

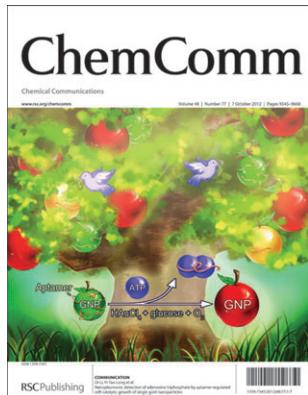
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ISSN 1359-7345 CODEN CHCOFS 48(77) 9545–9668 (2012)



Cover

See Di Li, Yi-Tao Long *et al.*, pp. 9574–9576.
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Inside cover

See Gonen Ashkenasy *et al.*, pp. 9577–9579.
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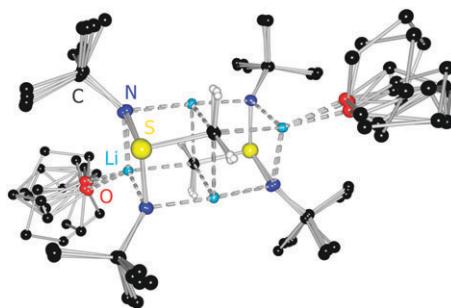
FEATURE ARTICLE

9559

Polyimido sulfur anions and ylides

Dietmar Stalke*

Polyimido sulfur anions and ylides provide a rich scope of different coordination modes to various metals due to their different charges and donor sites.



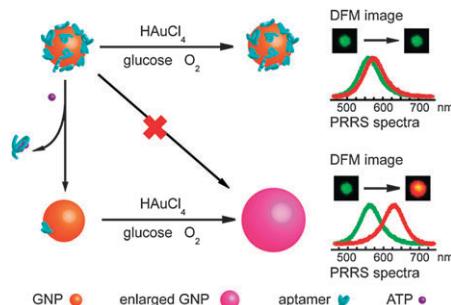
COMMUNICATIONS

9574

Nanoplasmonic detection of adenosine triphosphate by aptamer regulated self-catalytic growth of single gold nanoparticles

Qing Liu, Chao Jing, Xiaoxue Zheng, Zhen Gu, Di Li,* Da-Wei Li, Qing Huang, Yi-Tao Long* and Chunhai Fan

A novel nanoplasmonic aptasensor was designed for the detection of adenosine triphosphate based on self-catalytic growth of single gold nanoparticles.



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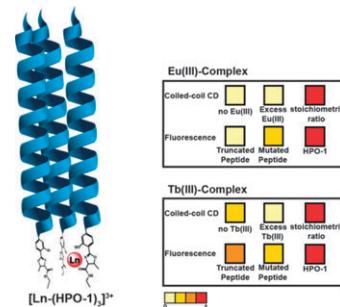
COMMUNICATIONS

9577

Allosteric effects in coiled-coil proteins folding and lanthanide-ion binding

Manickasundaram Samiappan, Samaa Alasibi, Rivka Cohen-Luria, Abraham Shanzer and Gonen Ashkenasy*

Peptide sequences modified with new lanthanide-chelating groups were synthesized, and their complexes with Ln(III) ions showed enhanced stability due to coiled-coil structure formation.

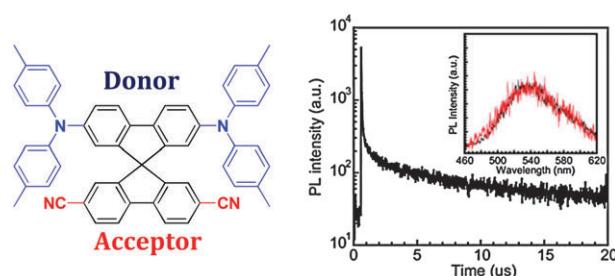


9580

Electroluminescence based on thermally activated delayed fluorescence generated by a spirobifluorene donor–acceptor structure

Tetsuya Nakagawa, Sung-Yu Ku, Ken-Tsung Wong* and Chihaya Adachi*

An organic light emitting diode based on thermally activated delayed fluorescence (TADF) has been produced using a spirobifluorene derivative (Spiro-CN) having the donor–acceptor moieties as an emitter.

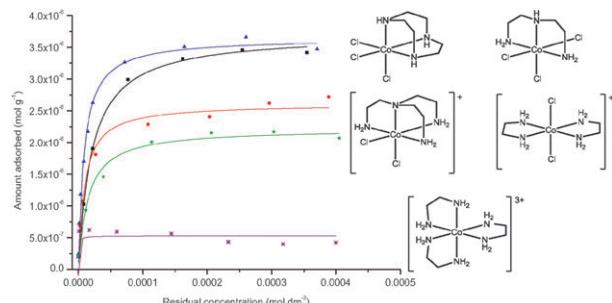


9583

Cobalt(III) complexes as functional ligands for metal (oxide) surfaces

Rachel J. Cooper, Reuben T. Jane, Thomas E. Jeffs, Richard M. Hartshorn* and Peter A. Tasker*

Co(III) polyamine complexes with either two or three labile coordination sites bind strongly to high surface area metal oxides such as goethite or aluminium trihydroxide.

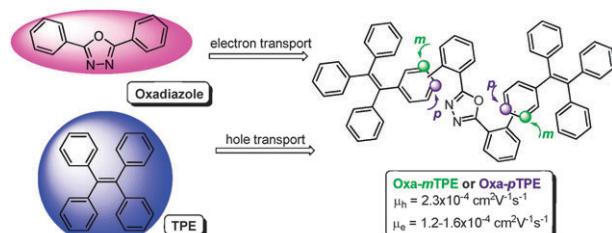


9586

Bipolar AIE-active luminogens comprised of an oxadiazole core and terminal TPE moieties as a new type of host for doped electroluminescence

Jing Huang, Xiao Yang, Xianjie Li, Pengyu Chen, Runli Tang, Feng Li, Ping Lu, Yuguang Ma, Lei Wang,* Jingui Qin, Qianqian Li and Zhen Li*

Bipolar AIE-active luminogens (**Oxa-pTPE** and **Oxa-mTPE**) constructed from tetraphenylethene and oxadiazole were successfully synthesized and first utilized as fluorescence host materials in sky-blue doped OLEDs, with good performance.



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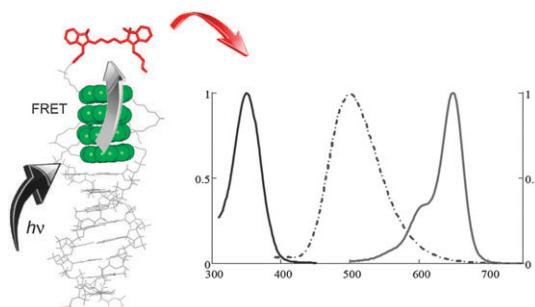
COMMUNICATIONS

9589

Photon harvesting by excimer-forming multichromophores

Oliver O. Adeyemi, Vladimir L. Malinovskii,
Sarah M. Biner, Gion Calzaferri* and Robert Häner*

A photon-harvesting antenna system based on a DNA-organized oligopyrene–cyanine complex is described. Energy transfer from the pyrene units to the cyanine dye was found to proceed *via* FRET between locally confined excimers and the acceptor.

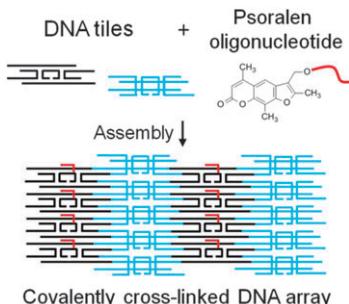


9592

Triplex-directed covalent cross-linking of a DNA nanostructure

David A. Rusling,* Iris S. Nandhakumar, Tom Brown and Keith R. Fox*

Triplex DNA recognition is utilized to direct inter-strand cross-linking reactions at precise locations within a pre-assembled DNA nanostructure.

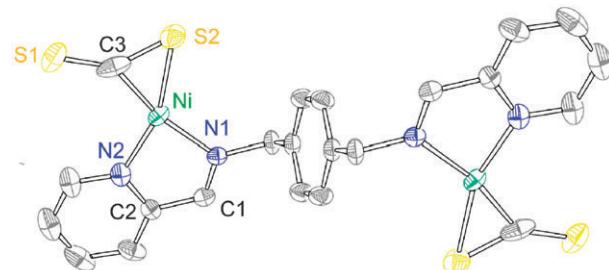


9595

Carbon disulfide binding at dinuclear and mononuclear nickel complexes ligated by a redox-active ligand: iminopyridine serving as an accumulator of redox equivalents for the activation of heteroallenes

Amarnath Bheemaraju, Jeffrey W. Beattie, Richard L. Lord, Philip D. Martin and Stanislav Groysman*

Redox-active iminopyridine chelates facilitate Ni-mediated carbon disulfide binding and activation at dinuclear and mononuclear platforms.

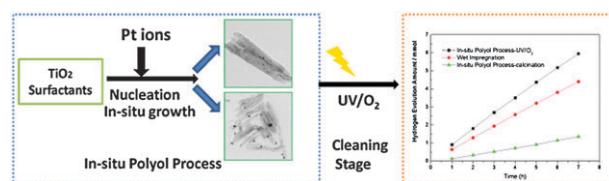


9598

***In situ* controllable synthesis platinum nanocrystals on TiO₂ by novel polyol-process combined with light induced photocatalysis oxidation**

Zhi Jiang, Hongyan Guo, Zheng Jiang, Guosheng Chen, Longfei Xia, Wenfeng Shangguan* and Xiaojun Wu*

We report a novel approach combining an *in situ* polyol process with light induced photocatalysis oxidation to prepare clean Pt/TiO₂ with highly dispersed controlled Pt nanocrystals.



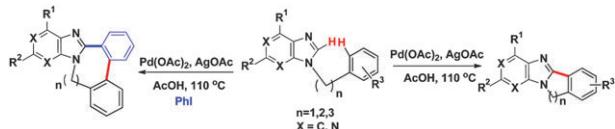
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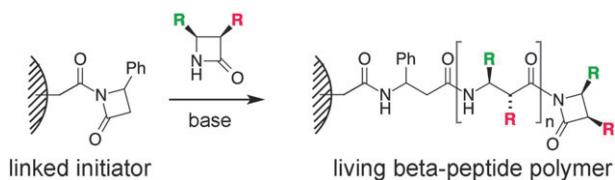
Synthesis of fused *N*-heterocycles via tandem C–H activation

Ge Meng, Hong-Ying Niu, Gui-Rong Qu, John S. Fossey, Jian-Ping Li* and Hai-Ming Guo*

The synthesis of fused *N*-heterocycles has been developed using an intramolecular cyclisation of purines or benzimidazoles. A range of medium and large rings were prepared.



9604

 **β -Peptide coatings by surface-initiated polymerization**

Li Chen, Yong Lei, Abbas G. Shilabin, James D. Delaney, George R. Baran* and Scott McN. Sieburth*

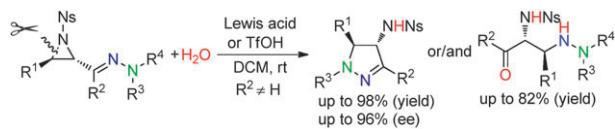
Homopolymers of β -lactams covalently linked to glass and silica surfaces are grown by base catalyzed surface-initiated polymerization, yielding particles coated with β -peptides terminated in a reactive end group.

9607

Facile synthesis of 2-pyrazolines and α,β -diamino ketones via regioselective ring-opening of hydrazone-tethered aziridines

Zhen Zhang, De Wang, Yin Wei and Min Shi*

Lewis acid catalyzed or trifluoromethanesulfonic acid mediated SN_2 -type ring-opening of *N*-(aziridin-2-ylethylidene)hydrazines or *N*-(aziridin-2-ylbutylidene)hydrazines forming 2-pyrazolines and α,β -diamino ketones.

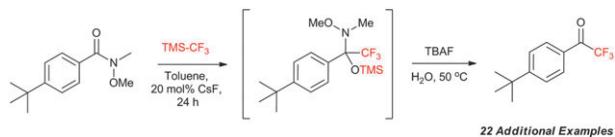


9610

A Weinreb amide approach to the synthesis of trifluoromethylketones

DiAndra M. Rudzinski, Christopher B. Kelly and Nicholas E. Leadbeater*

A route to access trifluoromethylketones (TFMKs) from Weinreb amides is reported.



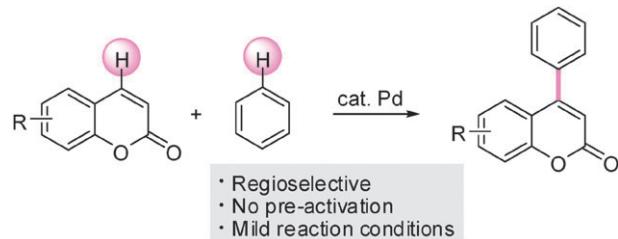
COMMUNICATIONS

9613

Regioselective palladium-catalyzed direct cross-coupling of coumarins with simple arenes

Minsik Min and Sungwoo Hong*

An efficient protocol for the direct cross-coupling of coumarins with unactivated arenes *via* a palladium-catalyzed twofold C–H functionalization has been developed. This approach offers an unprecedented direct route to the C4-selective arylation of coumarins with simple arene partners under mild conditions.

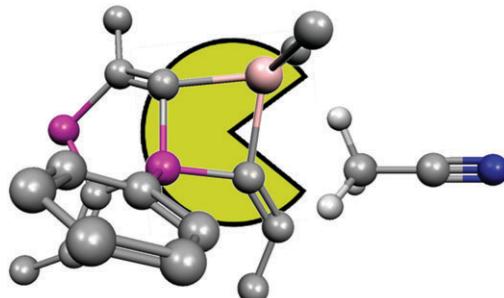


9616

Alkyne and acetonitrile activation by strained AlPC₂ heterocycles

Steffi Roters, Alexander Hepp, J. Chris Slootweg, Koop Lammertsma* and Werner Uhl*

Four-membered AlPC₂ heterocycles react as “masked Frustrated Lewis Pairs” by ring opening and activation of small molecules such as acetonitrile.

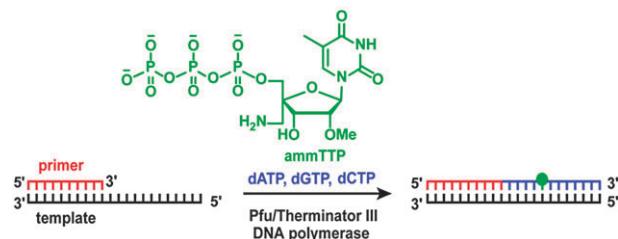


9619

Incorporation of 4'-C-aminomethyl-2'-O-methylthymidine into DNA by thermophilic DNA polymerases

Ganesh N. Nawale, Kiran R. Gore, Claudia Höbartner* and P. I. Pradeepkumar*

The dual ribose-modified thymidine analog ammTTP was synthesized and shown to be a competent substrate for DNA polymerases Pfu and Therminator III. The dual ammT modification imparted higher exonuclease resistance to DNA than 2'-O-methylthymidine.

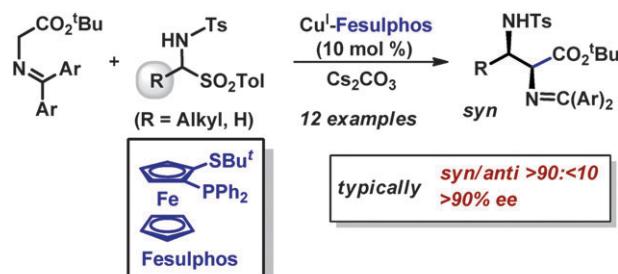


9622

Catalytic asymmetric Mannich reaction of glycine Schiff bases with α -amido sulfones as precursors of aliphatic imines

Elier Hernando, Ramón Gómez Arrayás* and Juan C. Carretero*

Highly diastereo- and enantiocontrolled Cu^I-Fesulphos-catalyzed Mannich reaction of glycinate Schiff bases with aliphatic imines generated *in situ* from α -amido sulfones.



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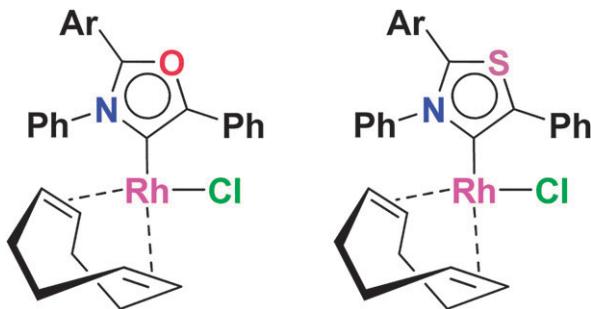
COMMUNICATIONS

9625

Abnormal oxazol-4-ylidene and thiazol-4-ylidene rhodium complexes: synthesis, structure, and properties

Jun Zhang,* Jun Fu, Xiaolong Su, Xinkle Qin, Meixin Zhao and Min Shi*

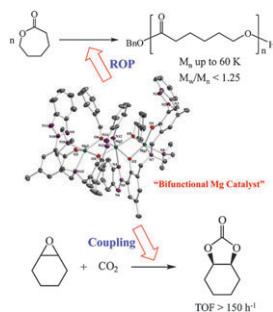
The syntheses of new 2,3,5-triaryl-substituted oxazolium and thiazolium salts and oxazol-4-ylidene and thiazol-4-ylidene rhodium complexes have been developed.



9628

Trimetallic magnesium complexes bearing amine-bis(benzotriazole phenolate) derivatives as bifunctional catalysts for ring-opening polymerization and CO₂/epoxide coupling

Chen-Yu Li, Chen-Ruei Wu, Yi-Chang Liu and Bao-Tsan Ko*

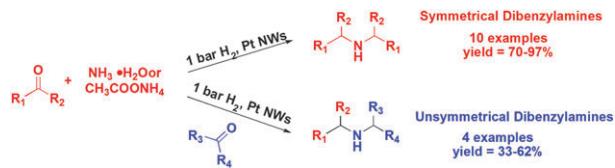
This study demonstrates the first example of catalysis of both ROP and CO₂/epoxide coupling using magnesium complexes as bifunctional catalysts.

9631

Selective synthesis of secondary amines by Pt nanowire catalyzed reductive amination of aldehydes and ketones with ammonia

Fenqiang Qi, Lei Hu, Shuanglong Lu, Xueqin Cao and Hongwei Gu*

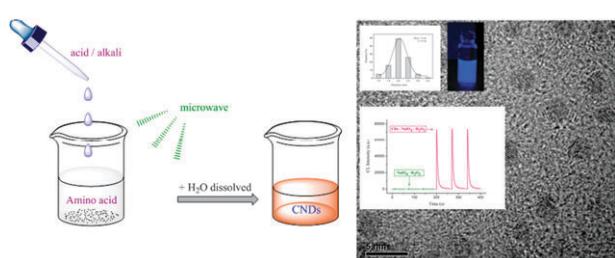
The process of the selective reduction of aldehydes or ketones in the presence of ammonia using unsupported ultra-thin Pt nanowires has been developed. This catalytic system shows high activity and selectivity under mild reaction conditions.



9634

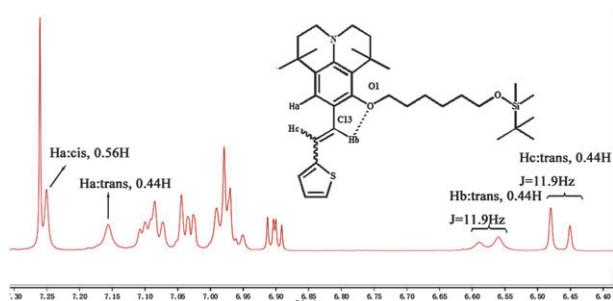
Amino acids as the source for producing carbon nanodots: microwave assisted one-step synthesis, intrinsic photoluminescence property and intense chemiluminescence enhancement

Jie Jiang, Yi He, Shiyuan Li and Hua Cui*

In this communication, we report a general strategy for the production of carbon nanodots by microwave irradiation of amino acids in the presence of acid or alkali. The resultant CDs exhibit strong photoluminescence and intense chemiluminescence enhancement of the NaIO₄-H₂O₂ system.

COMMUNICATIONS

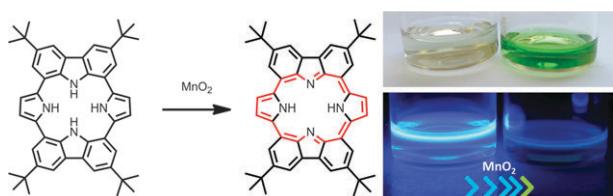
9637

**Synthesis of novel nonlinear optical chromophore to achieve ultrahigh electro-optic activity**

Jieyun Wu, Shuhui Bo, Jialei Liu, Tingting Zhou, Hongyan Xiao, Ling Qiu, Zhen Zhen and Xinhou Liu*

A new diene-conjugated chromophore WJ1 was synthesized with high yield of 36% through an H-bonding induced Vilsmeier reaction.

9640

**A carbazole-containing porphyrinoid: synthesis and oxidation to the porphyrin-state**

Lena Arnold, Martin Baumgarten and Klaus Müllen*

The synthesis of a carbazole-containing porphyrinoid via one-pot Suzuki–Miyaura reaction is reported. Oxidation with MnO₂ yielded its porphyrin-state featuring macrocyclic aromaticity.

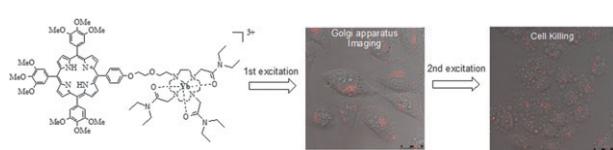
9643

**Fluorocyclohexanes: synthesis and structure of all-*syn*-1,2,4,5-tetrafluorocyclohexane**

Alastair J. Durie, Alexandra M. Z. Slawin, Tomas Lebl, Peer Kirsch and David O'Hagan*

A one-step fluorination reaction of a diepoxide is executed to generate the all-*syn* isomer of 1,2,4,5-tetrafluorocyclohexane which emerges to be a particularly polar cyclohexane analogue with polarised faces.

9646

**A potential water-soluble ytterbium-based porphyrin–cyclen dual bio-probe for Golgi apparatus imaging and photodynamic therapy**

Jing-Xiang Zhang,* Hongguang Li, Chi-Fai Chan, Rongfeng Lan, Wai-Lun Chan, Ga-Lai Law,* Wai-Kwok Wong* and Ka-Leung Wong*

We reported a porphyrin-based ytterbium complex for imaging of the Golgi apparatus and photodynamic therapy.

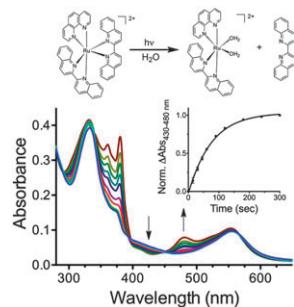
COMMUNICATIONS

9649

Light-activated ruthenium complexes photobind DNA and are cytotoxic in the photodynamic therapy window

Erin Wachter, David K. Heidary, Brock S. Howerton, Sean Parkin and Edith C. Glazer*

Incorporation of biquinoline ligands into Ru(II) polypyridyl complexes produces light-activated systems that eject a ligand and photobind DNA after irradiation with visible and near-IR light, and act as anti-cancer photodynamic therapy (PDT) agents in the tissue penetrant region.

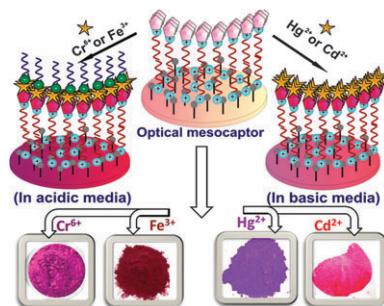


9652

A multi-pH-dependent, single optical mesosensor/captor design for toxic metals

Sherif A. El-Safty,* Mohamed A. Shenashen and Adel A. Ismail

We designed a single, pH-dependent, mesocaptor/sensor for the optical and selective removal of toxic ions from drinking water and physiological systems such as blood.

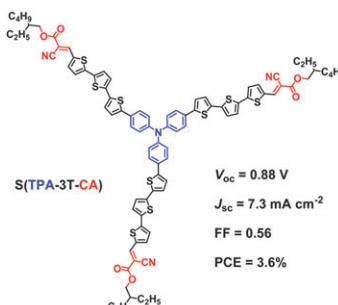


9655

A star-shaped oligothiophene end-capped with alkyl cyanoacetate groups for solution-processed organic solar cells

Yuze Lin, Zhi-Guo Zhang, Huitao Bai, Yongfang Li* and Xiaowei Zhan*

A novel star-shaped donor–acceptor oligothiophene based on triphenylamine as a core and cyanoacetate as acceptor end groups was synthesized, which afforded a power conversion efficiency of 3.60% in solution-processed organic solar cells.

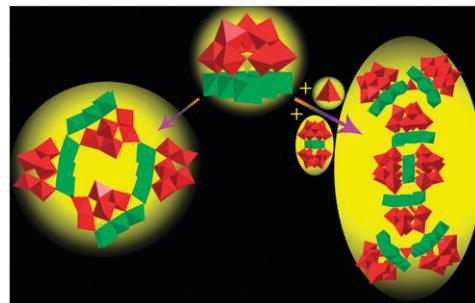


9658

Poly(polyoxometalate)s assembled by {Ni₆PW₉} units: from ring-shaped Ni₂₄-tetramers to rod-shaped Ni₄₀-octamers

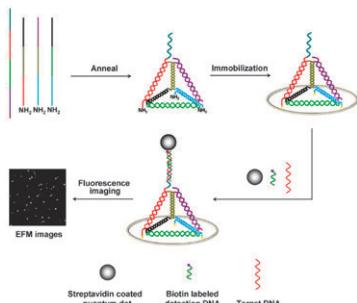
Ling Huang, Jie Zhang, Lin Cheng and Guo-Yu Yang*

Both structure-directing effect and synergistic-directing effect of PW₉O₃₄ fragments result in two poly(polyoxotungstate)s (poly(POT)s) of the Ni₂₄-based tetramer with largest transition metal atoms in ring-shaped poly(POT) tetramers and the Ni₄₀-based poly(POT) octamer with the highest Ni ions in all known poly(POT) to date, respectively.



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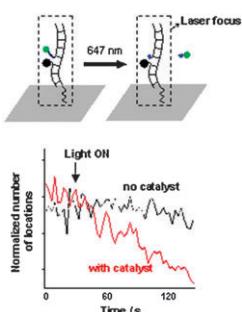
9661

**Quantitative detection of single DNA molecules on DNA tetrahedron decorated substrates**

Zhenguang Wang, Qingwang Xue, Wenzhi Tian, Lei Wang* and Wei Jiang*

A single DNA molecule quantitation method on DNA tetrahedron decorated substrates has been developed.

9664

**Hybridization and reaction-based fluorogenic nucleic acid probes**

Subrata Dutta, Benjamin Flottmann, Mike Heilemann and Andriy Mokhir*

We developed fluorogenic probes, which are photoactivated in the presence of specific nucleic acid templates with the release of fluorescent dyes.

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