ang*

Platinum(IV) prodrug complexes based on the cisplatin/oxaliplatin pharmacophore, containing anti-HER2/neu targeting peptides, were designed to deliver their cytotoxic platinum(II) payload selectively to highly HER2-expressing cells. Through induction of necrotic cell death, these platinum(IV)–peptide conjugates can circumvent apoptosis-resistance pathways in targeted HER2-positive cells.

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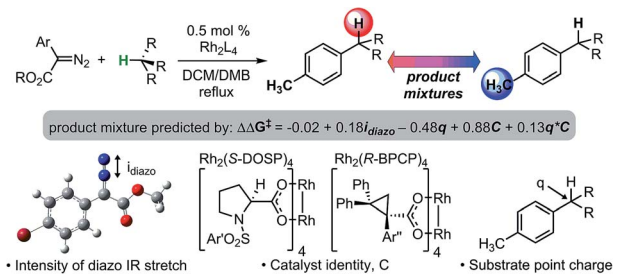
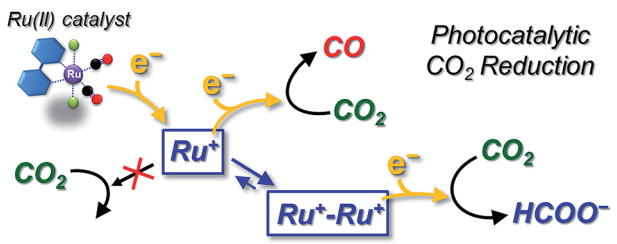


Using IR vibrations to quantitatively describe and predict site-selectivity in multivariate Rh-catalyzed C–H functionalization

Elizabeth N. Bess, David M. Guptill, Huw M. L. Davies* and Matthew S. Sigman*

Achieving selective C–H functionalization is a significant challenge that requires discrimination between many similar C–H bonds.

3063



Unexpected effect of catalyst concentration on photochemical CO_2 reduction by *trans*(Cl)–$Ru(bpy)(CO)_2Cl_2$: new mechanistic insight into the $CO/HCOO^-$ selectivity

Yusuke Kuramochi, Jun Itabashi, Kyohei Fukaya, Akito Enomoto, Makoto Yoshida and Hitoshi Ishida*

We found catalyst concentration dependence of the product ratio in the photochemical reduction of CO_2, and proposed a new mechanism involving a Ru(I)–Ru(I) dimer intermediate.

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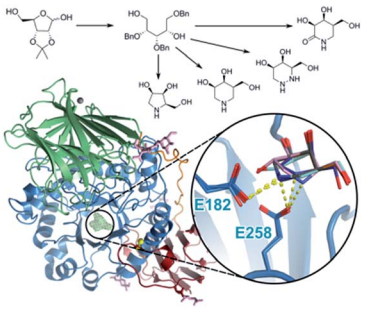

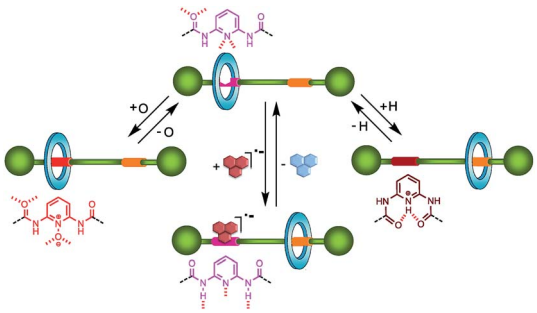

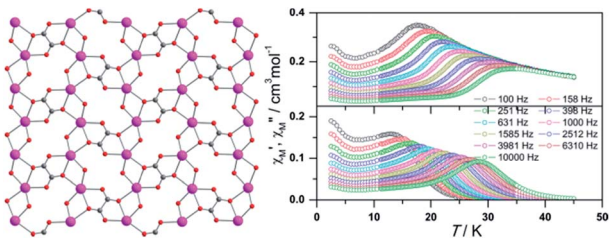

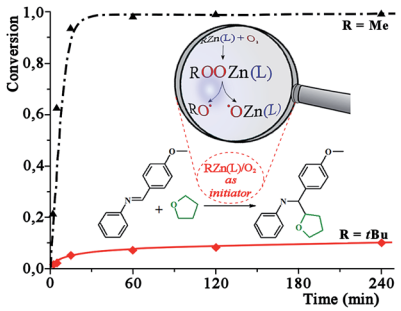

EDGE ARTICLES

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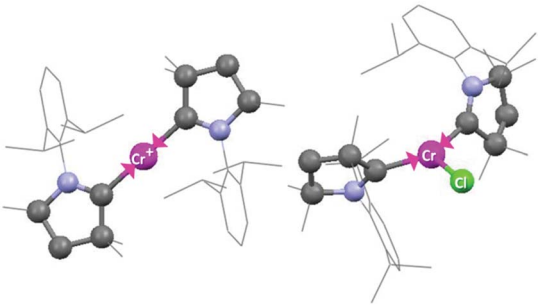

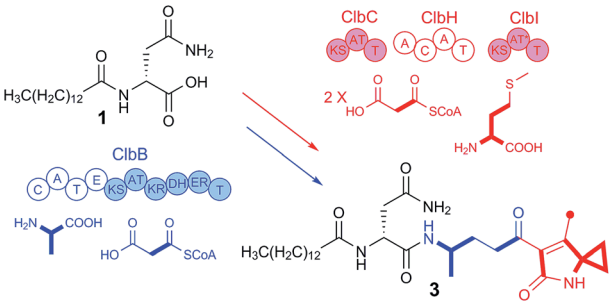

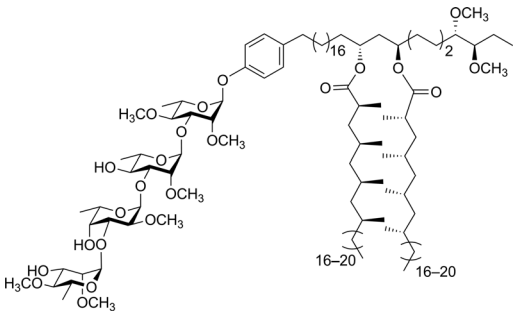

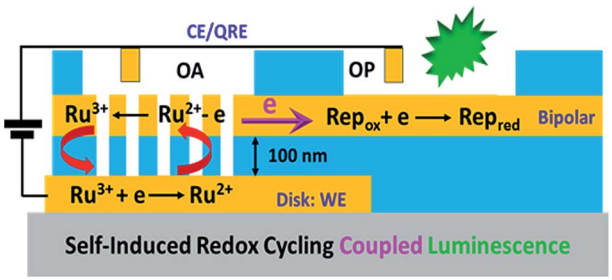

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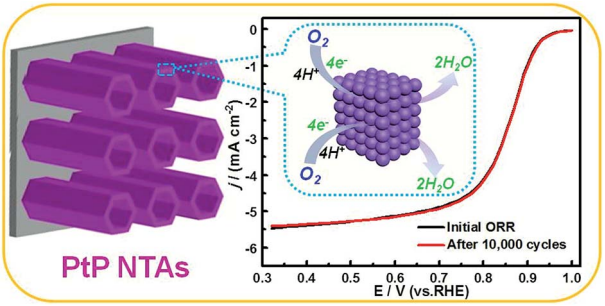
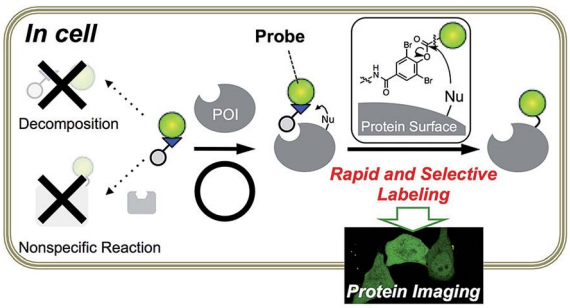
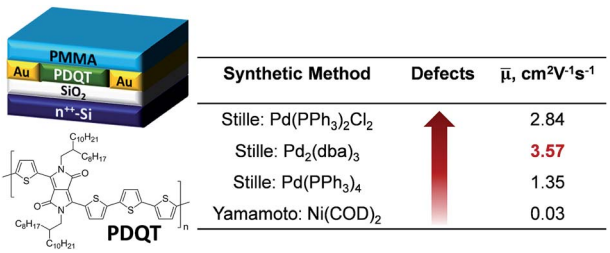
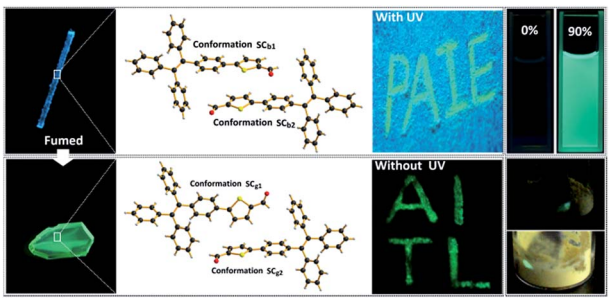






Synthetic Method	Defects	$\bar{\mu}$, $cm^2V^{-1}s^{-1}$
Stille: $Pd(PPh_3)_2Cl_2$		2.84
Stille: $Pd_2(dba)_3$		3.57
Stille: $Pd(PPh_3)_4$		1.35
Yamamoto: $Ni(COD)_2$		0.03



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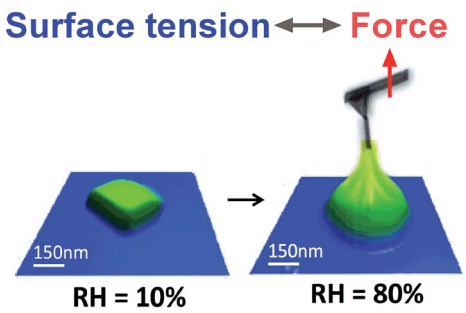
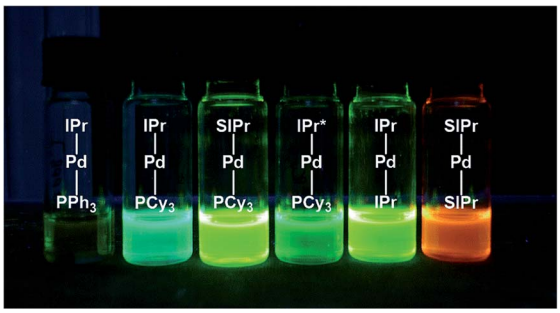


Humidity-dependent surface tension measurements of individual inorganic and organic submicrometre liquid particles

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

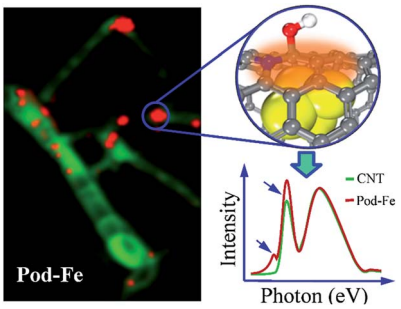
Atomic force microscopy has been utilized to measure the surface tension of atmospherically relevant droplets smaller than one micron.



Palladium(0) NHC complexes: a new avenue to highly efficient phosphorescence

Adam F. Henwood, Mathieu Lesieur, Ashu K. Bansal, Vincent Lemaur, David Beljonne, David G. Thompson, Duncan Graham, Alexandra M. Z. Slawin, Ifor D. W. Samuel,* Catherine S. J. Cazin* and Eli Zysman-Colman*

We report the first examples of highly luminescent di-coordinated Pd(0) complexes.



Visualizing electronic interactions between iron and carbon by X-ray chemical imaging and spectroscopy

Xiaoqi Chen, Jianping Xiao, Jian Wang, Dehui Deng,* Yongfeng Hu, Jigang Zhou, Liang Yu, Thomas Heine, Xiulian Pan and Xinhe Bao*

Pod-like carbon nanotube with encapsulated iron particles (Pod-Fe) was used as a well-defined model to study the electronic interaction between carbon shells and the iron particles by scanning transmission X-ray microscopy (STXM).

CORRECTIONS

Correction: Electrostatic control of regioselectivity *via* ion pairing in a Au(I)-catalyzed rearrangement

Vivian M. Lau, Craig F. Gorin and Matthew W. Kanan*

CORRECTIONS

3269

Correction: Photoinduced dynamics of a cyanine dye: parallel pathways of non-radiative deactivation involving multiple excited-state twisted transients

Srigokul Upadhyayula, Vicente Nuñez, Eli M. Espinoza, Jillian M. Larsen, Duoduo Bao, Dewen Shi, Jenny T. Mac, Bahman Anvari and Valentine I. Vullev*