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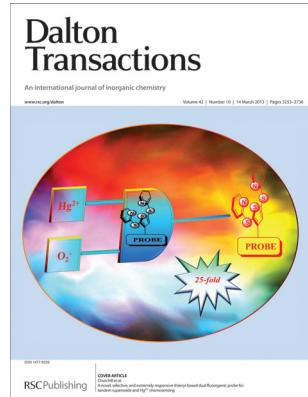
ISSN 1477-9226 CODEN DTARAF 42(10) 3253–3736 (2013)



Cover

See Zhang *et al.*,
pp. 3308–3317.

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Inside cover

See Churchill *et al.*,
pp. 3285–3290.

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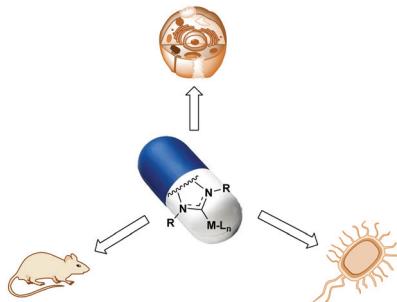
PERSPECTIVE

3269

N-Heterocyclic carbene metal complexes in medicinal chemistry

Luciano Oehninger, Riccardo Rubbiani and Ingo Ott*

Metal complexes with *N*-heterocyclic carbene ligands hold a great promise in medicinal chemistry.



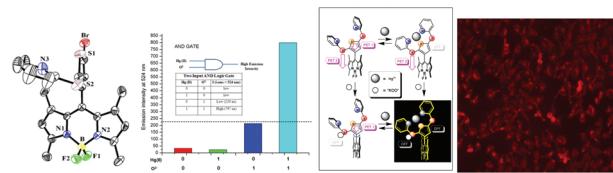
COMMUNICATIONS

3285

A novel, selective, and extremely responsive thienyl-based dual fluorogenic probe for tandem superoxide and Hg²⁺ chemosensing

Atul P. Singh, Dhiraj P. Murale, Yonghwang Ha, Hyunjeong Liew, Kang Mun Lee, Aviv Segev, Yoo-Hun Suh and David G. Churchill*

Probes bearing [S_{thi}N_{py}] binding atoms and joined by oxidizable sulphides engage in selective novel high “turn-on” Hg²⁺ AND O₂[−] fluorescence behaviour (~25 times, λ_{em} = 524 nm); transient ROS species may be involved.



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Dalton Transactions (print: ISSN 1477-9226; electronic:
ISSN 1477-9234) is published 48 times a year by
the Royal Society of Chemistry, Thomas Graham House,
Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the
Royal Society of Chemistry, should be sent to RSC
Order Department, Royal Society of Chemistry,
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2013 Annual (print+electronic) subscription price: £3579;
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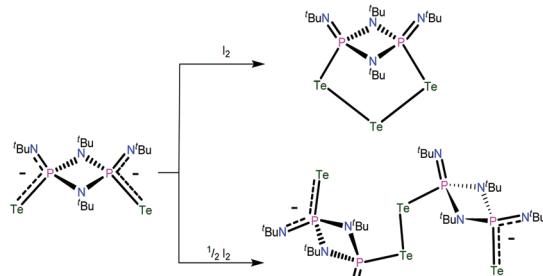


3291

A planar dianionic ditelluride and a cyclic tritelluride supported by P₂N₂ rings

Andreas Nordheider, Tristram Chivers,* Ramalingam Thirumoorthi, Kasun S. Athukorala Arachchige, Alexandra M. Z. Slawin, J. Derek Woollins and Ignacio Vargas-Baca

The oxidation of a ditelluro P₂N₂-bridged dianion produced a planar, dianionic ditelluride and, subsequently, a neutral tritelluride in which the –Te–Te–Te– unit bridges a P₂N₂ ring.

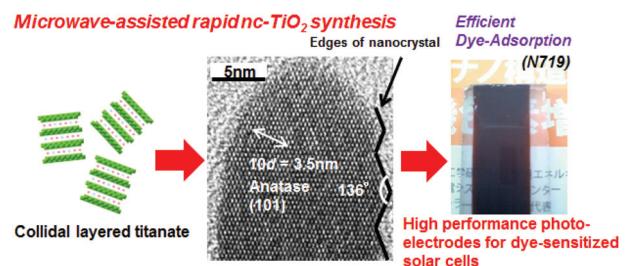


3295

Size-controlled synthesis of anisotropic TiO₂ single nanocrystals using microwave irradiation and their application for dye-sensitized solar cells

Kazuhiro Manseki, Yosuke Kondo, Takayuki Ban, Takashi Sugiura and Tsukasa Yoshida*

A microwave reaction of colloidal titanates produces anisotropic titania single nanocrystals as high performance photoelectrode materials for dye-sensitized solar cells.

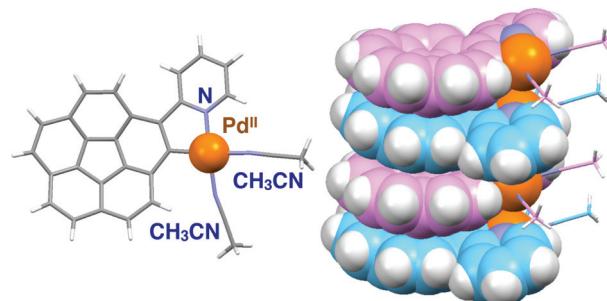


3300

A cyclopalladated complex of corannulene with a pyridine pendant and its columnar self-assembly

Mihoko Yamada, Shohei Tashiro, Ryosuke Miyake and Mitsuhiro Shionoya*

A cyclopalladated 2-pyridylcorannulene was synthesised as a novel π -expanded metallo-corannulene, which adopts a columnar structure in the crystal through π – π stacking of the corannulene moieties in a concave–convex fashion.

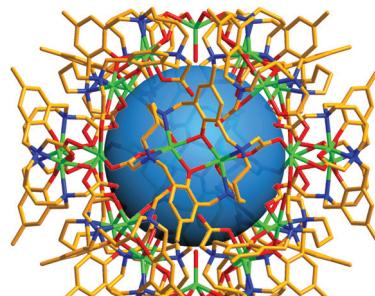


3304

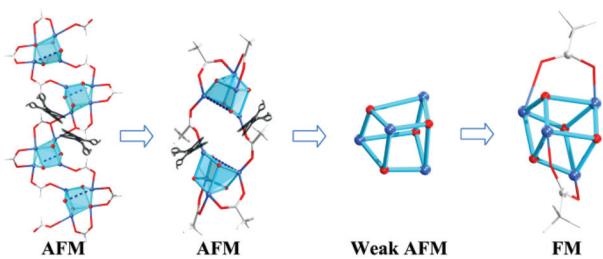
An unprecedented octahedral {Cd₃₀} nanocage supported by twelve pendant-armed tetraacetate macrocyclic ligands

Wei-Jie Gong, Ying-Ying Liu,* Jin Yang, Hua Wu, Jian-Fang Ma* and Teng-Feng Xie

An unprecedented octahedral {Cd₃₀} nanocage supported by twelve pendant-armed tetraacetate macrocyclic ligands was synthesized through the reaction of macrocyclic tetraethyl ester and Cd(OAc)₂·2H₂O in a 1 : 2 stoichiometry.



3308

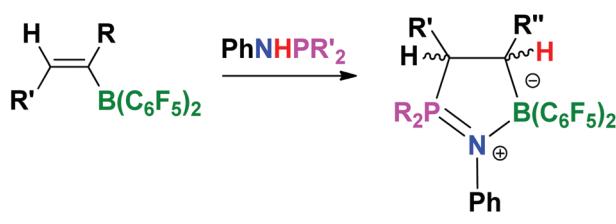


Tuning the interactions from antiferro- to ferro-magnetic by molecular tailoring and manipulating

Xiaoying Zhang, Bo Li, Jinkui Tang, Jumei Tian, Guolong Huang and Jingping Zhang*

We report the stepwise tailoring process from a 1D chain to octa- and tetra-nuclear clusters and rational modulation from the antiferromagnetic to ferromagnetic cluster.

3318

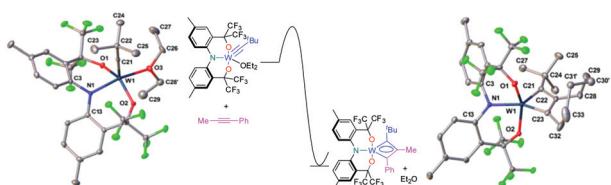


Hydrophosphination of vinyl-boranes with phosphinoamines

Chunfang Jiang and Douglas W. Stephan*

Phosphinoamine ligands $\text{PhN(H)}\text{PR}'_2$ ($\text{R}' = \text{iPr}$ **1**, tBu **2**) react with $\text{R}'^1\text{CH}=\text{CR}^2\text{B}(\text{C}_6\text{F}_5)_2$ ($\text{R}'^1 = \text{Ph}, p\text{-FC}_6\text{H}_4, n\text{Pr}, \text{Et}, \text{R}^2 = \text{H}, \text{Ph}, \text{Et}, \text{C}_6\text{F}_5$) to effect uncatalyzed hydrophosphination of the olefinic bond, affording the C_2BNP five-membered cyclization compounds **3–14**.

3326

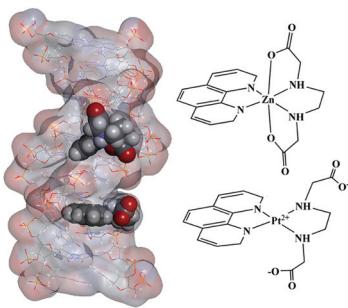


Unusually stable tungstenacyclobutadienes featuring an ONO trianionic pincer-type ligand

Matthew E. O'Reilly, Ion Ghiviriga, Khalil A. Abboud and Adam S. Veige*

This report presents the synthesis of the first neutral trianionic ONO pincer-type tungsten alkylidene complex, $[\text{CF}_3\text{ONO}]W\equiv\text{C}(\text{t-Bu})(\text{OEt}_2)$ (**5**) {where $\text{CF}_3\text{ONO} = (\text{MeC}_6\text{H}_3[\text{C}(\text{CF}_3)_2\text{O}])_2\text{N}^{3-}$ }.

3337



The DNA binding site specificity and antiproliferative property of ternary Pt(II) and Zn(II) complexes of phenanthroline and *N,N'*-ethylenediaminediacetic acid

Yusuke Nakamura, Yoko Taruno, Masashi Sugimoto, Yusuke Kitamura, Hoi Ling Seng, Siew Ming Kong, Chew Hee Ng and Makoto Chikira*

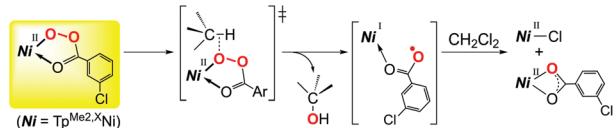
$[\text{Pt(II)}(\text{phen})(\text{edda})]$ is partially intercalated between CG base pairs in the major grooves, whereas $[\text{Zn(II)}(\text{phen})(\text{edda})]$ is bound to the TATA region in the minor groove.

3346

Characterization of nickel(II)-acylperoxo species relevant to catalytic alkane hydroxylation by nickel complex with *m*CPBA

Shiro Hikichi,* Kento Hanaue, Takako Fujimura, Hideho Okuda, Jun Nakazawa, Yoshiko Ohzu, Chiho Kobayashi and Munetaka Akita

Nickel(II)-acylperoxo complexes, which show potential for H atom abstraction from aliphatic C–H, have been successfully characterized.

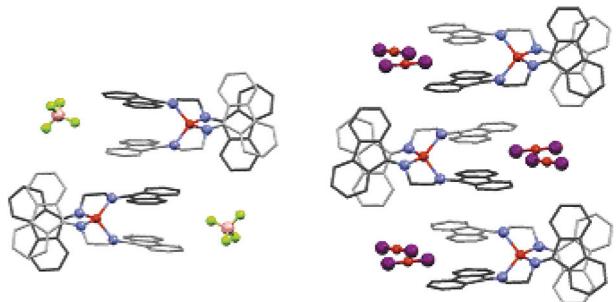


3357

Capturing the geometry of the emissive state of a Cu(I) red emitter through strong intramolecular stacking forces

Panagiotis Papanikolaou,* John Mohanraj, Agnieszka Czapik, Maria Gdaniec,* Gianluca Accorsi* and Pericles Akrivos

N,N'-Bis-fluoren-9-ylidene-ethane-1,2-diamine readily forms red-emitting $[\text{Cu}(\text{flen})_2]^+$ with a Cu(I)-diimine core retaining the crystallographically determined structure in the vibrationally relaxed emissive state.

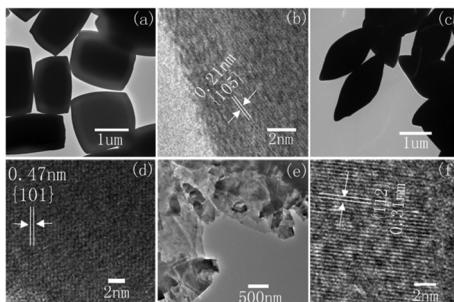


3366

Formation and down/up conversion luminescence of Ln^{3+} doped $\text{NaY}(\text{MoO}_4)_2$ microcrystals

Ying Li, Guofeng Wang,* Kai Pan, Yang Qu, Shuai Liu and Li Feng

$\text{NaY}(\text{MoO}_4)_2$ microcrystals with different morphologies including spherical, rhombic, sheet-like, and rectangular plate-like morphologies have been successfully synthesized via a simple hydrothermal method by varying the molar ratios of $\text{Y}(\text{NO}_3)_3/\text{Na}_2\text{MoO}_4$ and pH values of the resultant solutions.

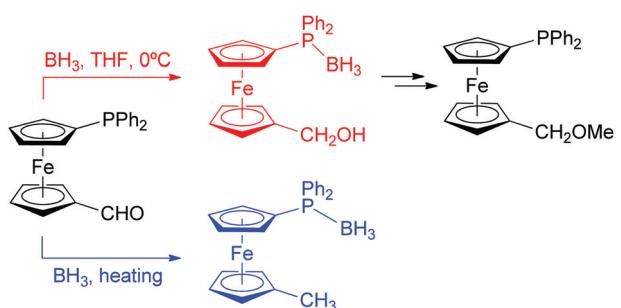


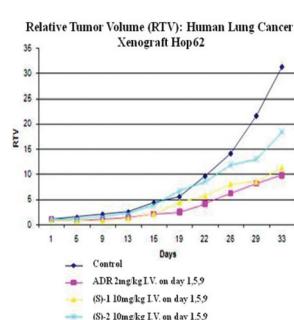
3373

Selective borane reduction of phosphinoferrocene carbaldehydes to phosphinoalcohol–borane adducts. The coordination behaviour of 1-(diphenylphosphino)-1'-(methoxymethyl)-ferrocene, a new ferrocene O,P-hybrid donor prepared from such an adduct

Petr Štěpníčka* and Ivana Císařová

Depending on the conditions, the borane reduction of phosphinoferrocene aldehydes produces phosphino-alcohol–borane adducts or deoxygenated products. The former compounds are useful building blocks.

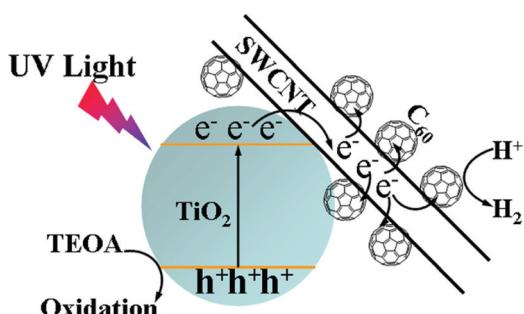




Design and synthesis of (*S*)- and (*R*)-enantiomers of [4-(2-hydroxy-1-phenylethylimino)pent-2-ol]-dimethyltin(IV) and 2,2-dimethyl-4-phenyl-1,3,2-oxazastannolidine: *in vitro* antitumor activity against human tumor cell lines and *in vivo* assay of (*S*)-enantiomers

Farukh Arjmand,* Fatima Sayeed, Shazia Parveen, Sartaj Tabassum, Aarti S. Juvekar and Surekha M. Zingde

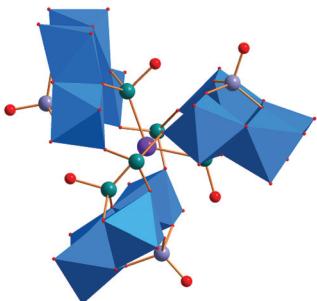
New dimethyltin derived antitumor drug candidates were synthesized and thoroughly characterized.



Synthesis of C₆₀-decorated SWCNTs (C₆₀-d-CNTs) and its TiO₂-based nanocomposite with enhanced photocatalytic activity for hydrogen production

Bo Chai, Tianyou Peng,* Xiaohu Zhang, Jing Mao, Kan Li and Xungao Zhang*

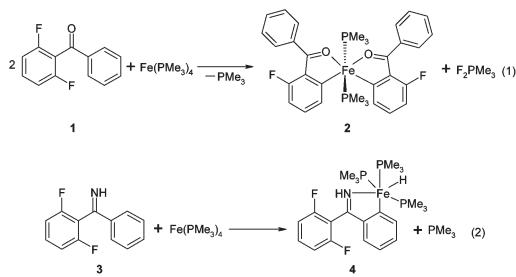
A novel carbon/TiO₂ nanocomposite with enhanced photoactivity is fabricated by using C₆₀ decorated single-walled carbon nanotubes as carbon source.



An unusual fan-type polyanion with a silver cation located at the axial center, [AgAs^{III}₂(As^{III}As^VMo₄O₁₈(OH)₂)]¹¹⁻

Ying Ma, Qi Xue, Suotian Min, Yanping Zhang, Huaiming Hu, Shengli Gao and Ganglin Xue*

The polyanion represents the first example of a fan-like polyoxomolybdate enclosing a silver cation at the axial center.



Selective activation of C–F and C–H bonds with iron complexes, the relevant mechanism study by DFT calculations and study on the chemical properties of hydrido iron complex

Xiaofeng Xu, Jiong Jia, Hongjian Sun, Yuxia Liu, Wengang Xu, Yujie Shi, Dongju Zhang* and Xiaoyan Li*

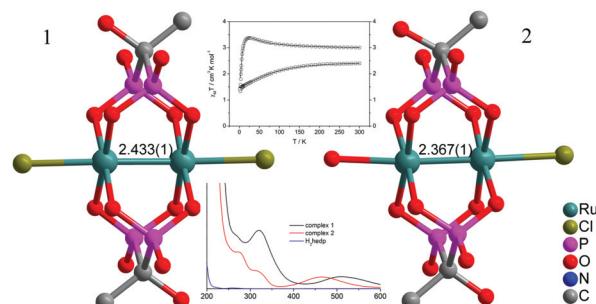
The reactions of fluorinated keto and imine compounds with iron complexes afforded different selective C–F/C–H bond activation products.

3429

Diruthenium(III,III) diphosphonate with a spin ground state $S = 2$

Bin Liu,* Tuo Ding, Wei-Jie Hua, Xue-Mei Liu, Huai-Ming Hu, Shu-Hua Li* and Li-Min Zheng*

A homovalent Ru₂⁶⁺-based complex, (H₂pip)₂[Ru₂(hedp)₂Cl₂]·6H₂O (**1**), isolated by the reaction of Ru₂⁵⁺-based anion Ru₂(hedp)₂³⁻ with oxidant peracetic acid, showing a spin ground state of $S = 2$.

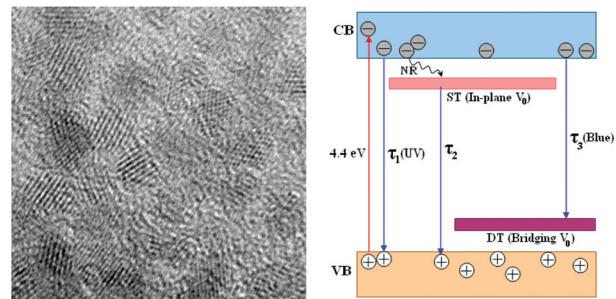


3434

Effect of oleic acid ligand on photophysical, photoconductive and magnetic properties of monodisperse SnO₂ quantum dots

Sirshendu Ghosh, Kajari Das, Kaushik Chakrabarti and S. K. De*

Oleic acid capped monodisperse SnO₂ quantum dots of size 2.7 nm were synthesized by thermal decomposition and oxidation of Sn^{II}(oleate) complex in high boiling nonpolar solvent using oleic acid as a capping agent and *N*-methylmorpholine *N*-oxide as an oxidizing agent.

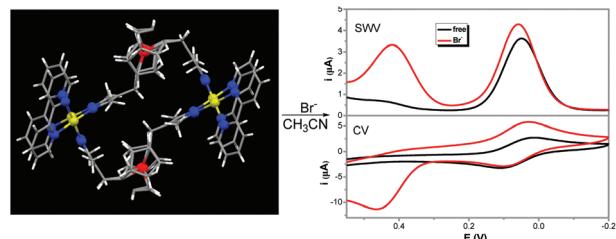


3447

Self-assembly of metallamacrocycles with dipyrazole ligands and anion sensing of [Pd₄Fe₂] macrocycle with ferrocene-based dipyrazole ligand

Liao-Yuan Yao, Zheng-Su Yu, Lin Qin, Yi-Zhi Li, Yu Qin* and Shu-Yan Yu*

A ferrocene-functionalized [Pd₄Fe₂] heterometallamacrocycle synthesized by a self-assembly approach in aqueous solution displays anion sensory capability toward Br⁻.

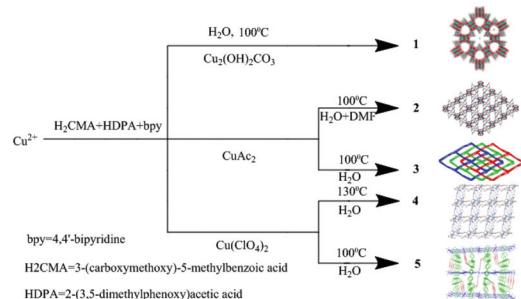


3455

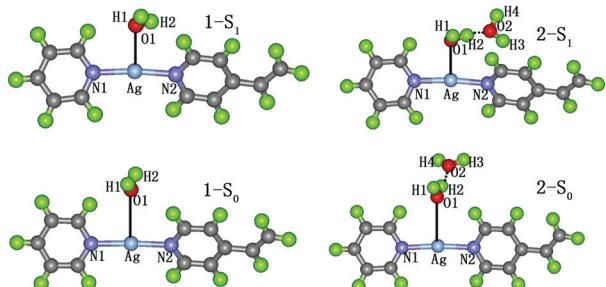
Structural diversity and magnetic properties of five copper–organic frameworks containing one-, two-, and three-types of organic ligands

Bo Shen, Peng-Fei Shi, Yin-Ling Hou, Fan-Fan Wan, Dong-Liang Gao and Bin Zhao*

Novel Cu-based MOFs with up to three kinds of ligands were synthesized and structurally characterized, displaying various topologies.



3464

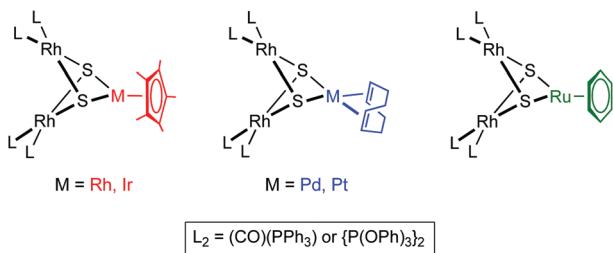


A time-dependent density functional theory study on the effect of electronic excited-state hydrogen bonding on luminescent MOFs

Min Ji, Ce Hao,* Dandan Wang, Hongjiang Li and Jieshan Qiu

We have investigated a new silver-based luminescent metal-organic framework (MOF) using density functional theory and time-dependent density functional theory methods.

3471

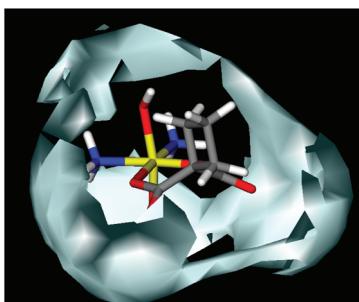


Bis(hydrosulfido)-bridged dinuclear rhodium(I) complexes as a platform for the synthesis of trinuclear sulfido aggregates with the core $[\text{MRh}_2(\mu_3-\text{S}_2)]$ ($\text{M} = \text{Rh, Ir, Pd, Pt, Ru}$)

Ricardo Castarlenas, Carmen Cunchillos, Daniel Gómez-Bautista, M. Victoria Jiménez, Fernando J. Lahoz, José R. Miranda, Luis A. Oro* and Jesús J. Pérez-Torrente*

$[\text{Rh}(\mu\text{-SH})\text{L}_2]_2$ complexes are versatile precursors for the synthesis of trinuclear sulfido-bridged aggregates with trigonal-bipyramidal $[\text{MRh}_2(\mu_3\text{-S}_2)]$ cores.

3482

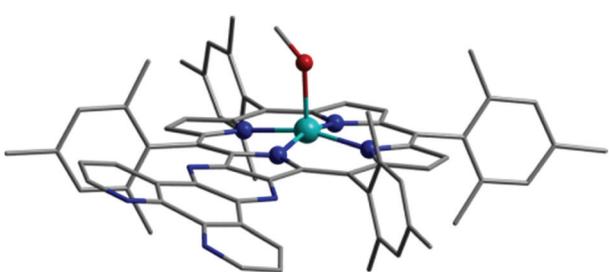


Molecular interaction fields vs. quantum-mechanical-based descriptors in the modelling of lipophilicity of platinum(IV) complexes

Giuseppe Ermondi, Giulia Caron, Mauro Ravera, Elisabetta Gabano, Sabrina Bianco, James A. Platts and Domenico Osella*

Size and hydrophobicity VolSurf descriptors were able to model the lipophilicity of a series of different Pt(IV) complexes.

3490



Synthesis and characterization of mono- and dinuclear phenanthroline-extended tetramesitylporphyrin complexes as well as UV-Vis and EPR studies on their one-electron reduced species

Corinna Matlachowski and Matthias Schwalbe*

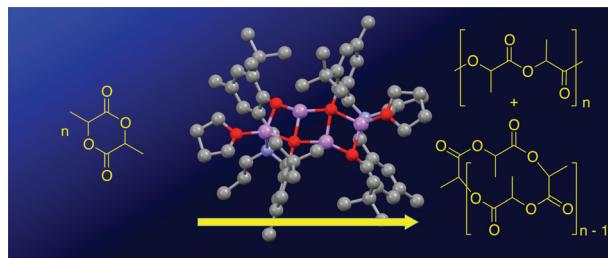
The synthesis and characterization of mononuclear (**M-1**, with **M** = Zn, Cu and Pd) and dinuclear compounds (**M-1-Ru**) are reported. Single electron reduction was followed by UV-Vis and EPR analysis.

3504

Ring-opening polymerization of cyclic esters with lithium amine-bis(phenolate) complexes

Rebecca K. Dean, Amy M. Reckling, Hua Chen, Louise N. Dawe, Celine M. Schneider and Christopher M. Kozak*

Lithium amine-bis(phenolate) complexes catalyze ROP of *rac*-lactide to give predominantly cyclic polymers.

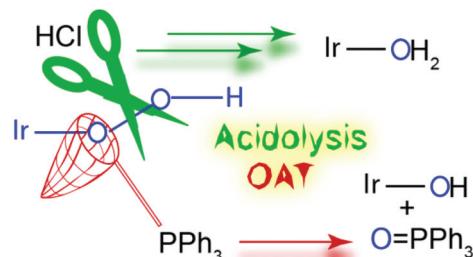


3521

Acidolysis and oxygen atom transfer reactivity of a diiridium hydroperoxo complex

Thomas S. Teets and Daniel G. Nocera*

A diiridium hydroperoxo complex transfers an oxygen atom to phosphines, and reacts with acid to liberate water upon cleavage of the oxygen–oxygen bond.

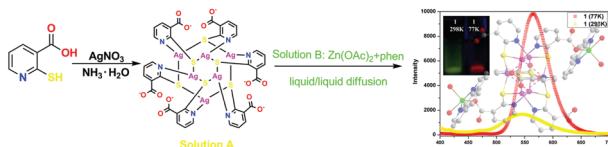


3528

Bright-yellow to orange-red thermochromic luminescence of an $\text{Ag}^{I\!I}_6\text{-Zn}^{II\!I}_2$ heterometallic aggregate

Di Sun,* Liangliang Zhang, Haifeng Lu, Shengyu Feng and Daofeng Sun

A novel octanuclear $\text{Ag}^{I\!I}_6\text{-Zn}^{II\!I}_2$ heterometallic aggregate exhibits interesting temperature dependent photoluminescence behaviors, including gradual changes in energy and intensity upon cooling.

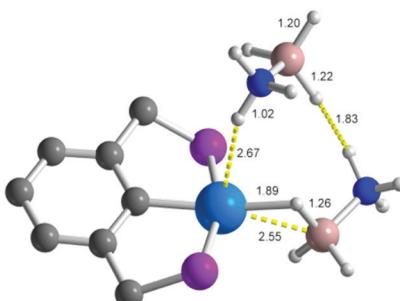


3533

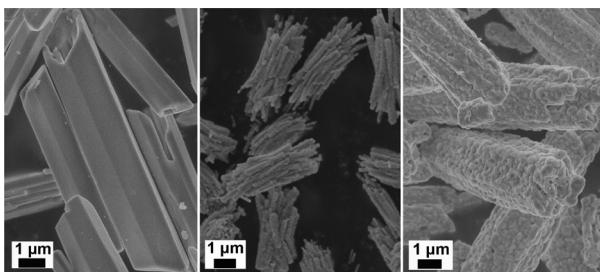
Catalytic amine-borane dehydrogenation by a PCP-pincer palladium complex: a combined experimental and DFT analysis of the reaction mechanism

Andrea Rossini,* Giovanni Bottari, Ana M. Lozano-Vila, Margarita Paneque,* Maurizio Peruzzini,* Andrea Rossi and Fabrizio Zanobini

Catalytic amine-borane dehydrogenation by a pincer Pd^{II} complex has been analyzed through combined experimental and DFT methods.



3542



Up-conversion luminescence and near-infrared quantum cutting in $\text{Y}_6\text{O}_5\text{F}_8:\text{RE}^{3+}$ ($\text{RE} = \text{Yb}, \text{Er}$, and Ho) with controllable morphologies by hydrothermal synthesis

Jia Zhang, Yuhua Wang,* Linna Guo and Pengyu Dong

Various morphologies have been obtained hydrothermally by employing different surfactants, which exhibit excellent up-conversion and NIR quantum cutting luminescence properties.

3552

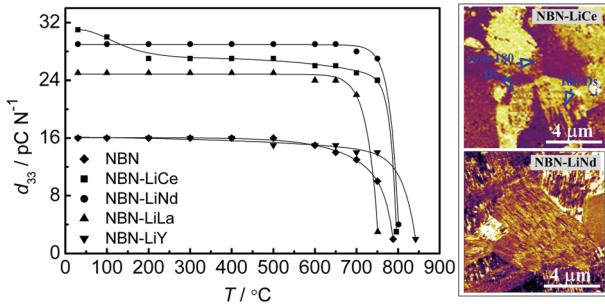


An NBD-armed thiocalix[4]arene-derived colorimetric and fluorometric chemosensor for Ag^+ : a metal-ligand receptor of anions

Yu Fu, Lan Mu, Xi Zeng,* Jiang-Lin Zhao, Carl Redshaw, Xin-Long Ni* and Takehiko Yamato

A new type of colorimetric and fluorometric chemosensor for cations and anions has been developed based on calixarenes.

3561

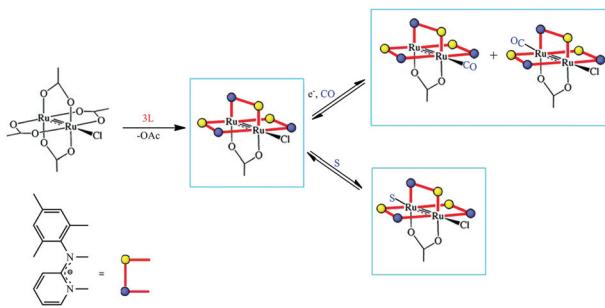


High temperature Aurivillius piezoelectrics: the effect of (Li, Ln) modification on the structure and properties of $(\text{Li}, \text{Ln})_{0.06}(\text{Na}, \text{Bi})_{0.44}\text{Bi}_2\text{Nb}_2\text{O}_9$ ($\text{Ln} = \text{Ce}, \text{Nd}, \text{La}$ and Y)

Changbai Long, Huiqing Fan* and Mengmeng Li

The dissimilar high temperature piezoelectric properties of $(\text{Li}, \text{Ln})_{0.06}(\text{Na}, \text{Bi})_{0.44}\text{Bi}_2\text{Nb}_2\text{O}_9$ (NBN-LiLn, Ln = Ce, Nd, La and Y) ceramics originate from their inhomogeneous domain structures.

3571



Synthesis, structure, and electrochemical characterization of a mixed-ligand diruthenium(III,II) complex with an unusual arrangement of the bridging ligands

Siyabonga Ngubane, Karl M. Kadish,* John L. Bear,* Eric Van Caemelbecke, Antoine Thuriere and Kevin P. Ramirez

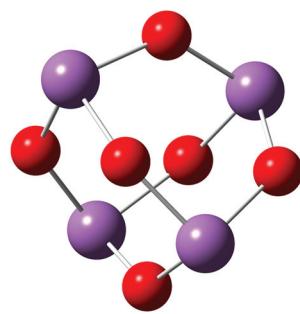
The first mixed-ligand diruthenium complex having a "(2,1)" geometric conformation of the unsymmetrical bridging ligands was structurally and physicochemically characterized.

3581

The re-determination of the molecular structure of antimony(III) oxide using very-high-temperature gas electron diffraction (VHT-GED)

Sarah L. Masters,* Georgiy V. Girichev and Sergey A. Shylkov

The molecular structure of antimony(III) oxide has been re-investigated utilising a new high-temperature nozzle system designed for the Canterbury (NZ) gas electron diffraction apparatus.

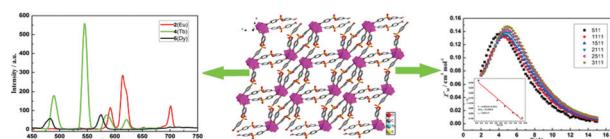


3587

Structures, luminescent and magnetic properties of six lanthanide–organic frameworks: observation of slow magnetic relaxation behavior in the Dy^{III} compound

Yin-Ling Hou, Gang Xiong, Bo Shen, Bin Zhao,* Zhi Chen and Jian-Zhong Cui*

Six novel 3D lanthanide–organic frameworks were synthesized and structurally characterized. Some of them exhibit strong luminescence and single molecule magnet behavior.

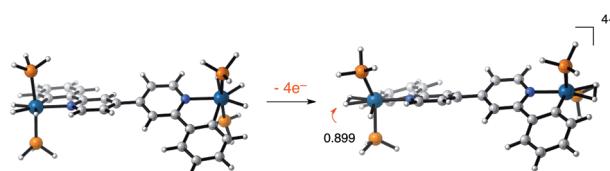


3597

Mono- and dinuclear osmium *N,N'*-di- and tetraphenylbipyridyls and extended bipyridyls. Synthesis, structure and electrochemistry

Miguel A. Esteruelas, Israel Fernández, Mar Gómez-Gallego, Mamen Martín-Ortíz, Pedro Molina, Montserrat Oliván, Francisco Otón, Miguel A. Sierra* and Marta Valencia

Synthesis and electrochemistry of new mono- and dinuclear osmium polyhydrides derived from *N,N'*-di- and tetraphenylbipyridyls and extended bipyridyls.

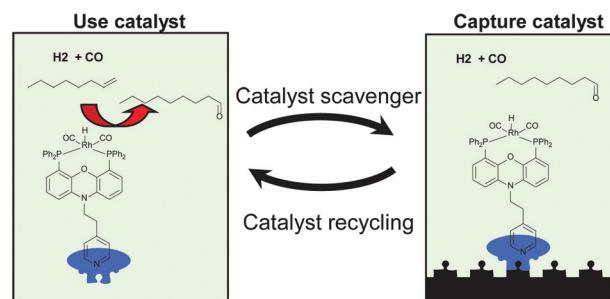


3609

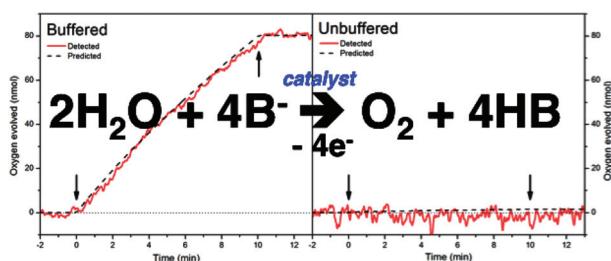
Catalyst recycling via specific non-covalent adsorption on modified silicas

Alexander M. Kluwer,* Chretien Simons, Quinten Knijnenburg, Jarl Ivar van der Vlugt, Bas de Bruin and Joost N. H. Reek*

This article describes a new strategy for the recycling of a homogeneous hydroformylation catalyst, by selective adsorption of the catalyst to tailor-made supports after a batchwise reaction.



3617

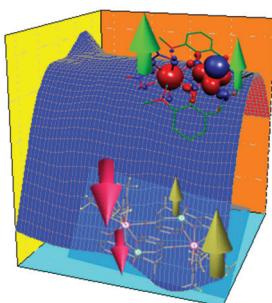


Effects of aqueous buffers on electrocatalytic water oxidation with an iridium oxide material electrodeposited in thin layers from an organometallic precursor

Maxwell N. Kushner-Lenhoff, James D. Blakemore, Nathan D. Schley, Robert H. Crabtree* and Gary W. Brudvig*

Buffering can lower the overpotential for water oxidation with an amorphous thin-layer iridium electrocatalyst, but corrosion occurs in some cases.

3623

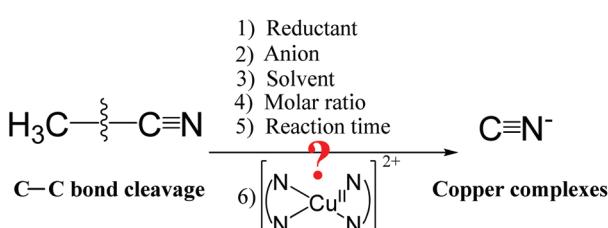


Decisive interactions that determine ferro/antiferromagnetic coupling in {3d–4f} pairs: a case study on dinuclear {V(iv)–Gd(III)} complexes

Saurabh Kumar Singh and Gopalan Rajaraman*

What controls the sign of exchange in {3d–4f} complexes? DFT–CASSCF studies have been used to detect the decisive interactions in these complexes.

3631

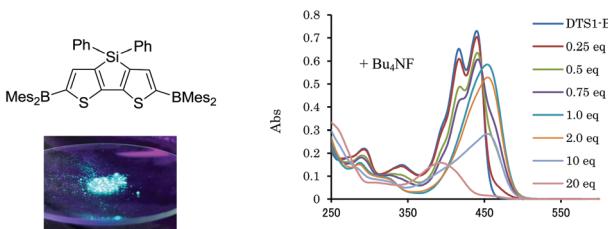


C–C bond cleavage in acetonitrile by copper(II)–bipyridine complexes and *in situ* formation of cyano-bridged mixed-valent copper complexes

Feng Xu, Tao Tao, Kun Zhang, Xiao-Xu Wang, Wei Huang* and Xiao-Zeng You

Copper(II)–bipyridine complexes have been used in the C–C bond cleavage of acetonitrile and a series of cyano-bridged mixed-valent copper complexes have been formed *in situ*, where six influencing factors are systematically investigated.

3646



Synthesis of dithienosilole-based highly photoluminescent donor–acceptor type compounds

Joji Ohshita,* Yuta Tominaga, Daiki Tanaka, Yousuke Ooyama, Tomonobu Mizumo, Norifumi Kobayashi and Hideyuki Higashimura

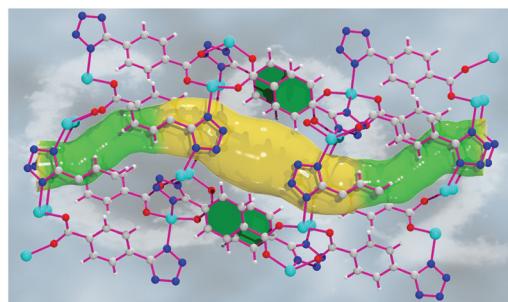
Highly emissive DTS-based donor–acceptor type compounds that respond to fluoride anions were prepared.

3653

A polar tetrazolyl-carboxyl microporous Zn(II)-MOF: sorption and luminescent properties

Lei Hou, Li-Na Jia, Wen-Juan Shi, Yao-Yu Wang,* Bo Liu and Qi-Zhen Shi

A polar porous framework exhibits high CO₂ sorption affinity, CO₂/N₂ and CO₂/H₂ selectivities, and photoluminescent change involved the solvents inclusion/release.

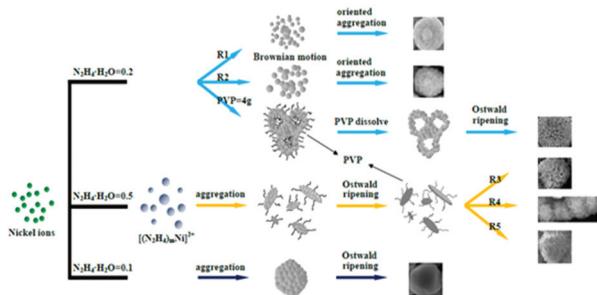


3660

Synthesis of nickel hierarchical structures and evaluation on their magnetic properties and Congo red removal ability

Guangshu Zhang and Lijun Zhao*

By regulating the dynamics factors, a series of super structures were prepared.

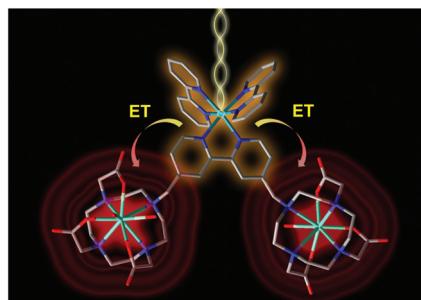


3667

Ln₂M complexes (M = Ru, Re) derived from a bismacrocyclic ligand containing a 4,4'-dimethyl-2,2'-bipyridyl bridging unit

Loïc J. Charbonnière,* Stephen Faulkner,* Carlos Platas-Iglesias,* Martín Regueiro-Figueroa, Aline Nonat, Teresa Rodríguez-Blas, Andrés de Blas, William S. Perry and Manuel Tropiano

Introduction of [Ru(Bpy)₂]²⁺ and Re(CO)₃Cl chromophores into homodinuclear Ln(III) complexes provides an efficient sensitization of Ln(III) luminescence in the NIR region.

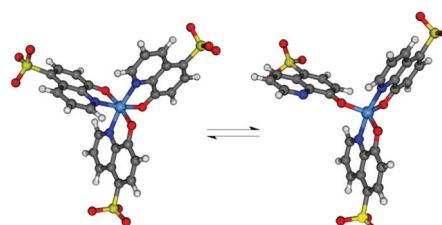


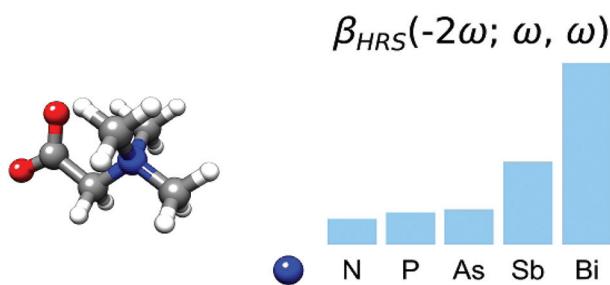
3682

Structural and photophysical studies on gallium(III) 8-hydroxyquinoline-5-sulfonates. Does excited state decay involve ligand photolabilisation?

M. Luísa Ramos,* Andreia R. E. de Sousa, Licínia L. G. Justino, Sofia M. Fonseca, Carlos F. G. C. Geraldes and Hugh D. Burrows

Gallium(III) forms 1 : 1, 1 : 2 and 1 : 3 complexes with 8-HQS. Photophysical properties are compared with those of Al(III) complexes; ligand photolabilisation is suggested to be responsible for relatively low fluorescence yields.

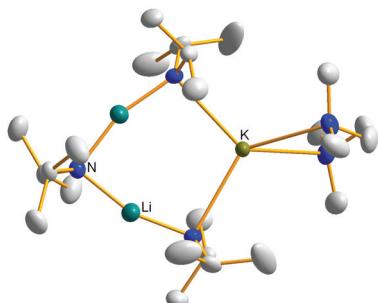




Theoretical study of heavy-atom tuning of nonlinear optical properties in group 15 derivatives of *N,N,N*-trimethylglycine (betaine)

Bruce F. Milne,* Fernando Nogueira and Cláudia Cardoso

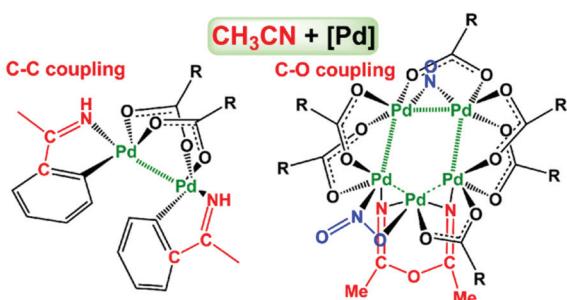
DFT response theory calculations show that heavy group 15 elements introduced into the simple organic molecule betaine produce large increases in nonlinear optical susceptibilities and alter chromophore symmetry whilst causing minimal geometrical changes.



A hetero-alkali-metal version of the utility amide LDA: lithium–potassium diisopropylamide

David R. Armstrong, Alan R. Kennedy, Robert E. Mulvey* and Stuart D. Robertson*

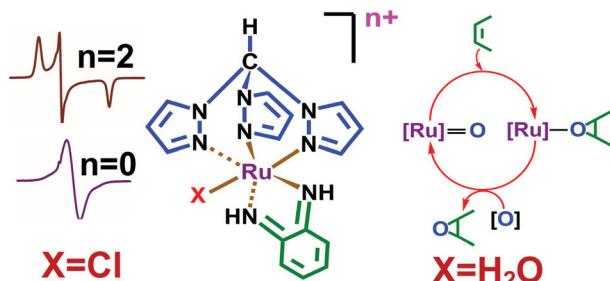
Combining both lithium and potassium, the first example of a hetero-alkali-metallic complex of the synthetically important diisopropylamide has been prepared and characterized as a lithium rich discrete cyclic molecule.



Reactivity of polynuclear palladium carboxylate complexes towards acetonitrile: synthesis and X-ray study of Pd₂(C₆H₄-o-C(=NH)CH₃)₂(CH₃CO₂)₂ and Pd₅(CH₃C(=N)OC(=N)CH₃)(NO)(NO₂)_x(RCO₂)_{7-x}

Oleg N. Shishilov,* Nailya S. Akhmadullina, Yaroslava N. Rezinkova, Roman E. Podobedov, Andrei V. Churakov and Inessa A. Efimenko

Reactions of palladium carboxylates and nitrosyl carboxylates with acetonitrile and common organic solvents were found to lead to C–C and C–O coupling processes.



Electronic structure and catalytic aspects of [Ru(tpm)(bqdi)(Cl/H₂O)]ⁿ⁺, tpm = tris(1-pyrazolyl)methane and bqdi = o-benzoquinonediimine

Hemlata Agarwala, Fabian Ehret, Abhishek Dutta Chowdhury, Somnath Maji, Shaikh M. Mobin, Wolfgang Kaim* and Goutam Kumar Lahiri*

Redox series including {Ru^{II}(bqdi⁰)Cl/H₂O}ⁿ⁺, {Ru^{III}(bqdi⁰)Cl}²⁺, {Ru^{II}(bqdi⁻)Cl}⁰, {Ru^{III}(bqdi⁰)OH}²⁺, {Ru^{IV}(bqdi⁰)O}²⁺ and the application of the aqua complex for a selective epoxidation process are reported.