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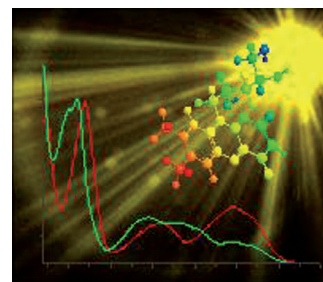


### Photochemistry

M. Insińska-Rak,\* M. Sikorski

Riboflavin Interactions with Oxygen—A Survey from the Photochemical Perspective

**Lighting up flavins:** Flavins are biologically important compounds present in living cells. The significance of light influence on flavins is depicted in the figure and indicates importance of the study undertaken on their photochemistry and photophysics.



Chem. Eur. J.  
DOI: 10.1002/chem.201403895

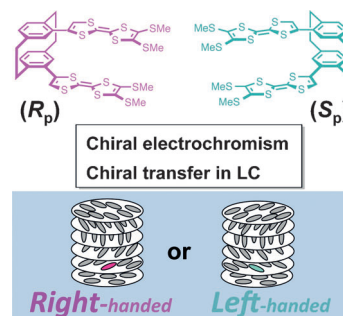


### Electrochromism

K. Kobayakawa, M. Hasegawa,\* H. Sasaki, J. Endo, H. Matsuzawa, K. Sako, J. Yoshida, Y. Mazaki

Dimeric Tetrathiafulvalene Linked to *pseudo-ortho*-[2.2]Paracyclophane: Chiral Electrochromic Properties and Use as a Chiral Dopant

**Chiral electrochromic properties:** The synthesis and electrochromic (EC) chiroptical properties of chiral *pseudo-ortho*-[2.2]paracyclophane with tetrathiafulvalene units are reported. They exhibited pronounced EC properties in various redox states. Each enantiomer was examined as a chiral dopant for nematic liquid crystals (LCs), and the induced helicity of the LC solvent was in accord with the molecular chirality.



Chem. Asian J.  
DOI: 10.1002/asia.201402667

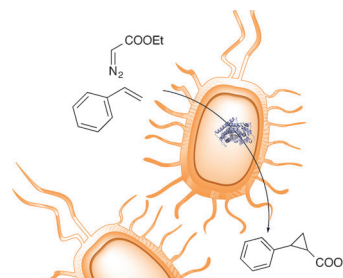


### Biocatalysis

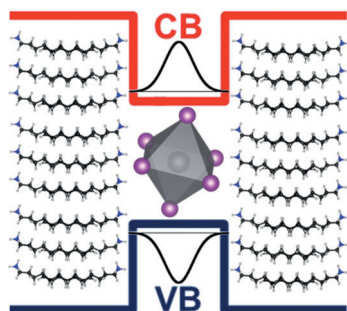
T. Heel, J. A. McIntosh, S. C. Dodani, J. T. Meyerowitz, F. H. Arnold\*

Non-natural Olefin Cyclopropanation Catalyzed by Diverse Cytochrome P450s and Other Hemoproteins

**Cytochrome catalysts:** We investigated the ability of selected P450 enzymes to catalyze a non-natural formal carbene transfer reaction. All enzymes were active and exhibited a range of product selectivities in the model reaction. Serum albumins complexed with hemin were also found to be efficient in vitro cyclopropanation catalysts.



ChemBioChem  
DOI: 10.1002/cbic.201402286



ChemPhysChem

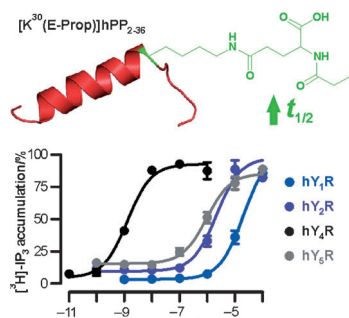
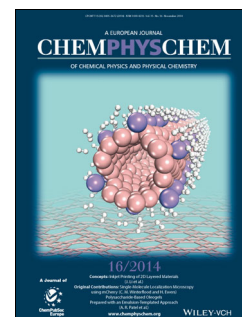
DOI: 10.1002/cphc.201402428

## Quantum Confinement

J. Even,\* L. Pedesseau, C. Katan\*

Understanding Quantum Confinement of Charge Carriers in Layered 2D Hybrid Perovskites

**Form a band:** Quantum confinement of charge carriers in 2D hybrid perovskites is investigated, starting with the concepts of effective mass and quantum wells. For ultrathin layers, the effective-mass model fails. An alternative approach in which these perovskites are treated as composite materials is suggested, including band-offset calculations. CB=conduction band, VB=valence band.



ChemMedChem

DOI: 10.1002/cmdc.201402235

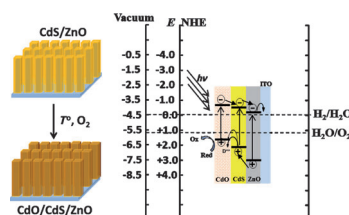
## Therapeutic Peptides

V. Mäde, K. Bellmann-Sickert, A. Kaiser, J. Meiler, A. G. Beck-Sickinger\*

Position and Length of Fatty Acids Strongly Affect Receptor Selectivity Pattern of Human Pancreatic Polypeptide Analogues

**Fatty acids against obesity:** Pancreatic polypeptide was lipidated at different sites using diverse fatty acid lengths to improve its stability and selectivity for prospective anti-obesity therapy.

[K<sup>30</sup>(E-Prop)]hPP<sub>2-36</sub> (**15**) was uncovered as a new ligand with superior Y receptor selectivity and enhanced in vitro stability.



ChemSusChem

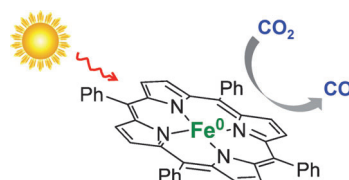
DOI: 10.1002/cssc.201402365

## Solar Cells

T. K. Van, L. Q. Pham, D. Y. Kim, J. Y. Zheng, D. Kim, A. U. Pawar, Y. S. Kang\*

Formation of a CdO Layer on CdS/ZnO Nanorod Arrays to Enhance their Photoelectrochemical Performance

**High-performance photoelectrode:** We describe a facile strategy for the preparation a CdO layer onto the CdS/ZnO nanorod array system, which is significantly beneficial to its photoelectrochemical performance. The unique structure and physiochemical properties of the formed CdO layer in this approach retard the photogenerated charge carrier recombination and photocorrosion of the CdS/ZnO electrode.



ChemCatChem

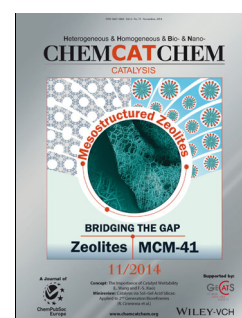
DOI: 10.1002/cctc.201402515

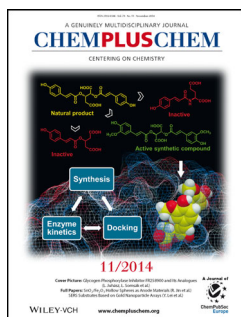
## Photocatalysis

J. Bonin,\* M. Chaussemier, M. Robert,\* M. Routier

Homogeneous Photocatalytic Reduction of CO<sub>2</sub> to CO Using Iron(0) Porphyrin Catalysts: Mechanism and Intrinsic Limitations

**Catch CO<sub>2</sub> if you can:** A photochemical catalytic reduction of CO<sub>2</sub> has been performed with iron(0) porphyrins as homogeneous catalysts under visible light irradiation, which gives CO as the main reduction product. A reduction mechanism is proposed with regards to the structure of the porphyrin.



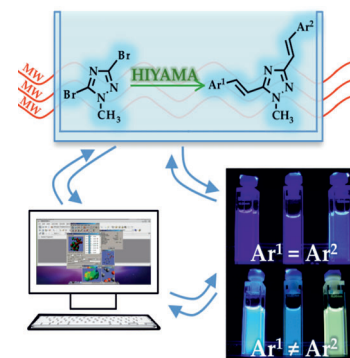


## Triazoles

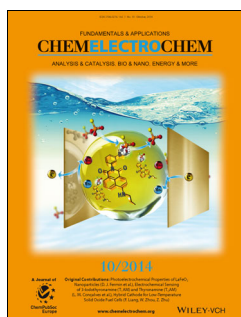
C. Cebrián,\* J. de Mata Muñoz, C. A. Strassert, P. Prieto, Á. Díaz-Ortiz,\* L. De Cola, A. de la Hoz

Synthesis of Bright Alkenyl-1*H*-1,2,4-triazoles: A Theoretical and Photophysical Study

**Bright 1*H*-1,2,4-triazoles:** A series of alkenyl-1*H*-1,2,4-triazoles has been synthesized by the eco-friendly Hiyama coupling under microwave irradiation (see figure). The compounds are good blue emitters, with their photophysical properties dependent on the substituent pattern. The emission was modeled computationally, which resulted in a predictive method that could be used for the a priori evaluation of the emissive properties from new related compounds.



ChemPlusChem  
DOI: 10.1002/cplu.201402153

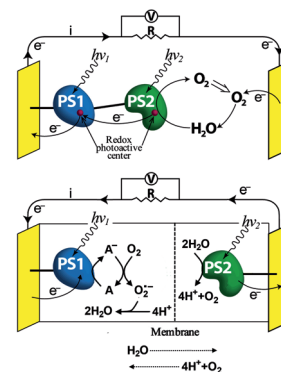


## Photo-bioelectrochemical Cells

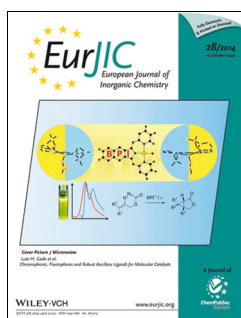
R. Tel-Vered, I. Willner\*

Photo-bioelectrochemical Cells for Energy Conversion, Sensing, and Optoelectronic Applications

**Power up!** Native photosystems I and II (PSI and PSII) act as functional nanostructures for the assembly of photo-biofuel cells. Electrical wiring of PSI and/or PSII with electrodes permits the conversion of light energy into electrical power, and photonic wiring of photosensitizer-functionalized enzymes associated with electrodes allows the assembly of photo-bioelectrochemical cells by mimicking photosynthesis.



ChemElectroChem  
DOI: 10.1002/celc.201402133

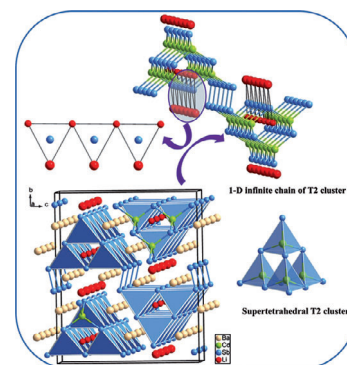


## Solid-State Structures

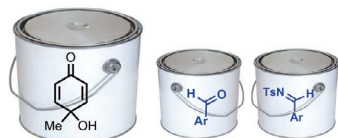
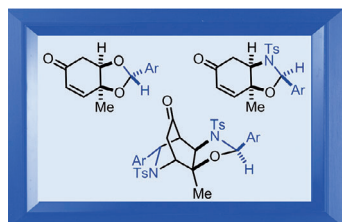
J. P. A. Makongo, T.-S. You, H. He, N.-T. Suen, S. Bobev\*

New Lithium-Containing Pnictides with 1-D Infinite Chains of Supertetrahedral Clusters: Synthesis, Crystal and Electronic Structure of Ba<sub>4</sub>Li<sub>2</sub>Cd<sub>3</sub>Pn<sub>6</sub> (Pn = P, As and Sb)

Three new Zintl phases have been synthesized for the first time, and their crystal structures have been established by single-crystal X-ray diffraction. They crystallize with their own-structure type in the orthorhombic space group *Cmcm* (Pearson code *oC60*) and their crystal structure is based on one-dimensional infinite chains of supertetrahedral clusters, [Cd<sub>4</sub>Pn<sub>10</sub>].



Eur. J. Inorg. Chem.  
DOI: 10.1002/ejic.201402434



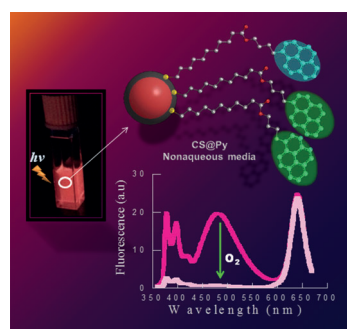
*Eur. J. Org. Chem.*  
DOI: 10.1002/ejoc.201403114

## Quinones

C. García-García, M. C. Redondo, M. Ribagorda,\* M. C. Carreño\*

Reactions of *p*-Quinols with Aldehydes and Imines: Stereoselective Access to Polyheterobicyclic and Tricyclic Systems

Base-promoted reactions of *p*-quinols with aldehydes or sulfonyl imines enable direct access to dihydrobenzo[*d*][1,3]dioxolone or tetrahydrobenzo[*d*]oxazolone skeletons. A stereoselective synthesis of tricyclic systems was achieved by using sulfonyl imine and DABCO/LiClO<sub>4</sub> in THF through a domino sequence of 1,2-addition, intramolecular aza-Michael and aza-Diels–Alder reactions.



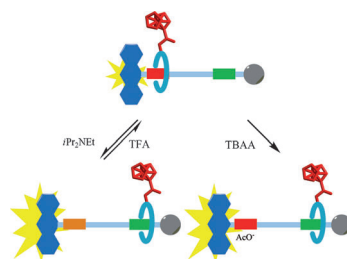
*ChemistryOpen*  
DOI: 10.1002/open.201402021

## Molecular Sensors

S. González-Carrero, M. de la Guardia, R. E. Galian,\* J. Pérez-Prieto\*

Pyrene-Capped CdSe@ZnS Nanoparticles as Sensitive Flexible Oxygen Sensors in Non-Aqueous Media

**Sensing O<sub>2</sub>:** A flexible, highly sensitive oxygen sensor based on CdSe/ZnS nanoparticles decorated with pyrene units is designed. Monitoring of dissolved O<sub>2</sub> can be performed in seven different solvents and is ratiometric due to the linear response of the pyrene excimer lifetime combined with that of the nanoparticle excited state lifetime.



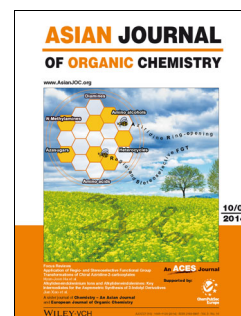
*Asian J. Org. Chem.*  
DOI: 10.1002/ajoc.201402155

## Molecular Shuttles

L. Liu, Q. Wang, M. Cheng, X.-Y. Hu, J. Jiang,\* L. Wang\*

A Ferrocene-Functionalized Bistable [2]Rotaxane with Switchable Fluorescence

**Stop in the name of love:** An acid/base and anion-based bistable molecular shuttle with an anthracene stopper on the thread and one ferrocenyl unit (Fc) on the macrocycle has been obtained, and by external stimuli, two different states could be easily and reversibly controlled, which were accompanied with the switchable fluorescence changes due to the PET effect between the Fc electron donor moiety and anthracene stopper.



*ChemViews magazine*  
DOI: 10.1002/chemv.201400092

## Arenes

Saskia Neubacher and David Peralta

Benefits of Transition-Metal-Free Reactions

In “Behind the Science”, *ChemViews Magazine* gives readers a peek behind the scenes of a research article. This time, Saskia Neubacher and David Peralta, Editors for *ChemistryOpen*, talk to Professor Berit Olofsson about her article on metal-free arylations. It introduces an easy way of synthesizing alkyl aryl ethers without transition metals, high temperatures, or toxic reagents - especially important for the pharmaceutical industry.

