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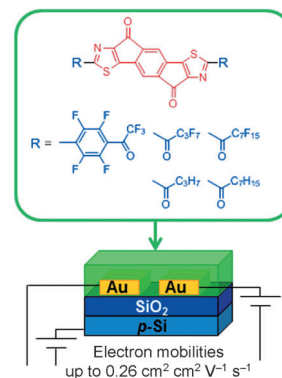


### Semiconductors

Y. Ie,\* C. Sato, M. Nitani, H. Tada, Y. Aso\*

Synthesis, Properties, and n-Type Transistor Characteristics of  $\pi$ -Conjugated Compounds Having a Carbonyl-Bridged Thiazole-Fused Polycyclic System

**Semiconducting Materials:** Electron-transporting  $\pi$ -conjugated compounds containing 4,9-dihydro-s-indaceno[2,1-d:6,5-d']dithiazole-4,9-dione were synthesized as candidates for organic semiconducting materials (see figure). Their properties were investigated by photo-physical and electrochemical measurements. Field-effect transistor devices based on these compounds showed good n-type performance. The influence of chemical structures on device performance was investigated by X-ray diffraction and atomic force microscopy.



Chem. Eur. J.  
DOI: 10.1002/chem.201404255

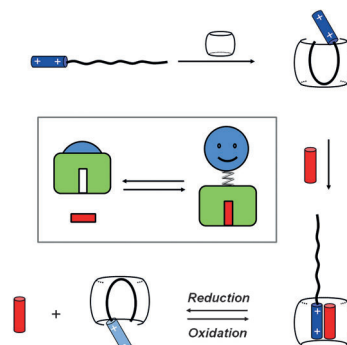


### Host–Guest Systems

Y. H. Ko, I. Hwang, H. Kim, Y. Kim, K. Kim\*

Molecular Pop-up Toy: A Molecular Machine Based on Folding/Unfolding Motion of Alkyl Chains Bound to a Host

**Alkyl chains in action!** A new type of redox-driven molecular machine based on the reversible interconversion between a folded and an extended conformation of an alkyl chain has been designed and synthesized.



Chem. Asian J.  
DOI: 10.1002/asia.201402988

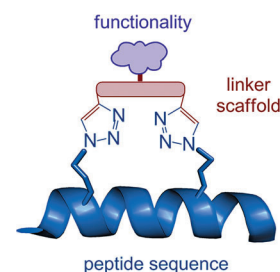


### Stapled Peptides

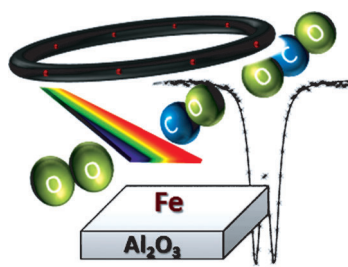
Y. H. Lau, P. de Andrade, G. J. McKenzie, A. R. Venkitaraman, D. R. Spring\*

Linear Aliphatic Dialkynes as Alternative Linkers for Double-Click Stapling of p53-Derived Peptides

**New scaffolds for stapling:** A comparison of linear aliphatic dialkynes with aromatic dialkynes for the double-click stapling of p53 peptides demonstrates that the linker scaffold, along with the peptide sequence and staple functionality, can influence the biological activity of stapled peptides in a cellular context.



ChemBioChem  
DOI: 10.1002/cbic.201402374



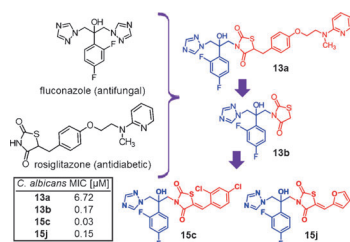
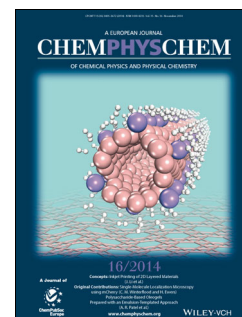
ChemPhysChem

DOI: 10.1002/cphc.201402551

## Catalysis

R. Schoch, H. Huang, V. Schünemann, M. Bauer\*

A New Iron-Based Carbon Monoxide Oxidation Catalyst:  
Structure–Activity Correlation

**Ironing out the catalysts:** A new CO oxidation catalyst prepared by using a metal–organic precursor exhibits high catalytic activity. Application of a multidimensional spectroscopic approach allows specific structural features to be correlated with catalytic activity (see picture).


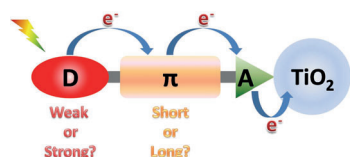
ChemMedChem

DOI: 10.1002/cmdc.201402320

## Antifungal Agents

S. Wu, Y. Zhang, X. He, X. Che, S. Wang, Y. Liu, Y. Jiang, N. Liu, G. Dong, J. Yao, Z. Miao, Y. Wang, W. Zhang,\* C. Sheng\*

From Antidiabetic to Antifungal: Discovery of Highly Potent  
Triazole–Thiazolidinedione Hybrids as Novel Antifungal Agents

**The best of both worlds:** From antidiabetic to antifungal, molecular hybridization of fluconazole and rosiglitazone afforded a series of triazole–thiazolidinedione derivatives. Compounds **15** and **15j** showed excellent activity against *Candida albicans* in the double- to triple-digit nanomolar range, paving the way for the next generation of antifungal agents.


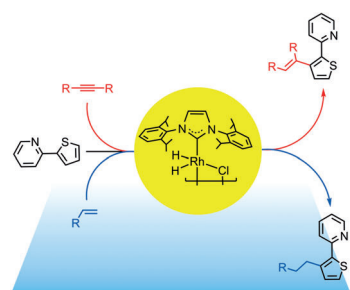
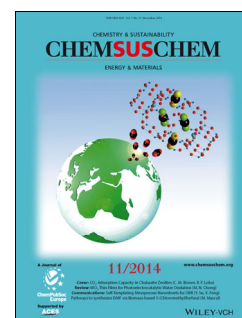
ChemSusChem

DOI: 10.1002/cssc.201402651

## Solar Cells

H. Li, T. M. Koh, Y. Hao, F. Zhou, Y. Abe, H. Su, A. Hagfeldt, A. C. Grimsdale\*

Comparative Studies on Rigid  $\pi$  Linker-Based Organic Dyes:  
Structure–Property Relationships and Photovoltaic Performance

**Sensitive solar cells:** A series of six structurally correlated donor– $\pi$  bridge–acceptor organic dyes are designed, synthesized, and applied as sensitizers in dye-sensitized solar cells. Using the most widely studied donor (triarylamine) and cyclopenta[1,2-b:5,4-b']dithiophene or cyclopenta[1,2-b:5,4-b']dithiophene[2',1':4,5]thieno[2,3-d]thiophene as  $\pi$  spacers, their structure–property relationships are investigated in depth by photophysical techniques and theoretical calculations.


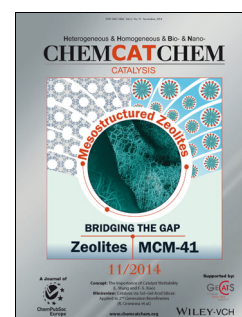
ChemCatChem

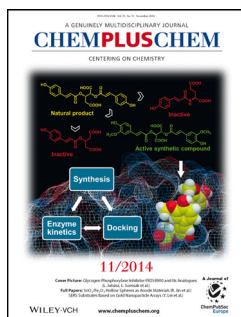
DOI: 10.1002/cctc.201402507

## Selective Functionalization

L. Rubio-Pérez, M. Iglesias,\* R. Castarlenas, V. Polo, J. J. Pérez-Torrente, L. A. Oro\*

Selective C–H Bond Functionalization of 2-(2-Thienyl)-  
pyridine by a Rhodium N-Heterocyclic Carbene Catalyst

**For your C–H bond only:**  $[\text{Rh}(\mu\text{-Cl})(\text{H})_2(\text{IPr})_2]$  (IPr = 1,3-bis-(2,6-diisopropylphenyl)imidazol-2-ylidene) catalyzes the selective functionalization of 2-(2-thienyl)pyridine efficiently with a range of alkenes and internal alkynes. A catalytic cycle is proposed on the basis of the identification of key reaction intermediates and the study of their reactivity by NMR spectroscopy.


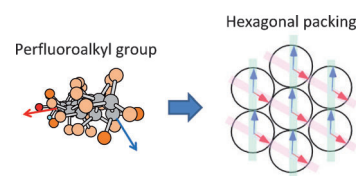


### Perfluoroalkyl Compounds

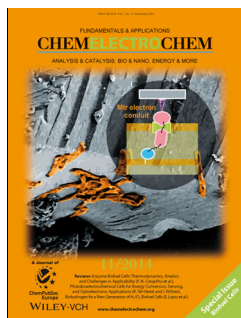
T. Hasegawa,\* T. Shimoaka, N. Shioya, K. Morita, M. Sonoyama, T. Takagi, T. Kanamori

Stratified Dipole-Arrays Model Accounting for Bulk Properties Specific to Perfluoroalkyl Compounds

**Chain effects:** A perfluoroalkyl ( $R_F$ ) group with  $(CF_2)_9$  or longer spontaneously aggregates in a hexagonal manner through the stratified dipole-arrays aggregation mechanism, which explains  $R_F$ -specific bulk properties (see picture).



ChemPlusChem  
DOI: 10.1002/cplu.201402156

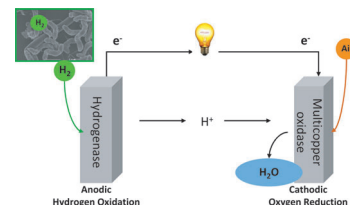


### Biofuel Cells

A. de Poulpique, D. Ranava, K. Monsalve, M.-T. Giudici-Ortoni, E. Lojou\*

Biohydrogen for a New Generation of  $H_2/O_2$  Biofuel Cells: A Sustainable Energy Perspective

**Enzymes deliver:**  $H_2/O_2$  biofuel cells based on hydrogenase and multicopper oxidase as biocatalysts are emergent and promising sustainable electricity delivering devices. Here, the latest developments in this important field are examined and evaluated.



ChemElectroChem  
DOI: 10.1002/celec.201402249

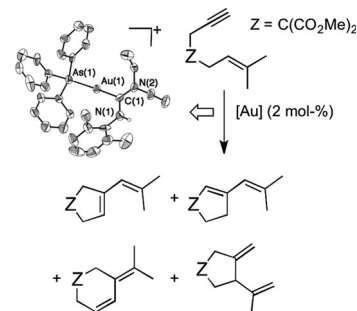


### Gold Catalysis

Z. Ramiro, C. Bartolomé, P. Espinet\*

Protection of the Gold(I) Catalyst by  $AsPh_3$  in Reactions of Enynes

The decomposition of cationic gold catalysts  $[AuL]^+Y^-$ , generated in situ from  $[AuClL]$  and  $AgY$ , can be prevented with  $AsPh_3$ , either as a sub-stoichiometric additive or in the form of the isolable  $[AuL(AsPh_3)]^+Y^-$ . The reaction rates become slower, but fairly fast conversions are still achieved in most cases. The catalyst loading can also be considerably reduced.



Eur. J. Inorg. Chem.  
DOI: 10.1002/ejic.201402744

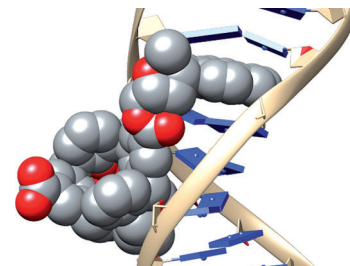


### DNA Intercalators

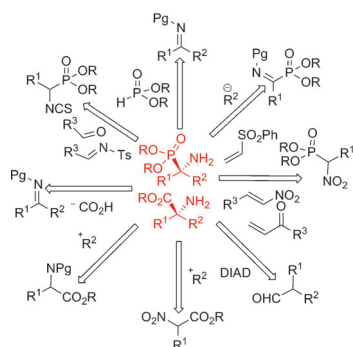
A. Rescifina,\* C. Zagni, P. G. Mineo, S. V. Giofrè, U. Chiacchio, S. Tommasone, C. Talotta, C. Gaeta, P. Neri\*

DNA Recognition with Polycyclic-Aromatic-Hydrocarbon-Presenting Calixarene Conjugates

We have synthesized polycyclic-aromatic-hydrocarbon-presenting (PAH-presenting) calix[4]arene conjugates with pyrenylisoxazolidine moieties linked to the calix[4]arene *exo* rim as DNA-intercalating agents. The most potent one showed an  $IC_{50}$  of 95 nM for FTC133 cells; circular dichroism and docking studies suggest that it acts as a monointercalator that penetrates from the minor groove.



Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.201403050



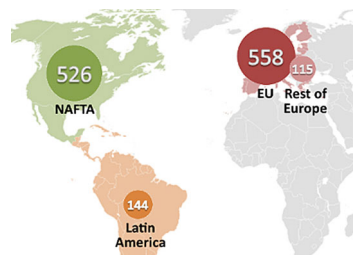
*Asian J. Org. Chem.*  
DOI: 10.1002/ajoc.201402178

## Asymmetric Synthesis

K. Bera, I. N. N. Namboothiri\*

### Asymmetric Synthesis of Quaternary $\alpha$ -Amino Acids and Their Phosphonate Analogues

**Building the building blocks:** This review focuses on various recent approaches to the asymmetric synthesis of quaternary  $\alpha$ -amino acids and their transition-state analogues, and quaternary  $\alpha$ -aminophosphonic acids. The enantio- and diastereoselectivities of these approaches are emphasized, as are the syntheses of intermediates in the preparation of natural products and other bioactive compounds. Pg = protecting group.



*ChemViews magazine*  
DOI: 10.1002/chemv.201400116

## Chemical Industry

### International Chemical Trade

Emerging markets show a marked increase in sales and investments in the chemical industry and have taken over the top rankings from the European Union. *ChemViews Magazine* gives a graphical overview of trends in the chemical trade.

