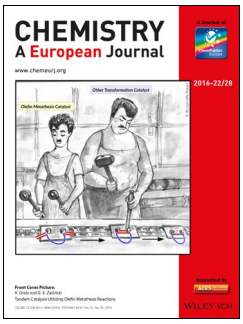
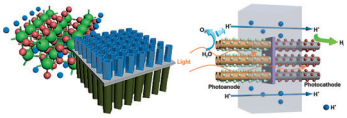
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.



Artificial Photosynthesis



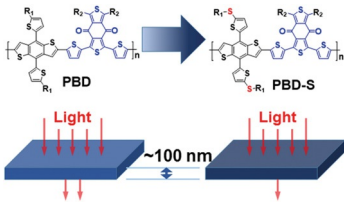
H. Zhou,* R. Yan, D. Zhang, T. Fan*

Challenges and Perspectives in Designing Artificial Photosynthetic Systems

Let's learn from nature: The development of artificial photosynthetic systems for water splitting and CO_2 reduction on a large scale for practical applications is the ultimate goal towards a sustainable world. This Concept highlights the state-of-the-art research trends of artificial-photosynthesis concepts and designs from some new perspectives.

Chem. Eur. J.
DOI: **10.1002/chem.201600289**

Polymer Solar Cells

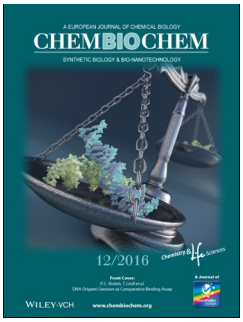


Q. Wang, S. Zhang, B. Xu,* L. Ye, H. Yao, Y. Cui, H. Zhang, W. Yuan,* J. Hou*

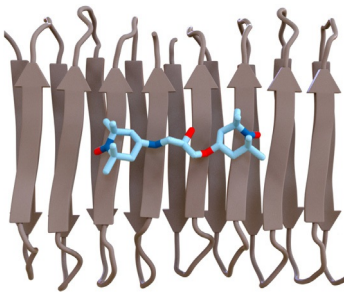
Effectively Improving Extinction Coefficient of Benzodithiophene and Benzodithiophenedione-based Photovoltaic Polymer by Grafting Alkylthio Functional Groups

What a difference an S makes: Alkylthio substitution on the conjugated thiophene side chains in benzodithiophene (BDT) and benzodithiophenedione (BDD)-based photovoltaic polymer can effectively improve the extinction coefficient. The higher extinction coefficient of PBD-S results in higher external quantum efficiencies (EQE) and power conversion efficiency (PCE) in its corresponding polymer solar cells.

Chem. Asian J.
DOI: **10.1002/asia.201501387**



Amyloid Structures

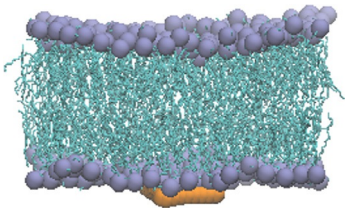


M. Nagaraj, T. W. Franks, S. Saeidpour, T. Schubeis, H. Oschkinat, C. Ritter, B.-J. van Rossum*

Surface Binding of TOTAPOL Assists Structural Investigations of Amyloid Fibrils by Dynamic Nuclear Polarization NMR Spectroscopy

Structural biology of functional amyloid fibrils: DNP NMR has been used to study the binding of TOTAPOL biradical to amyloid fibrils. TOTAPOL was found to have a high binding affinity to the amyloid surface, similar to that of the fluorescent dye thioflavin-T (ThT). Most amyloids bind ThT, so our findings might be applicable to other fibrillar systems.

ChemBioChem
DOI: **10.1002/cbic.201600185**



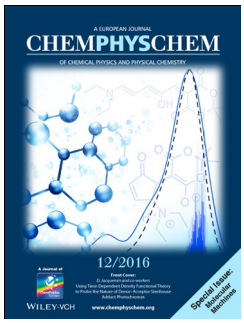
ChemPhysChem
DOI: **10.1002/cphc.201600165**

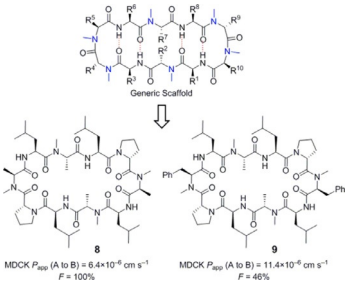
Molecular Dynamics Simulations

T. A. Hilder,* N. Gaston

Interaction of Boron Nitride Nanosheets with Model Cell Membranes

Spontaneous attraction: Boron nitride nanosheets (in orange) are spontaneously attracted to the surface of a model cell membrane. They do not pierce the membrane during unbiased molecular dynamics simulations.





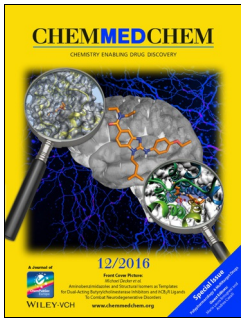
ChemMedChem
DOI: **10.1002/cmdc.201600082**

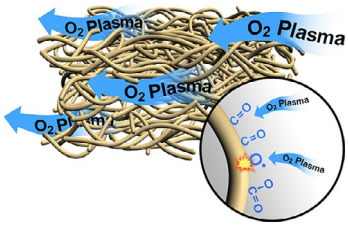
Drug Delivery

M. Fouché,* M. Schäfer, J. Berghausen, S. Desrayaud, M. Blatter, P. Piéchon, I. Dix, A. Martin Garcia, H.-J. Roth

Design and Development of a Cyclic Decapeptide Scaffold with Suitable Properties for Bioavailability and Oral Exposure

Status: available! A generic decapeptide scaffold designed to exhibit good properties for permeability and oral exposure is reported. Cyclic peptides are shown to display a conformation that is ideal for cell permeation if coupled to the right NMe amide pattern. According to NMR spectroscopy, compound **8**, which displays excellent bioavailability, shows surprisingly higher conformational flexibility in apolar solvents than in polar solvents, indicative of an entropic contribution to permeability.





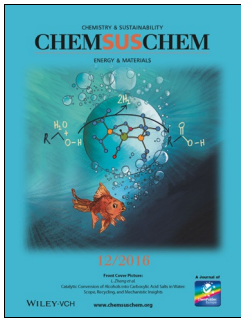
ChemSusChem
DOI: **10.1002/cssc.201600198**

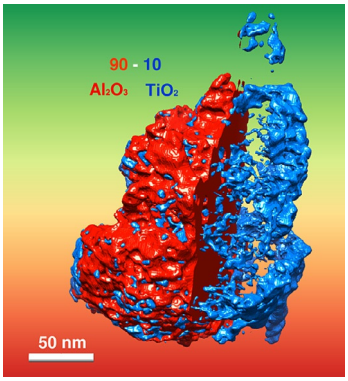
Batteries

L. Estevez, D. Reed, Z. Nie, A. M. Schwarz, M. I. Nandasiri, J. P. Kizewski, W. Wang, E. Thomsen, J. Liu, J.-G. Zhang, V. Sprenkle, B. Li*

Tunable Oxygen Functional Groups as Electrocatalysts on Graphite Felt Surfaces for All-Vanadium Flow Batteries

Tunable batteries: A dual oxidative approach using O_2 plasma followed by treatment with H_2O_2 was used to tailor the amount and type of oxygen functional groups on the surface of a graphite felt electrode. It was found that O–C=O groups improve the cells performance whereas the C–O and C=O groups degrade it. The reason for the increased performance was found to be a reduction in the cell overpotential after functionalization of the graphite felt electrode.





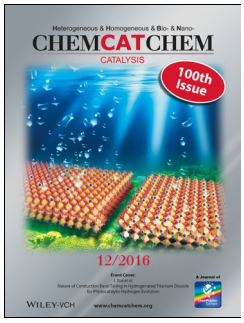
ChemCatChem
DOI: **10.1002/cctc.201600033**

Characterization

L. Roiban,* L. Sorbier, C. Hirlimann, O. Ersen

3 D Chemical Distribution of Titania–Alumina Catalyst Supports Prepared by the Swing-pH Method

Let's go for a swing! A series of titania–alumina catalyst supports are prepared by using the swing-pH method. The supports are analyzed by analytical electron tomography combined with X-ray fluorescence and X-ray photoelectron spectroscopy. The formation of fine aggregates and surface enrichment can be revealed by this technique, which may help to design new catalyst supports to fulfill the challenge of cleaner and more efficient refining processes.

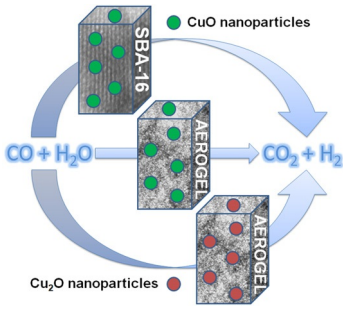


Water Gas Shift Reaction

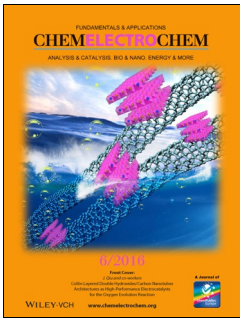
C. Marras, D. Loche, D. Carta, M. F. Casula, M. Schirru, M. G. Cutrufello,* A. Corrias*

Copper-Based Catalysts Supported on Highly Porous Silica for the Water Gas Shift Reaction

Don't gather round! Successful strategies for the design of nanocomposite catalysts for the water gas shift reaction rely on the preparation of copper-based nanoparticles finely dispersed in highly porous silica matrices (see figure). Different catalytic performances are explained on the basis of different dispersibility and reducibility of copper phases on silica aerogels and templated mesoporous SBA-16 silicas.



ChemPlusChem
DOI: **10.1002/cplu.201500395**

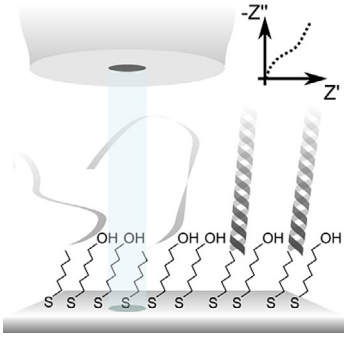


DNA

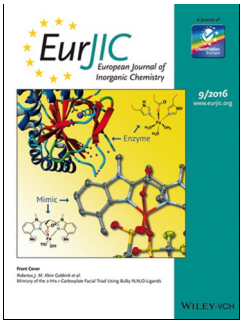
A. Estrada-Vargas, D. Jambrec, Y. U. Kayran, V. Kuznetsov, W. Schuhmann*

Differentiation between Single- and Double-Stranded DNA through Local Capacitance Measurements

Distinguishing features: The determination of local capacitance by using either scanning electrochemical impedance microscopy (SEIM) or alternating-current scanning electrochemical microscopy (AC-SECM) allows areas on a gold electrode modified with single- or double-stranded DNA to be distinguished.



ChemElectroChem
DOI: **10.1002/celc.201600075**

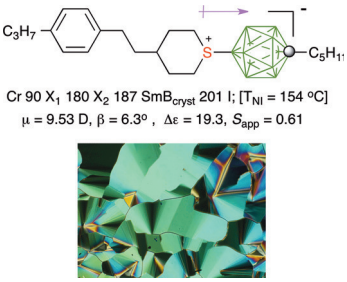


Boron Liquid Crystals

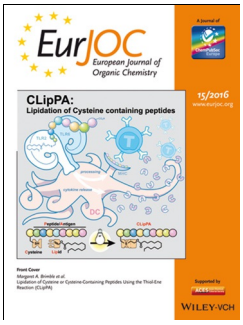
J. Pecyna, R. Żurawiński, P. Kaszyński,* D. Pociecha, P. Zagórski, S. Pakhomov

Polar Liquid Crystals Derived from Sulfonium Zwitterions of the [*closo*-1-$CB_{11}H_{12}$]$^-$ Anion

Zwitterionic derivatives of the [*closo*-1-$CB_{11}H_{12}$]$^-$ anion form liquid-crystalline phases and improve the dielectric properties of nematic liquid-crystal materials.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201600240**

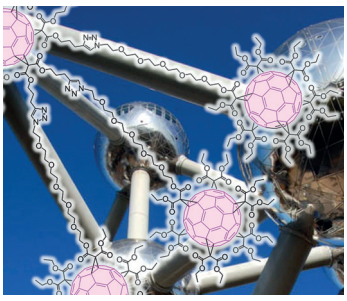


Fullerodendrimers

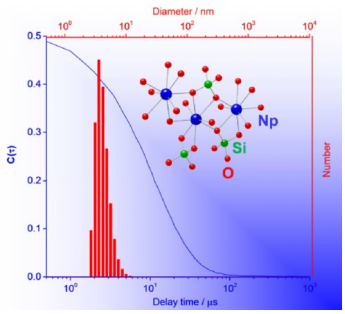
D. Sigwalt, R. Caballero, M. Holler, J.-M. Strub, A. Van Dorsselaer, J.-F. Nierengarten*

Ultra-Fast Dendritic Growth Based on the Grafting of Fullerene Hexa-Adduct Macromonomers onto a Fullerene Core

A fullerene hexa-adduct building block bearing an azide functionality was prepared in six steps, and grafted onto a central fullerene core under copper-catalyzed azide–alkyne cycloaddition conditions. The resulting tridecafullerene derivative is a first generation dendrimer with 132 peripheral ethyl ester groups.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201600439**



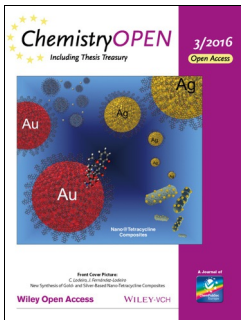
ChemistryOpen
DOI: **10.1002/open.201500207**

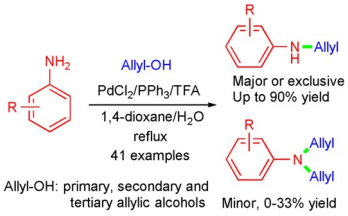
Environmental Chemistry

H. Zänker,* S. Weiss, C. Hennig, V. Brendler, A. Ikeda-Ohno

Oxyhydroxy Silicate Colloids: A New Type of Waterborne Actinide(IV) Colloids

Assessing alternative actinide colloids! At near-neutral and reducing aquatic conditions, the actinides Th, U, Np, and Pu are tetravalent, that is, they are sparingly soluble. Therefore, Actinide(IV) (An^{IV}) are often assumed to be immobile in the environment. However, An^{IV} species could become mobile if they occur as colloids. A new type of An^{IV} colloids, An^{IV} oxyhydroxy silicate colloids of <20 nm which are stable over years, is described.





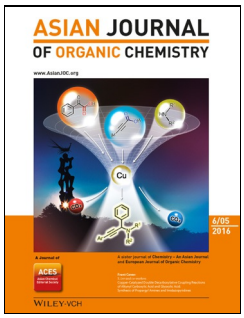
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201600116**

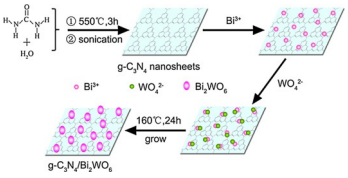
Animation

Z. Du,* Y. Yan, Y. Fu, K. Wang

Palladium-Catalyzed Direct Amination of Allylic Alcohols in Aqueous Media

A'll have some of that: A $PdCl_2$-catalyzed efficient and direct amination of allylic alcohols with aromatic amines to form *N*-allylated amines in moderate to excellent yield in the aqueous phase under mild conditions is developed. It is an economical and environmentally friendly protocol for *N*-allylamine synthesis. The method has a wide substrate scope and broad functional group tolerance.





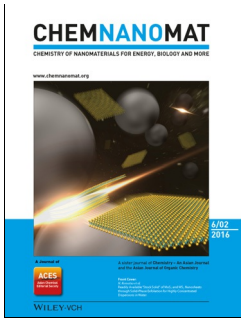
ChemNanoMat
DOI: **10.1002/cnma.201600041**

Photocatalysis

W. Yin, S. Bai, Y. Zhong, Z. Li,* Y. Xie

Direct Generation of Fine Bi_2WO_6 Nanocrystals on g-C_3N_4 Nanosheets for Enhanced Photocatalytic Activity

Graphic C_3N_4 nanosheets coupled with controllable Bi_2WO_6 nanocrystals are directly generated using the nanosheets to adsorb Bi^{3+} ions as widespread nucleation sites for the growth of Bi_2WO_6 nanocrystals. The hybrid nanostructures belong to Type II heterojunctions and show significantly enhanced photocatalytic activity under visible light.



ChemViews magazine
DOI: **10.1002/chemv.201600032**

C. Buse, D. Esposito

Sustainable Chemical Building Blocks from Lignin

In "Behind the Science", *ChemViews Magazine* gives readers a peek behind the scenes of a research article. This time, Cordula Buse, *ChemBioEng Reviews*, talks to Davide Esposito, Max Planck Institute of Colloids and Interfaces, Germany, about his article on the preparation of sustainable chemical building blocks from lignin biomass.