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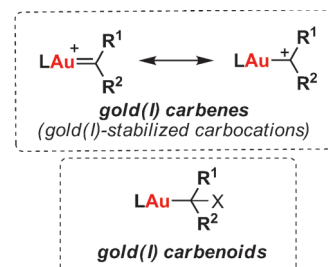


### Gold Chemistry

Y. Wang, M. E. Muratore, A. M. Echavarren\*

Gold Carbene or Carbenoid: Is There a Difference?

**Carbene or carbenoid that is the question?** The term *gold carbene* to describe gold carbene-like intermediates, regardless of which of the carbene or carbocation extreme resonance dominates.



Chem. Eur. J.  
DOI: 10.1002/chem.201406318

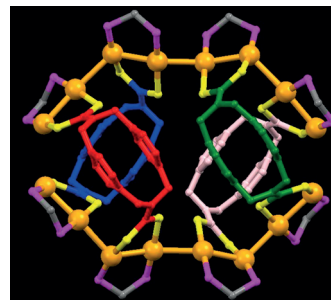


### Macrocycles

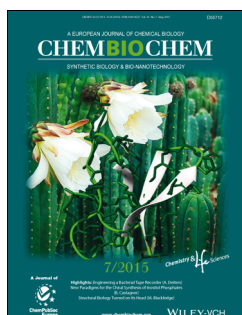
Y.-Q. Wang, X.-F. Jiang,\* H. Li, S.-Y. Yu\*

Self-Assembly of a Au<sub>16</sub> Ring via Metal–Metal Bonding Interactions

**Gold ring:** A novel metallo-macrocycle composed of 16 gold(I) atoms self-assembled via strong Au<sup>I</sup>...Au<sup>I</sup> bonding interactions in the solid state and exhibited yellow phosphorescence.



Chem. Asian J.  
DOI: 10.1002/asia.201403448

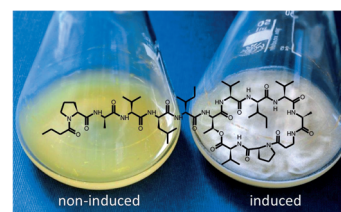


### Natural Products

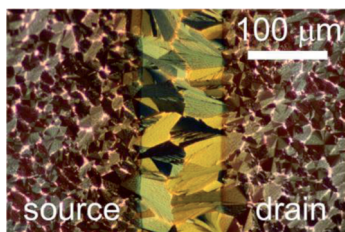
E. Bode, A. O. Brachmann, C. Kegler, R. Simsek, C. Dauth, Q. Zhou, M. Kaiser, P. Klemmt, H. B. Bode\*

Simple “On-Demand” Production of Bioactive Natural Products

**Sweet induction:** The promoters of several gene clusters involved in natural product biosynthesis were exchanged to the arabinose-inducible *P<sub>BAD</sub>* promoter in entomopathogenic bacteria to result in “knock-out” (without inducer) or tenfold overproduction (with the arabinose inducer), as shown for xenoamicin A (white crystals) and other compounds.



ChemBioChem  
DOI: 10.1002/cbic.201500094

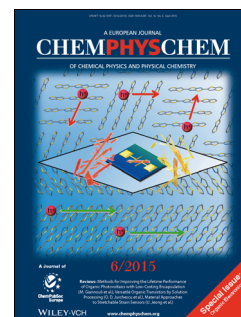


## Organic Electronics

C.-H. Kim,\* H. Hlaing, M. M. Payne, S. R. Parkin, J. E. Anthony, I. Kyriassis\*

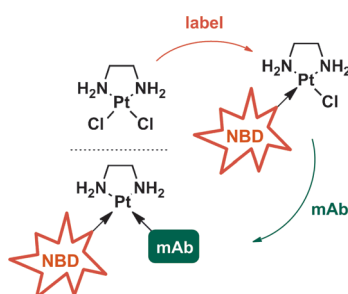
Difluorinated 6,13-Bis(triisopropylsilyl)ethynyl)pentacene: Synthesis, Crystallinity, and Charge-Transport Properties

**Crystal clear:** Fluorination of 6,13-bis(triisopropylsilyl)ethynyl)pentacene leads to a stable organic semiconducting material. Field-effect transistors are fabricated by solution-phase deposition, and the hole-transporting channels show contact-induced self-assembly with highly ordered edge-on crystallites. The analysis of a transfer characteristic reveals nonidealities related to the gate-bias-dependent mobility and the contact resistance.



ChemPhysChem

DOI: 10.1002/cphc.201402750



## Antibody–Drug Conjugates

D. C. J. Waalboer,\* J. A. Muns, N. J. Sijbrandi, R. B. M. Schasfoort, R. Haselberg, G. W. Somsen, H.-J. Houthoff, G. A. M. S. van Dongen

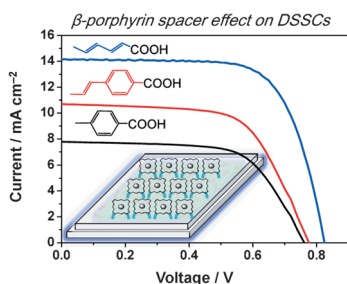
Platinum(II) as Bifunctional Linker in Antibody–Drug Conjugate Formation: Coupling of a 4-Nitrobenzo-2-oxa-1,3-diazole Fluorophore to Trastuzumab as a Model

**The missing link:** [Pt(en)Cl<sub>2</sub>] was successfully used as a bifunctional linker in the conjugation of a variety of functionalized 4-nitrobenzo-2-oxa-1,3-diazole fluorophores to the model monoclonal antibody trastuzumab. The effect of ligand type, salt, and excipients on conjugation efficiency was explored. Conjugation was shown not to change the affinity of trastuzumab for its cognate antigen, Her2.



ChemMedChem

DOI: 10.1002/cmdc.201402496



## Solar Cells

M. Ishida, D. Hwang, Z. Zhang, Y. J. Choi, J. Oh, V. M. Lynch, D. Y. Kim, J. L. Sessler,\* D. Kim\*

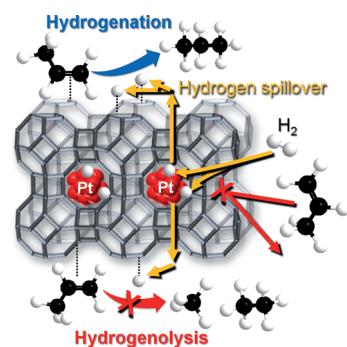
β-Functionalized Push–Pull Porphyrin Sensitizers in Dye-Sensitized Solar Cells: Effect of π-Conjugated Spacers

**Pushing through it:** A series of new β-functionalized push–pull-structured porphyrin dyes are synthesized. Together, these dyes allow the effect of the π-conjugated spacer on the performance of dye-sensitized solar cells (DSSCs) to be assessed. The highest conversion efficiency in the present study (8.2%) is achieved by using a doubly β-buta-diene-linked porphyrin as the sensitizer with a cobalt-based redox shuttle as the mediator.



ChemSusChem

DOI: 10.1002/cssc.201500085

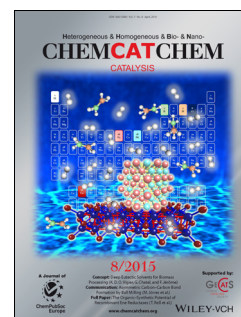


## Encapsulated Metal Catalysts

M. Choi,\* S. Yook, H. Kim

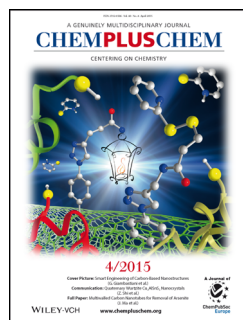
Hydrogen Spillover in Encapsulated Metal Catalysts: New Opportunities for Designing Advanced Hydroprocessing Catalysts

**Hydrogen Spillover:** Encapsulated metal catalysts not only provide ideal model systems for studying fundamental aspects of hydrogen spillover, but also can be used for designing advanced hydroprocessing catalysts with enhanced activity, distinct chemoselectivity, and improved catalyst durability.



ChemCatChem

DOI: 10.1002/cctc.201500032

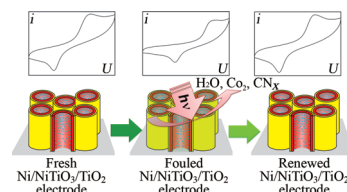


### Non-enzymatic Glucose Biosensor

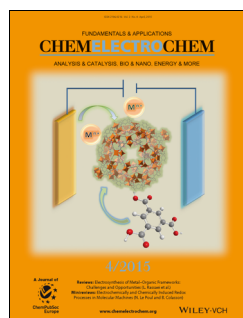
K. Huo,\* Y. Li, R. Chen, B. Gao, C. Peng, W. Zhang,\* L. Hu, X. Zhang, P. K. Chu\*

Recyclable Non-Enzymatic Glucose Sensor Based on Ni/NiTiO<sub>3</sub>/TiO<sub>2</sub> Nanotube Arrays

**Easy-to-clean sensor:** A non-enzymatic glucose biosensor based on Ni/NiTiO<sub>3</sub>/TiO<sub>2</sub> nanotube arrays shows high sensitivity and selectivity for glucose detection. Owing to its high photocatalytic activity, the sensor can be readily renewed to maintain the high sensitivity and reproducibility by light irradiation.



ChemPlusChem  
DOI: 10.1002/cplu.201402288

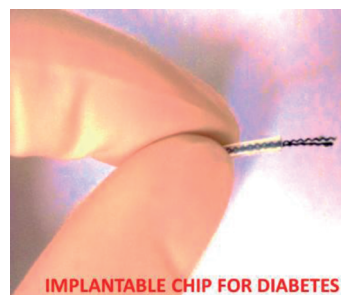


### Biosensors

R. M. Iost, F. C. P. F. Sales, M. V. A. Martins, M. C. Almeida, F. N. Crespiho\*

Glucose Biochip Based on Flexible Carbon Fiber Electrodes: In Vivo Diabetes Evaluation in Rats

**Live tracking:** An implantable biochip based on flexible carbon fiber electrodes is developed and implanted inside of the rat vein for in vivo glucose monitoring. The biochip distinguishes different concentration of glucose in the blood, a promising result for the next generation of bioelectronics devices applied the in diagnosis of diabetes.



ChemElectroChem  
DOI: 10.1002/celc.201402339

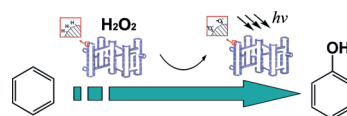


### Photoactive Porous Silicon

J.-F. Wang, J.-S. Chen, Z.-F. Zhou\*

Preparation of Porous Silicon by Sodiothermic Reduction of Zeolite and Photoactivation for Benzene Oxidation

Porous silicon with its high specific surface, prepared by a sodiothermic reduction method using zeolite ZSM-5 as the silicon precursor, has been used as an efficient photoactivator for direct oxidation of benzene to yield phenol in H<sub>2</sub>O<sub>2</sub> solution under visible light irradiation.



Eur. J. Inorg. Chem.  
DOI: 10.1002/ejic.201403033

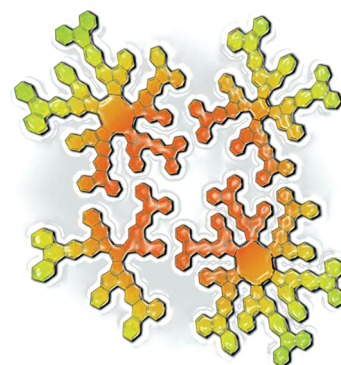


### Single-Walled Carbon Nanotubes

A. Mueller, K. Yu. Amsharov\*

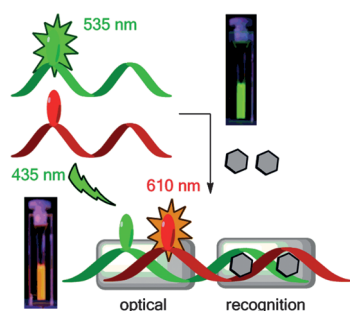
Synthesis of Robust Precursors for the Controlled Fabrication of (6,6), (8,8), (10,10), and (12,12) Armchair Single-Walled Carbon Nanotubes

We report four robust precursors for the rational synthesis of isomerically pure armchair single-walled carbon nanotubes (SWCNTs). The precursor structures are specially "programmed" for fabrication of ultrashort (6,6), (8,8), (10,10), and (12,12) singly capped nanotubes bearing three CNT segments, effective seeds for controlled growth of helicity-pure SWCNTs by metal-catalyzed epitaxial elongation.



Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.201500266





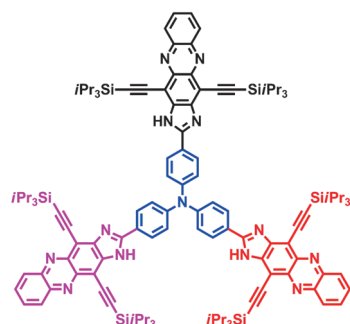
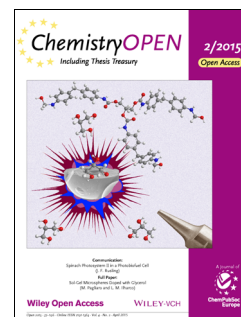
ChemistryOpen  
DOI: 10.1002/open.201402137

## Fluorescent Sensors

H.-K. Walter, P. R. Bohländer, H.-A. Wagenknecht\*

Development of a Wavelength-Shifting Fluorescent Module for the Adenosine Aptamer Using Photostable Cyanine Dyes

**Split and recombine:** A DNA-based aptasensor for adenosine is described. The optical module is attached to the left side of the recognition module and combines a green emitting dye as an energy donor and a red emitting dye as an energy acceptor to allow fluorescent color readout of adenosine binding.



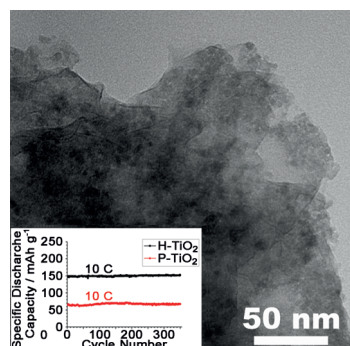
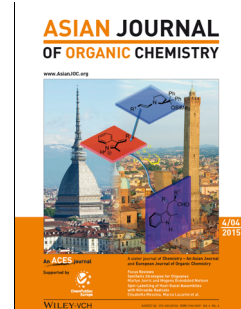
Asian J. Org. Chem.  
DOI: 10.1002/ajoc.201500087

## Organic Electronics

C. Wang, M. Yamashita, B. Hu, Y. Zhou, J. Wang, J. Wu, F. Huo, P. S. Lee, N. Aratani, H. Yamada, Q. Zhang\*

Synthesis, Characterization, and Memory Performance of Two Phenazine/Triphenylamine-Based Organic Small Molecules through Donor-Acceptor Design

**Test your memory:** Two organic small molecules **TPA-2BIPs** and **TPA-3BIPs** have been synthesized and characterized. Sandwich-structure memory devices made from these molecules show that the two materials have similar switching behavior but different ON/OFF ratios. AFM images analysis and molecular simulation indicate that increasing the numbers of acceptors change the stacking of molecules in the solid state, but have less effect on switching behaviors of as-prepared memory devices.



ChemNanoMat  
DOI: 10.1002/cnma.201500002

## Lithium Ion Batteries

B. Wang,\* Y. Bai, Z. Xing, D. Hulicova-Jurcakova, L. Wang\*

Enhanced Performance of a Pillared TiO<sub>2</sub> Nanohybrid as an Anode Material for Fast and Reversible Lithium Storage

**An anatase TiO<sub>2</sub> nanohybrid** material with a pillared nanostructure is synthesized via an exfoliation/reassembly process as an anode material for lithium-ion batteries, delivering the highest initial specific discharge capacity of 349 mAh g<sup>-1</sup> at 0.2 C, excellent cycling stability for 150 cycles and outstanding high-rate performance at 1, 5 and 10 C with the capacity retention of 92.4, 91.8, and 89.4% after 350 cycles.



ChemViews magazine  
DOI: 10.1002/chemv.201500027

## Quiz

The Art of Chemistry

This year marks the 20th anniversary of *Chemistry – A European Journal*. As part of the celebrations, the journal's editors invite you to enter a weekly quiz with questions based on one of the fabulous pieces of cover art of the past twenty years.

