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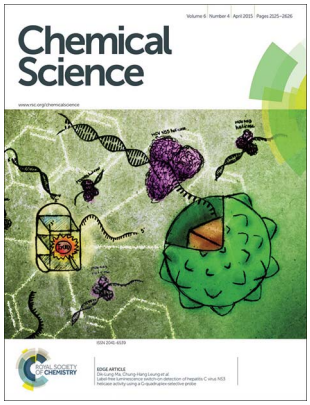
IN THIS ISSUE

ISSN 2041-6539 CODEN CSHCBM 6(4) 2125–2626 (2015)



Cover
See Dik-Lung Ma, Chung-Hang Leung *et al.*, pp. 2166–2171.
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Inside cover
See Basile Commarieu and Jerome P. Claverie, pp. 2172–2181.
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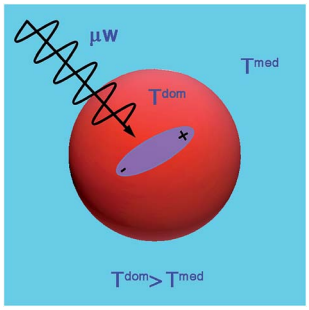
PERSPECTIVE

2144

On the existence of and mechanism for microwave-specific reaction rate enhancement

Gregory B. Dudley, Ranko Richert and A. E. Stiegman*

Microwave-specific chemical rate enhancement originates from the selective heating and accumulation of energy by solvated dipolar molecules in solution.



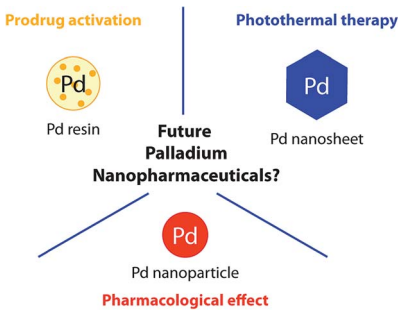
MINIREVIEWS

2153

Palladium: a future key player in the nanomedical field?

Anaëlle Dumas and Patrick Couvreur*

Palladium nanostructures with therapeutic potential are emerging as innovative tools in the nanomedical field.



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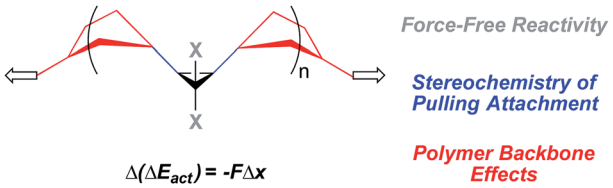
MINIREVIEWS

2158

Molecular engineering of mechanophore activity for stress-responsive polymeric materials

Cameron L. Brown and Stephen L. Craig*

Molecular-level design principles by which to engineer enhanced mechanophore activity are reviewed, with an emphasis on quantitative structure–activity studies determined for a family of *gem*-dihalocyclopropane mechanophores.



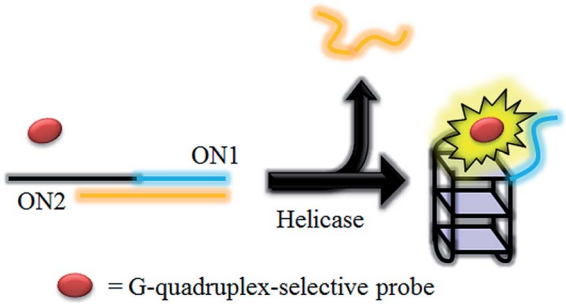
EDGE ARTICLES

2166

Label-free luminescence switch-on detection of hepatitis C virus NS3 helicase activity using a G-quadruplex-selective probe

Ka-Ho Leung, Hong-Zhang He, Bingyong He, Hai-Jing Zhong, Sheng Lin, Yi-Tao Wang, Dik-Lung Ma* and Chung-Hang Leung*

A novel luminescent G-quadruplex-selective iridium(III) complex was employed in a label-free G-quadruplex-based detection assay for hepatitis C virus NS3 helicase activity.

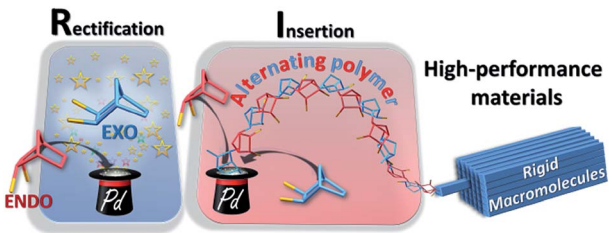


2172

Bypassing the lack of reactivity of *endo*-substituted norbornenes with the catalytic rectification–insertion mechanism

Basile Commarieu and Jerome P. Claverie*

The novel rectification–insertion mechanism for the polymerization of polar norbornenes: making alternating copolymers from a single monomer.

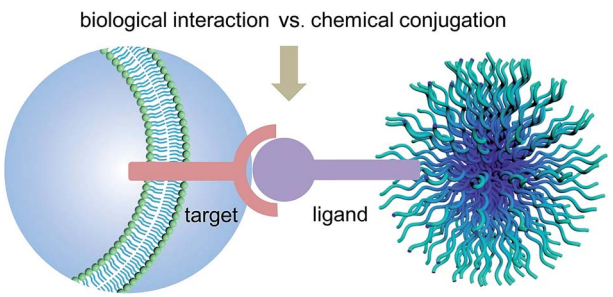


2182

Bioorthogonal oxime ligation mediated *in vivo* cancer targeting

Li Tang, Qian Yin, Yunxiang Xu, Qin Zhou, Kaimin Cai, Jonathan Yen, Lawrence W. Dobrucki and Jianjun Cheng*

Here, we report an *in vivo* cancer targeting strategy mediated by bioorthogonal oxime ligation.



EDGE ARTICLES

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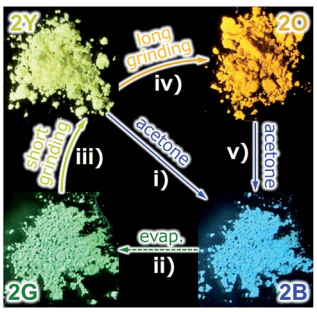
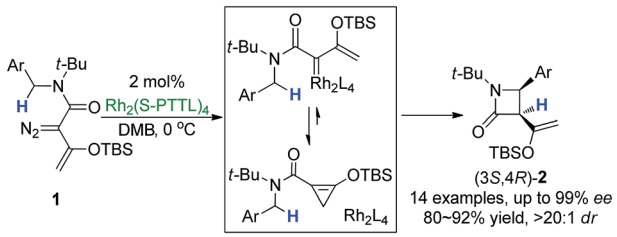


Interconvertible multiple photoluminescence color of a gold(I) isocyanide complex in the solid state: solvent-induced blue-shifted and mechano-responsive red-shifted photoluminescence

Tomohiro Seki, Taichi Ozaki, Takuma Okura, Kiyotaka Asakura, Aya Sakon, Hidehiro Uekusa* and Hajime Ito*

We report the first example of a mechanochromic compound that can switch between four individual types of photoluminescence in the solid state.

2196

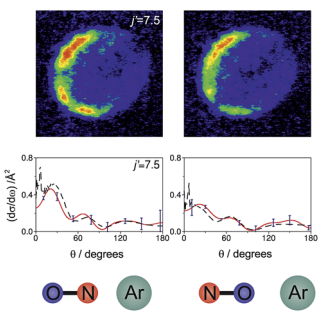


Enantioselective *cis*-β-lactam synthesis by intramolecular C–H functionalization from enoldiazoacetamides and derivative donor–acceptor cyclopropenes

Xinfang Xu,* Yongming Deng, David N. Yim, Peter Y. Zavalij and Michael P. Doyle*

β-Lactam derivatives are produced through donor–acceptor cyclopropene intermediates in high yield with exclusive *cis*-diastereoselectivity, and high enantiocontrol.

2202

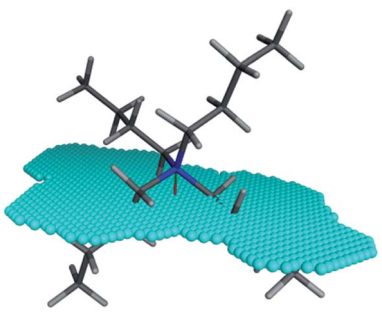


Steric effects and quantum interference in the inelastic scattering of NO(X) + Ar

B. Nichols, H. Chadwick, S. D. S. Gordon, C. J. Eyles, B. Hornung, M. Brouard,* M. H. Alexander, F. J. Aoiz, A. Gijsbertsen and S. Stolte

New measurements of the differential steric effect for NO + Ar inelastic scattering highlight the importance of quantum interference.

2211



Redefining *q*: quaternary ammonium cross sectional area (XSA) as a general descriptor for transport-limiting PTC rate approximations

S. E. Denmark* and J. J. Henle

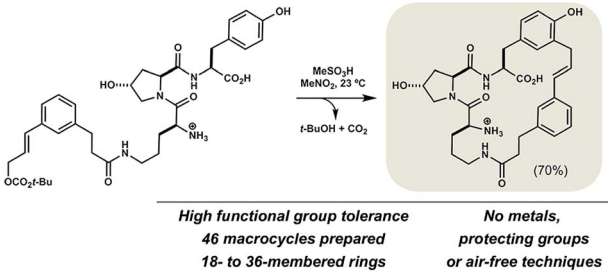
Several descriptors were studied in transport-rate limiting PTC, with amphiphilic cross-sectional area (XSA) identified as a single-descriptor model of rate.

2219

Large ring-forming alkylations provide facile access to composite macrocycles

Tristan E. Rose, Kenneth V. Lawson and Patrick. G. Harran*

Friedel–Crafts cinnamylations can form unique and varied macrocycles with unmatched ease and functional group tolerance.

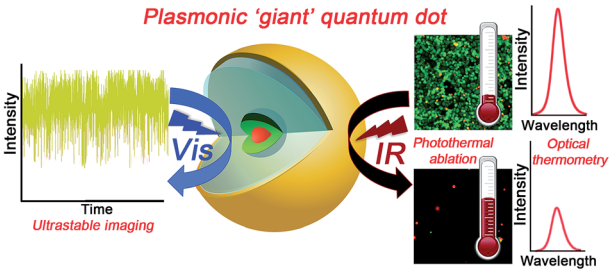


2224

Plasmonic giant quantum dots: hybrid nanostructures for truly simultaneous optical imaging, photothermal effect and thermometry

N. S. Karan, A. M. Keller, S. Sampat, O. Roslyak, A. Arefin, C. J. Hanson, J. L. Casson, A. Desireddy, Y. Ghosh, A. Piryatinski, R. Iyer, H. Htoon, A. V. Malko and J. A. Hollingsworth*

A new compact and multifunctional hybrid semiconductor–metal nanostructure is elucidated and demonstrated for real-time optical imaging, photothermal heating, and *in situ* thermometry.



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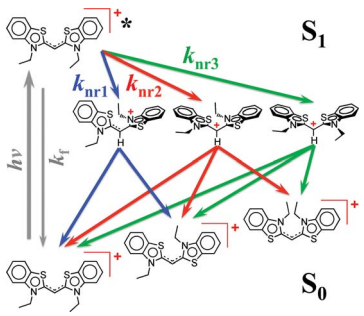
Photoinduced dynamics of a cyanine dye: parallel pathways of non-radiative deactivation involving multiple excited-state twisted transients

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

A photoexcited cyanine dye deactivates *via* multiple non-radiative pathways, only one of which is principally responsible for quenching its fluorescence.



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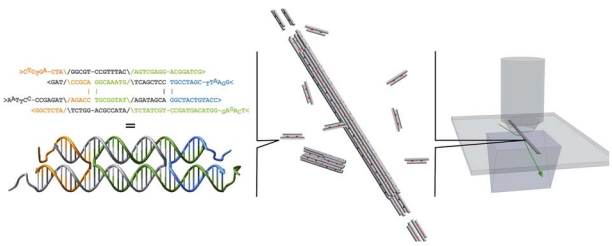
Thermodynamics and kinetics of DNA nanotube polymerization from single-filament measurements

Rizal F. Hariadi, Bernard Yurke and Erik Winfree*

Single-filament measurement of the thermodynamic and kinetic parameters of DNA nanotube assembly supports a polymerization/depolymerization model sharing common features with cytoskeletal polymer models.



EDGE ARTICLES

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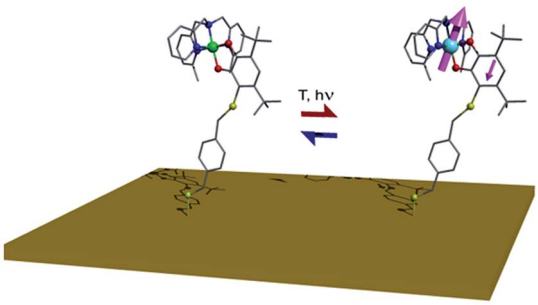
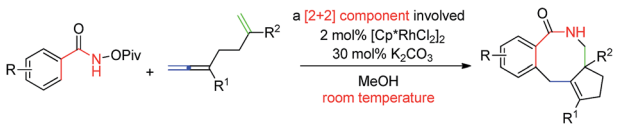


Thermal and optical control of electronic states in a single layer of switchable paramagnetic molecules

Giordano Poneti,* Lorenzo Poggini, Matteo Mannini,* Brunetto Cortigiani, Lorenzo Sorace, Edwige Otero, Philippe Sainctavit, Agnese Magnani, Roberta Sessoli and Andrea Dei

Thermally and optically induced Valence Tautomeric interconversion has been observed for a monolayer of a cobalt–dioxolene complex on gold.

2275

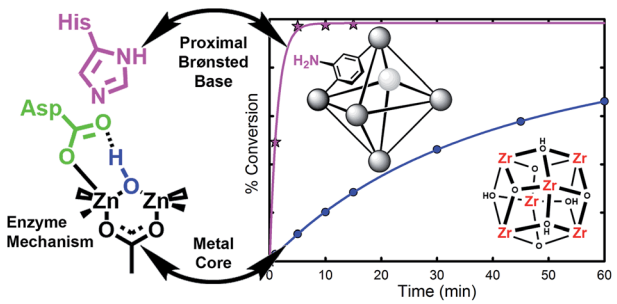


Rhodium-catalyzed C–H functionalization-based approach to eight-membered lactams

Shangze Wu, Rong Zeng, Chunling Fu, Yihua Yu, Xue Zhang* and Shengming Ma*

Fused tricyclic skeleton in one shot: a Rh^{III} catalyzed formal [4 + 2 + 2] cyclization of *N*-pivaloyloxybenzamides **1** with 1,6-allene-enes **2** adding two cycles to the benzene ring compatible with ambient air and moisture with a tolerance of many synthetic useful functional groups at room temperature have been developed.

2286

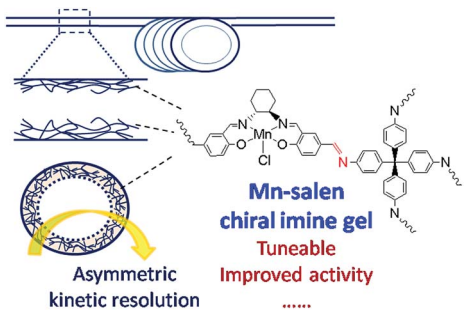


Exploiting parameter space in MOFs: a 20-fold enhancement of phosphate-ester hydrolysis with UiO-66-NH_2

Michael J. Katz, Su-Young Moon, Joseph E. Mondloch, M. Hassan Beyzavi, Casey J. Stephenson, Joseph T. Hupp* and Omar K. Farha*

Using the enzymatic mechanism of phosphoesterase as a template, we were able to modify a metal–organic framework such that the hydrolysis rates were 50 times faster than previously demonstrated with UiO-66.

2292



A catalytic chiral gel microfluidic reactor assembled *via* dynamic covalent chemistry

Haoliang Liu, Juan Feng, Jianyong Zhang,* Philip W. Miller,* Liuping Chen and Cheng-Yong Su*

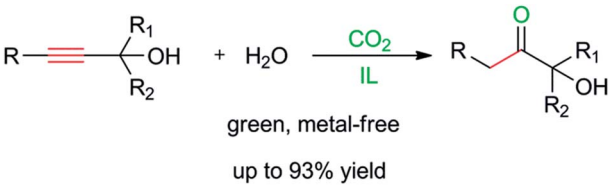
A novel dynamic covalent gel strategy is reported to immobilize an asymmetric catalyst within the channels of a microfluidic flow reactor.

2297

Task-specific ionic liquid and CO_2-cocatalysed efficient hydration of propargylic alcohols to α-hydroxy ketones

Yanfei Zhao, Zhenzhen Yang, Bo Yu, Hongye Zhang, Huanjun Xu, Leiduan Hao, Buxing Han and Zhimin Liu*

Task-specific ionic liquid and CO_2-cocatalysed efficient hydration of propargylic alcohols to α-hydroxy ketones.

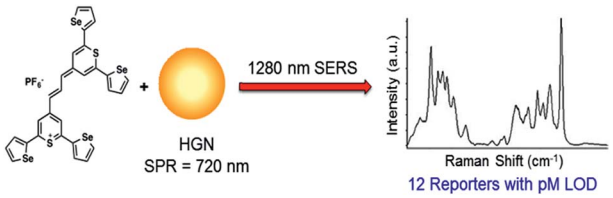


2302

Extreme red shifted SERS nanotags

Matthew A. Bedics, Hayleigh Kearns, Jordan M. Cox, Sam Mabbott, Fatima Ali, Neil C. Shand, Karen Faulds, Jason B. Benedict, Duncan Graham* and Michael R. Detty*

Extreme red-shifted nanotags have been developed and they provide effective SERS with picomolar detection limits when excited at 1280 nm.

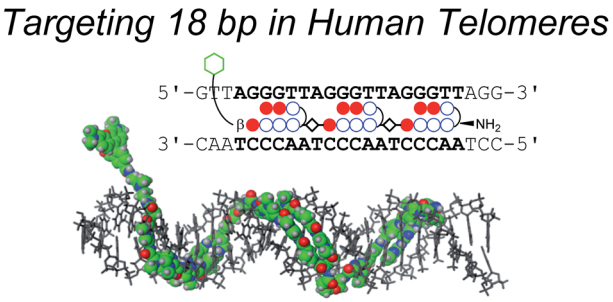


2307

Tandem trimer pyrrole–imidazole polyamide probes targeting 18 base pairs in human telomere sequences

Yusuke Kawamoto, Asuka Sasaki, Kaori Hashiya, Satoru Ide, Toshikazu Bando,* Kazuhiro Maeshima* and Hiroshi Sugiyama*

The novel tandem trimer pyrrole-imidazole polyamide probe targeting 18 bp in telomeric repeats visualized telomeres in human cells selectively.

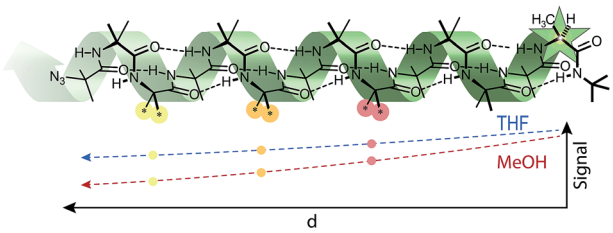


2313

Flaws in foldamers: conformational uniformity and signal decay in achiral helical peptide oligomers

Bryden A. F. Le Bailly, Liam Byrne, Vincent Diemer, Mohammadali Foroozandeh, Gareth A. Morris and Jonathan Clayden*

The conformational influence of a single stereogenic centre in an otherwise achiral oligomer behaves as a signal that decays with distance.



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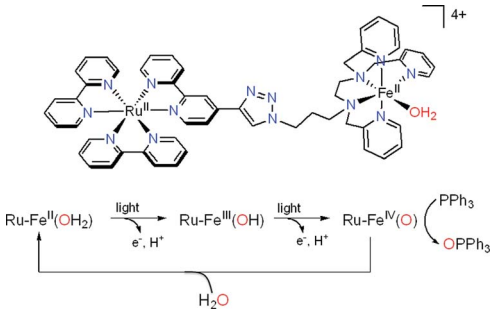
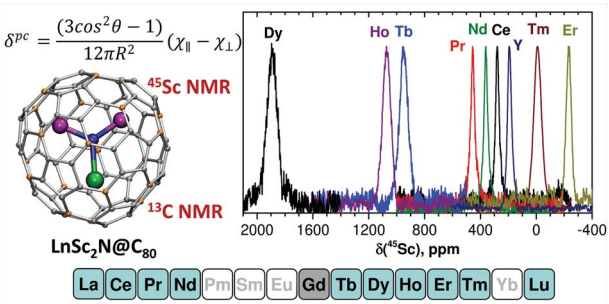


Successive light-induced two electron transfers in a Ru–Fe supramolecular assembly: from Ru–Fe(II)–OH_2 to Ru–Fe(IV)–oxo

C. Herrero, A. Quaranta, M. Sircoglou, K. Sénéchal-David, A. Baron, I. Marín, C. Buron, J.-P. Baltaze, W. Leibl,* A. Aukauloo* and F. Banse*

A Ru^{II}–Fe^{II} chromophore–catalyst assembly performs the visible-light activation of a metal-bound water molecule to form a metal oxo species responsible for the oxidation of a substrate.

2328

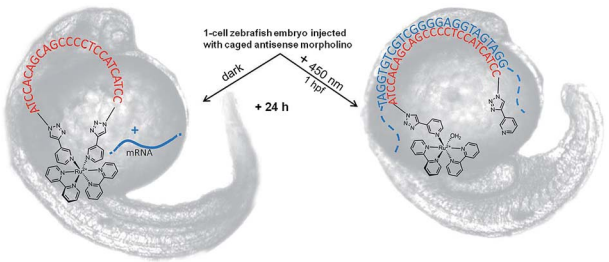


Magnetic anisotropy of endohedral lanthanide ions: paramagnetic NMR study of $MSc_2N@C_{80}$-I_h with M running through the whole 4f row

Y. Zhang, D. Krylov, M. Rosenkranz, S. Schiemenz and A. A. Popov*

Paramagnetic and variable temperature ^{13}C and ^{45}Sc nuclear magnetic resonance studies are performed for nitride clusterfullerenes $MSc_2N@C_{80}$ with icosahedral $I_h(7)$ carbon cage, where M runs through all lanthanides forming nitride clusters.

2342

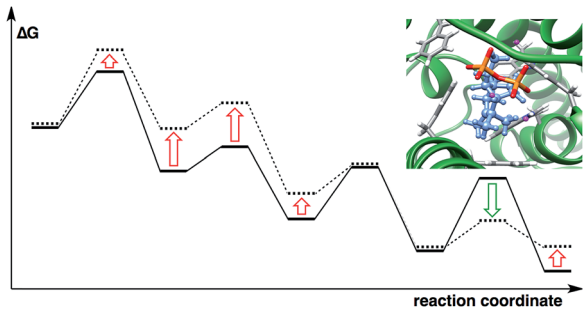


Ruthenium-caged antisense morpholinos for regulating gene expression in zebrafish embryos

Julianne C. Griepenburg, Teresa L. Rapp, Patrick J. Carroll, James Eberwine and Ivan J. Dmochowski*

Ruthenium photolinkers provide a versatile method of using visible light to control structure and function of biopolymers.

2347



Modulation of inherent dynamical tendencies of the bisabolyl cation *via* preorganization in *epi*-isozizaene synthase

Ryan P. Pemberton, Krystina C. Ho and Dean J. Tantillo*

The relative importance of various factors controlling the product distribution for a terpene synthase are elucidated through a combination of quantum chemical, dynamics and automated docking calculations.

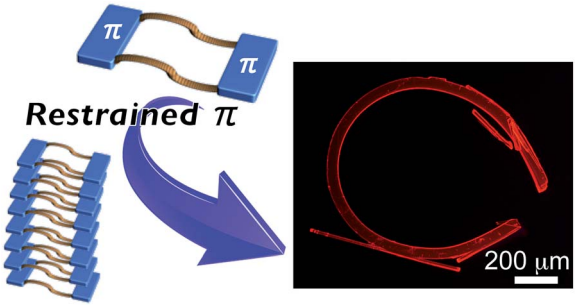
EDGE ARTICLES

2354

Highly bent crystals formed by restrained π-stacked columns connected *via* alkylene linkers with variable conformations

Chih-Ming Chou, Shunpei Nobusue, Shohei Saito,* Daishi Inoue, Daisuke Hashizume and Shigehiro Yamaguchi*

Highly bent organic crystals are reproducibly prepared using a structurally restrained macrocyclic π-conjugated system with two flexible linkers. The appropriate length of the linkers to produce a void within the macrocycle is key to the observed bending of the crystals.

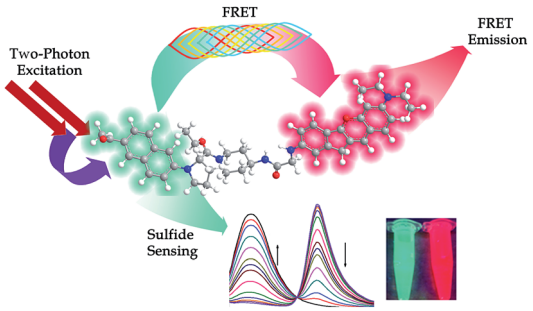


2360

Engineering a FRET strategy to achieve a ratiometric two-photon fluorescence response with a large emission shift and its application to fluorescence imaging

Lin Yuan,* Fangping Jin, Zebing Zeng,* Chengbin Liu, Shenglian Luo and Jishan Wu

A FRET strategy was applied to develop a ratiometric two-photon fluorescent probe with a large emission shift for imaging in cells and tissues.

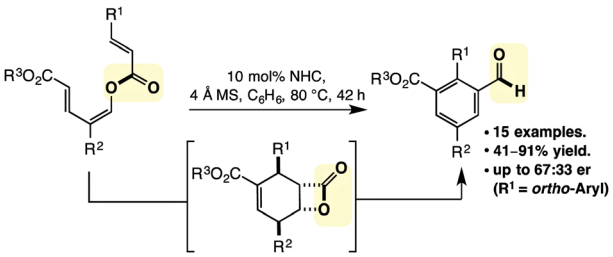


2366

N-Heterocyclic carbene catalysed redox isomerisation of esters to functionalised benzaldehydes

Lisa Candish, Alison Levens and David W. Lupton*

N-Heterocyclic carbene catalysed redox isomerisation with reduction about the carbonyl has been developed in the transformation of trienyl esters to tetrasubstituted benzaldehydes.

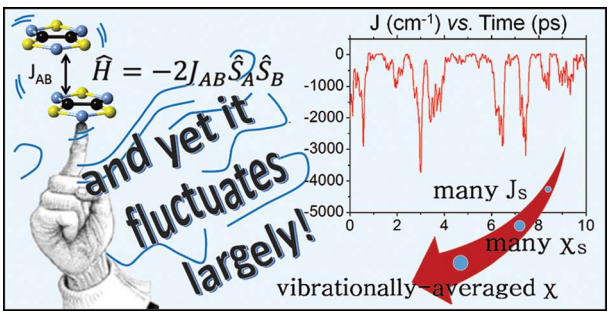


2371

Dynamical effects on the magnetic properties of dithiazolyl bistable materials

Sergi Vela, Mercè Deumal, Motoyuki Shiga, Juan J. Novoa and Jordi Ribas-Arino*

Using 1,3,5-trithia-2,4,6-triazapentalenyl material as a proof of concept, we demonstrate that vibrations of radicals can play a prime role in defining the magnetic properties of certain organic magnets.



EDGE ARTICLES

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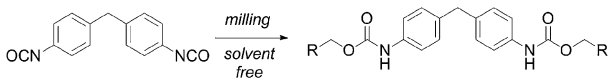
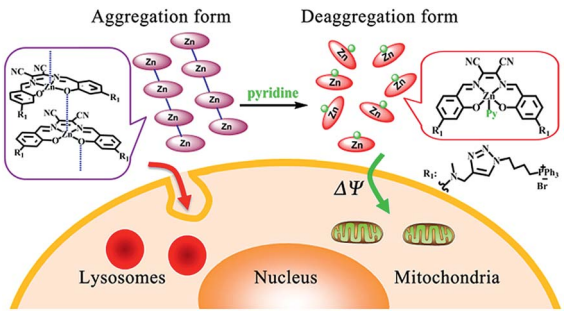


Development of solvent-free synthesis of hydrogen-bonded supramolecular polyurethanes

Kelly. A. Houton, George M. Burslem and Andrew. J. Wilson*

A solvent free ball-milling method for the synthesis of small molecule and oligomeric carbamates is described that is applicable to supramolecular polymer synthesis.

2389

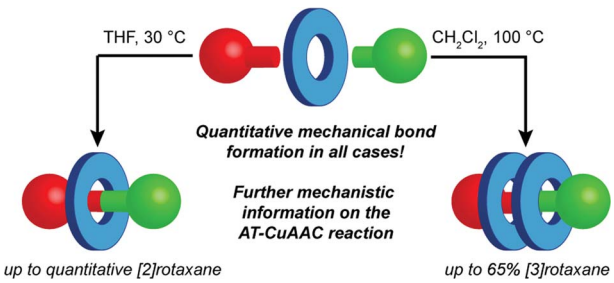


Unravelling the correlation between metal induced aggregation and cellular uptake/subcellular localization of Znsalen: an overlooked rule for design of luminescent metal probes

Juan Tang, Yuan-Bo Cai, Jing Jing and Jun-Long Zhang*

We demonstrate the importance of speciation of luminescent metal complexes in water on biological behaviours such as cellular uptake and subcellular localization.

2398

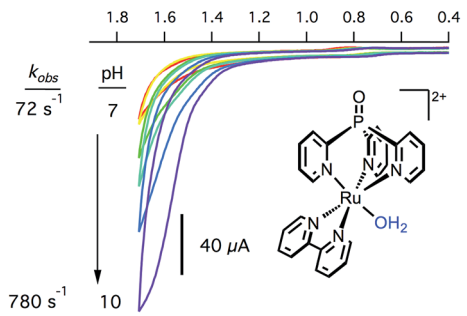


Competitive formation of homocircuit [3]rotaxanes in synthetically useful yields in the bipyridine-mediated active template CuAAC reaction

Edward A. Neal and Stephen M. Goldup*

We demonstrate that, depending on reaction conditions, [2]rotaxanes are produced in essentially quantitative yield in the AT-CuAAC reaction regardless of macrocycle size, and hard to access doubly threaded [3]rotaxanes can be synthesised in up to 50% isolated yield in a four component coupling step.

2405



Rapid water oxidation electrocatalysis by a ruthenium complex of the tripodal ligand tris(2-pyridyl)phosphine oxide

Andrew G. Walden and Alexander J. M. Miller*

A ruthenium complex of the tripodal ligand tris(2-pyridyl)-phosphine oxide exhibits rapid water oxidation electrocatalysis over a wide pH range.

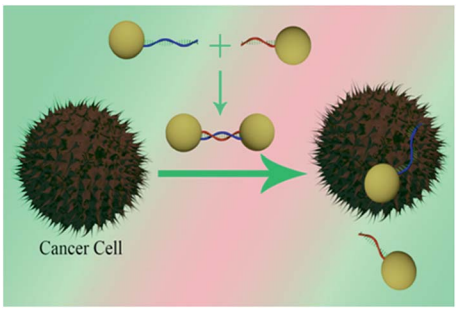
EDGE ARTICLES

2411

Long-range two-photon scattering spectroscopy ruler for screening prostate cancer cells

Sudarson Sekhar Sinha, Dilip K. Paul, Rajashekhar Kanchanapally, Avijit Pramanik, Suhash Reddy Chavva, Bhanu Priya Viraka Nellore, Stacy J. Jones and Paresh Chandra Ray*

Development of a long-range TPS ruler for the screening of prostate cancer cells with sensitivity of 5 cells per mL level is demonstrated.

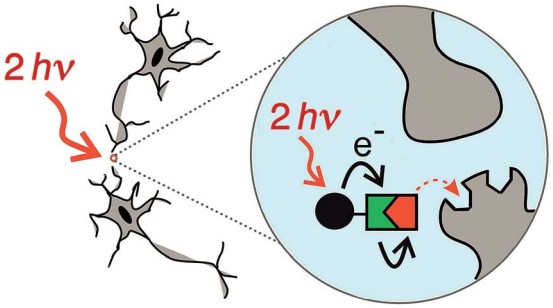


2419

Two-photon sensitive protecting groups operating *via* intramolecular electron transfer: uncaging of GABA and tryptophan

Karolina A. Korzycka, Philip M. Bennett, Eduardo Jose Cueto-Diaz, Geoffrey Wicks, Mikhail Drobizhev, Mireille Blanchard-Desce, Aleksander Rebane and Harry L. Anderson*

We present a modular approach to photo-labile protecting groups based on photoinduced electron transfer, providing high sensitivity to two-photon excitation.

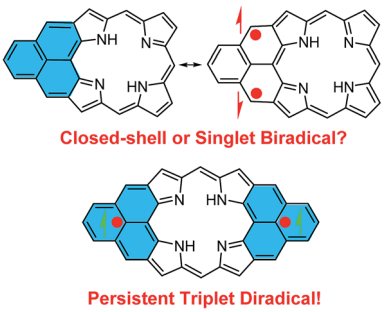


2427

Phenalenyl-fused porphyrins with different ground states

Wangdong Zeng, Sangsu Lee, Minjung Son, Masatoshi Ishida, Ko Furukawa, Pan Hu, Zhe Sun, Dongho Kim* and Jishan Wu*

Fusion of one or two phenalenyl units onto the porphyrin core led to biradicaloids with different ground state, physical property and chemical reactivity.

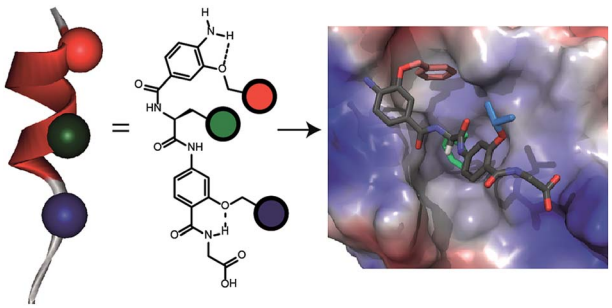


2434

Stereocontrolled protein surface recognition using chiral oligoamide proteomimetic foldamers

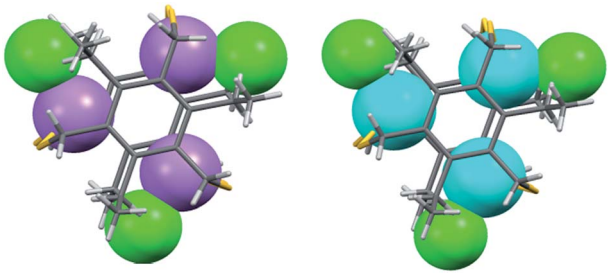
Valeria Azzarito, Jennifer A. Miles, Julie Fisher, Thomas A. Edwards, Stuart L. Warriner and Andrew J. Wilson*

An oligoamide helix mimicking foldamer with well-defined conformation is shown to recognize its target protein *h*DM2 in a manner that depends upon the composition, spatial projection and stereochemistry of functional groups appended to the scaffold.



EDGE ARTICLES

2444

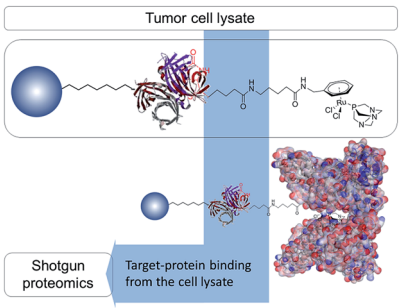


Self-assembled trinuclear arsenic and antimony macrobicycles

Mary S. Collins, Robert Y. Choi, Lev N. Zakharov, Lori A. Watson, Benjamin P. Hay and Darren W. Johnson*

Six new macrobicyclic $Pn_3L_2Cl_3$ complexes (Pn = As, Sb) were synthesized by self-assembly of a three-fold symmetric trithiol and $PnCl_3$.

2449

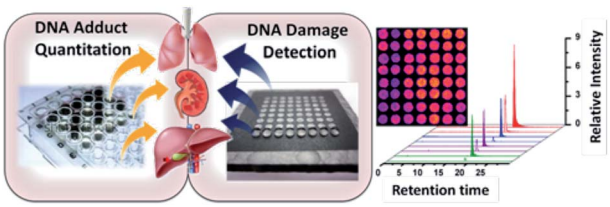


Target profiling of an antimetastatic RAPTA agent by chemical proteomics: relevance to the mode of action

Maria V. Babak, Samuel M. Meier, Kilian V. M. Huber, Jóhannes Reynisson, Anton A. Legin, Michael A. Jakupec, Alexander Roller, Alexey Stukalov, Manuela Gridling, Keiryn L. Bennett, Jacques Colinge, Walter Berger, Paul J. Dyson, Giulio Superti-Furga, Bernhard K. Keppler and Christian G. Hartinger*

The RAPTA pharmacophore was linked to beads to identify its biomolecular targets in cancer cells.

2457

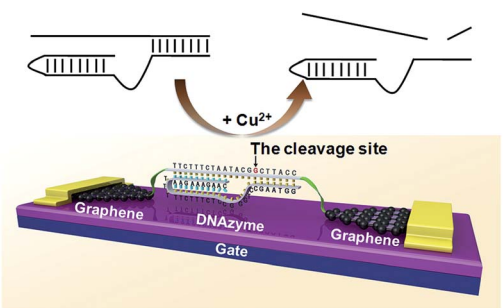


Elucidating organ-specific metabolic toxicity chemistry from electrochemiluminescent enzyme/DNA arrays and bioreactor bead-LC-MS/MS

Dhanuka P. Wasalathanthri, Dandan Li, Donghui Song, Zhifang Zheng, Dharamainder Choudhary, Ingela Jansson, Xiuling Lu, John B. Schenkman and James F. Rusling*

Combining electrochemiluminescent array and bioreactor bead-LC-MS/MS featuring metabolic enzyme-DNA films provide an efficient, comprehensive approach to simultaneously elucidate metabolic DNA damage chemistries at different human organs for potential new drugs.

2469



Graphene–DNAzyme junctions: a platform for direct metal ion detection with ultrahigh sensitivity

Li Gao, Le-Le Li, Xiaolong Wang, Peiwen Wu, Yang Cao, Bo Liang, Xin Li, Yuanwei Lin, Yi Lu* and Xuefeng Guo*

We describe a method of creating graphene–DNAzyme junctions capable of directly detecting paramagnetic Cu^{2+} with femtomolar sensitivity and high selectivity.

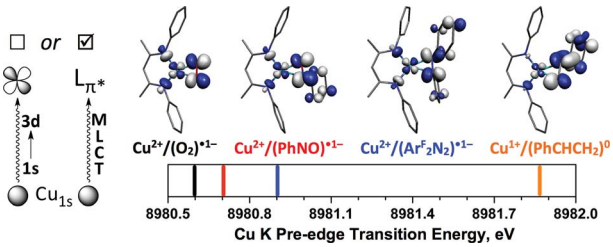
EDGE ARTICLES

2474

Re-evaluating the Cu K pre-edge XAS transition in complexes with covalent metal–ligand interactions

Neil C. Tomson,* Kamille D. Williams, Xuliang Dai, Stephen Sproules, Serena DeBeer, Timothy H. Warren* and Karl Wieghardt*

Covalent metal–ligand interactions can lead to Cu K pre-edge transitions that result from metal-to-ligand charge transfer, instead of 1s → 3d, character.

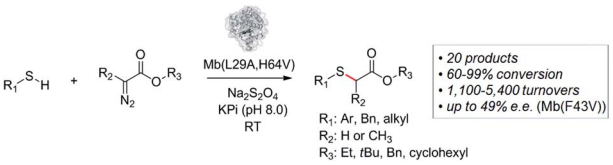


2488

Intermolecular carbene S–H insertion catalysed by engineered myoglobin-based catalysts

Vikas Tyagi, Rachel B. Bonn and Rudi Fasan*

The first example of a biocatalytic strategy for the synthesis of thioethers *via* an intermolecular carbene S–H insertion reaction is reported.



2495

Copper doped ceria porous nanostructures towards a highly efficient bifunctional catalyst for carbon monoxide and nitric oxide elimination

Shanlong Li, Nengli Wang, Yonghai Yue, Guangsheng Wang, Zhao Zu and Yu Zhang*

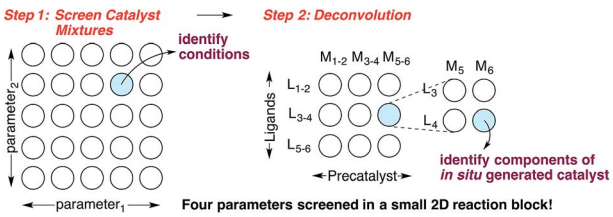
Cu^{2+} doped CeO_2 porous nanomaterials were synthesized by calcining CeCu–MOF nanocrystals. They exhibited a superior bifunctional catalytic performance for CO oxidation and selective catalytic reduction of NO.

2501

Identifying lead hits in catalyst discovery by screening and deconvoluting complex mixtures of catalyst components

Eléna Wolf, Edward Richmond and Joseph Moran*

A combinatorial screening strategy is described that exploits complex mixtures of precatalysts and ligands to rapidly uncover lead *in situ* generated catalysts.



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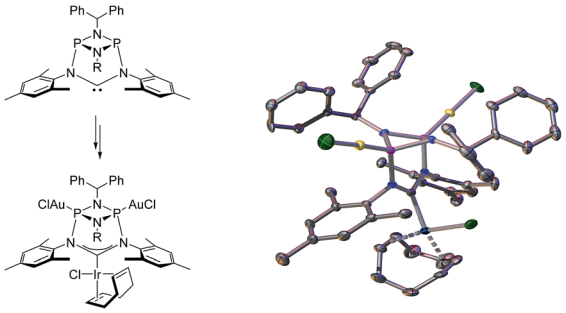
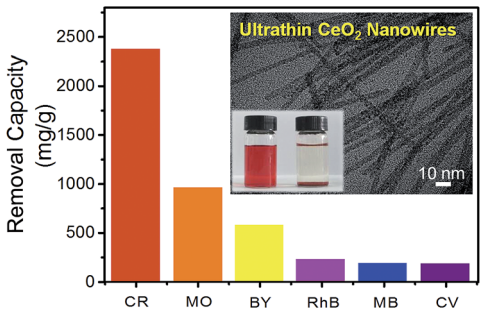


Extending *N*-heterocyclic carbene ligands into the third dimension: a new type of hybrid phosphazane/NHC system

Torsten Roth, Vladislav Vasilenko, Callum G. M. Benson, Hubert Wadepohl, Dominic S. Wright* and Lutz H. Gade*

A new type of hybrid phosph(III)azane/NHC system is described in which a phosphazane P_2N_2 ring provides unique opportunities for modifying the electronic and steric character of these carbenes.

2511

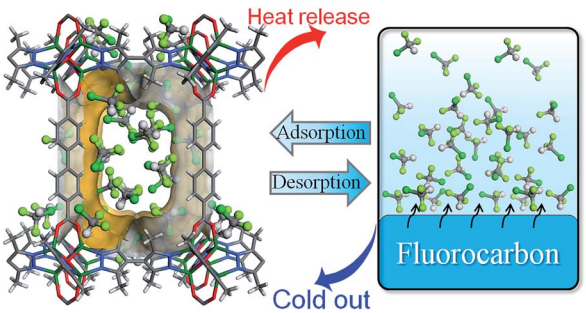


Template- and surfactant-free synthesis of ultrathin CeO_2 nanowires in a mixed solvent and their superior adsorption capability for water treatment

Xiao-Fang Yu, Jian-Wei Liu, Huai-Ping Cong, Lei Xue, Muhammad Nadeem Arshad, Hassan A. Albar, Tariq R. Sobahi, Qiang Gao and Shu-Hong Yu*

Ultrathin CeO_2 nanowires can be prepared by a one-step refluxing approach in a mixed solvent without any templates or surfactants, and exhibit excellent adsorption capabilities in water treatment.

2516

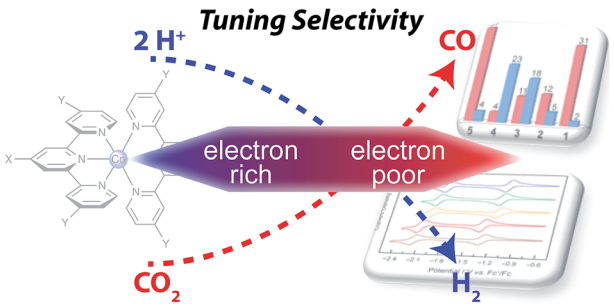


Tuning fluorocarbon adsorption in new isoreticular porous coordination frameworks for heat transformation applications

Rui-Biao Lin, Tai-Yang Li, Hao-Long Zhou, Chun-Ting He, Jie-Peng Zhang* and Xiao-Ming Chen

We report adsorption behaviors of a typical fluorocarbon R22 ($CHClF_2$) in a new series of isoreticular porous coordination frameworks [$Zn_4O(bpz)_2(ldc)$].

2522



Turning it off! Disfavouring hydrogen evolution to enhance selectivity for CO production during homogeneous CO_2 reduction by cobalt–terpyridine complexes

Noémie Elgrishi, Matthew B. Chambers and Marc Fontecave*

Understanding the activity and selectivity of molecular catalysts for CO_2 reduction to fuels is an important scientific endeavour in addressing the growing global energy demand.

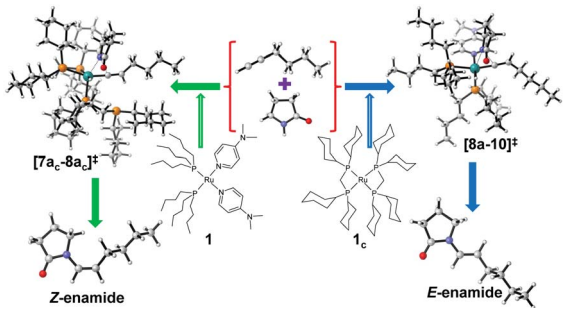
EDGE ARTICLES

2532

Computational study of the mechanism and selectivity of ruthenium-catalyzed hydroamidations of terminal alkynes

Bholanath Maity, Lukas J. Gooßen* and Debasis Koley*

Density functional theory calculations were performed to elucidate the mechanism of the ruthenium-catalyzed hydroamidation of terminal alkynes, a powerful and sustainable method for the stereoselective synthesis of enamides.

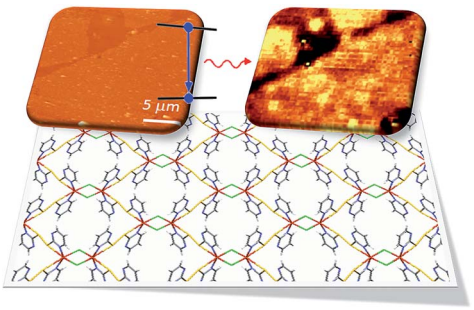


2553

Mechanical and optical properties of ultralarge flakes of a metal–organic framework with molecular thickness

Cristina Hermosa, Benjamin R. Horrocks, José I. Martínez, Fabiola Liscio, Julio Gómez-Herrero* and Félix Zamora*

The red emission on isolated 2d-mof flakes with areas of square microns and molecular thicknesses (from single up to *ca.* 50 layers) has been characterized. Free-standing flakes have also been produced and their mechanical and optical properties studied.

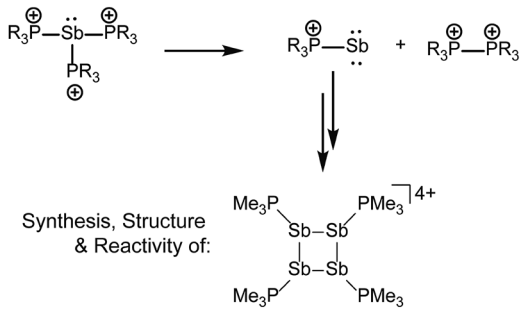


2559

Synthesis and reactivity of *cyclo*-tetra(stibinophosphonium) tetracations: redox and coordination chemistry of phosphine–antimony complexes

Saurabh S. Chitnis, Alasdair P. M. Robertson, Neil Burford,* Jan J. Weigand* and Roland Fischer

Reactions of trialkylphosphines with antimony(III) triflates yield *catena*-antimony(I) cations revealing a new reductive elimination/oxidative coupling reaction for P–Sb coordination complexes.

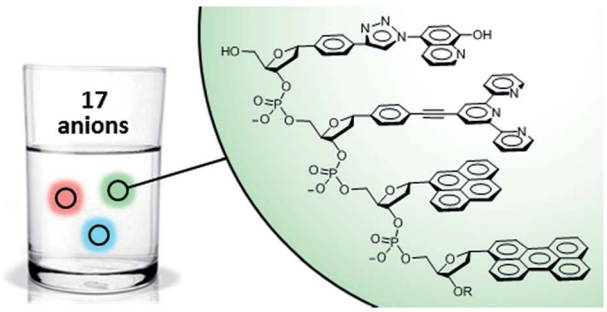


2575

Pattern-based detection of anion pollutants in water with DNA polyfluorophores

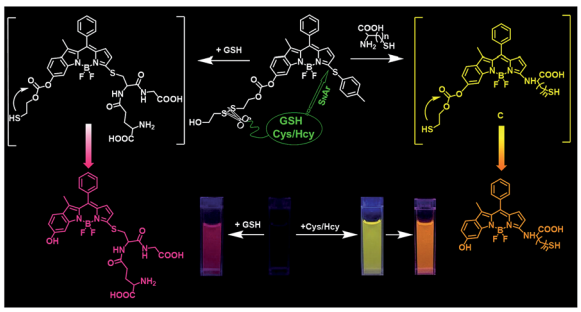
Hyukin Kwon, Wei Jiang and Eric T. Kool*

Eight fluorescent DNA-like oligomers bound to Y(III) or Zn(II) and attached to microbeads were able to distinguish 17 anions at micromolar concentrations in water.



EDGE ARTICLES

2584

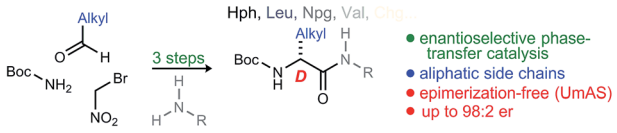


A dual-response BODIPY-based fluorescent probe for the discrimination of glutathione from cystein and homocystein

Feiyi Wang, Li Zhou, Chunchang Zhao,* Rui Wang, Qiang Fei, Sihang Luo, Zhiqian Guo, He Tian and Wei-Hong Zhu*

By employing a dual response approach, distinguishable fluorescence signals are initiated by GSH-mediated and Cys/Hcy-induced cascade reactions, thus allowing selective detection.

2590

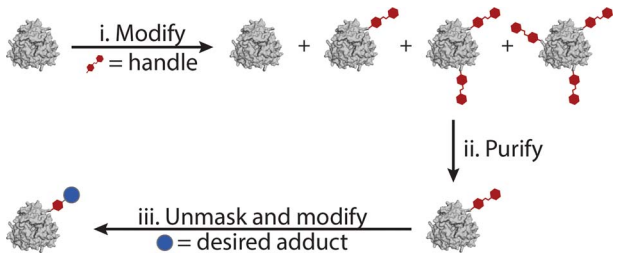


Enantioselective synthesis of D-α-amino amides from aliphatic aldehydes

Kenneth E. Schwieter and Jeffrey N. Johnston*

Bromonitromethane is used in a phase transfer-catalysed enantioselective aza-Henry reaction, leading to D-amino amide bearing an alkyl chain.

2596

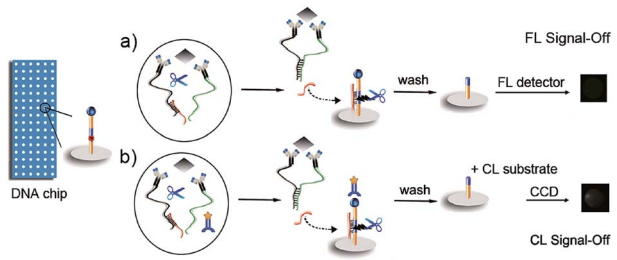


Controlled levels of protein modification through a chromatography-mediated bioconjugation

Richard L. Kwant, Jake Jaffe, Peter J. Palmere and Matthew B. Francis*

This article introduces a method to control levels of protein modification through a chromatography-mediated bioconjugation.

2602



High-throughput imaging assay of multiple proteins *via* target-induced DNA assembly and cleavage

Chen Zong, Jie Wu, Mengmeng Liu, Feng Yan and Huangxian Ju*

A versatile imaging strategy integrated with target-induced DNA assembly and cleavage was designed for an assay for multiple proteins.

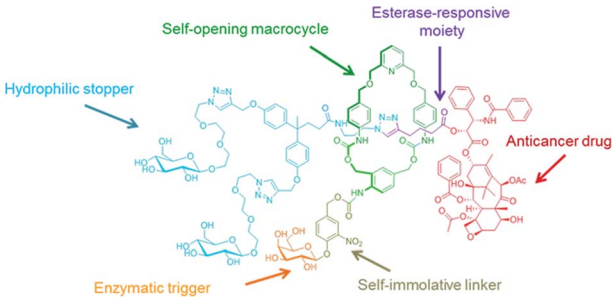
EDGE ARTICLES

2608

A mechanically interlocked molecular system programmed for the delivery of an anticancer drug

Romain Barat, Thibaut Legigan, Isabelle Tranoy-Opalinski, Brigitte Renoux, Elodie Péraudeau, Jonathan Clarhaut, Pauline Poinot, Antony E. Fernandes, Vincent Aucagne, David A. Leigh and Sébastien Papot*

The development of mechanically interlocked molecular systems programmed to operate autonomously in biological environments is an emerging field of research with potential medicinal applications.



2614

Compact, hydrophilic, lanthanide-binding tags for paramagnetic NMR spectroscopy

M. D. Lee, C.-T. Loh, J. Shin, S. Chhabra, M. L. Dennis, G. Otting, J. D. Swarbrick* and B. Graham*

The design, synthesis and evaluation of four novel lanthanide-binding tags for paramagnetic NMR spectroscopy are reported.