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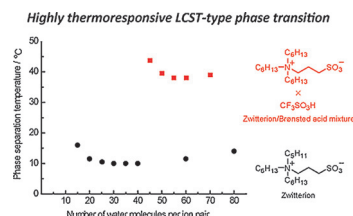


Ionic Liquids

Y. Mieno, Y. Kohno, S. Saita, H. Ohno*

Zwitterion/Brønsted Acid Mixtures Showing Controlled Lower Critical Solution Temperature-Type Phase Changes with Water

Just a phase! Ammonium cation-based zwitterions with adequately designed hydrophobicity were mixed with aqueous Brønsted acid solutions and were shown to reversibly undergo thermoresponsive phase changes between a homogeneous mixture and liquid–liquid phase separation with water by a lower critical solution temperature-type phase transition (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201600973

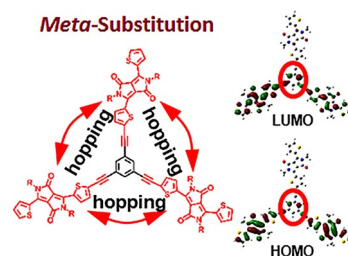


Substituent Effects

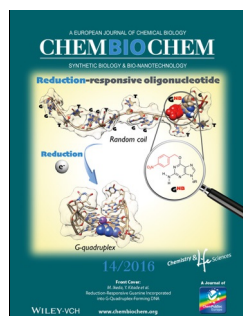
G. He, C. Yu, Y. Li, J. Hu, Z. Liu, D. Zhang, Q. Guo,* A. Xia*

Excitation Energy Transfer in *meta*-Substituted Phenylacetylene Multibranched Chromophores

Branch effects: A comprehensive investigation into the spectral properties and excitation energy transfer in di- or tribranched dithienylidiotopyrrolopyrrole molecules with *meta*-substituted benzene as a central core, by means of steady-state and transient measurements and quantum chemical calculations, is reported (see figure).



Chem. Asian J.
DOI: 10.1002/asia.201600326

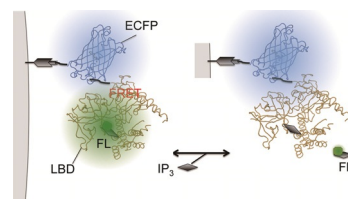


Fluorescent Probes

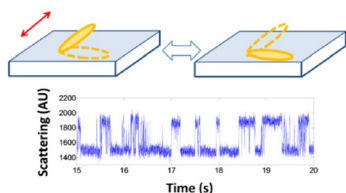
T. Oura, K. Murata, T. Morita, A. Nezu, M. Arisawa, S. Shuto,* A. Tanimura*

Highly Sensitive Measurement of Inositol 1,4,5-Trisphosphate by Using a New Fluorescent Ligand and Ligand Binding Domain Combination

The binding of fluorescent ligand (FL) to a sensor consisting of fluorescent protein (CFP) and the ligand binding domain of the IP₃R (LBD) causes FRET. Excitation of CFP leads to transfer of the excitation energy to FL. IP₃ competes with FL for binding to the LBD, thereby resulting in a decrease in the FRET signal.



ChemBioChem
DOI: 10.1002/cbic.201600096



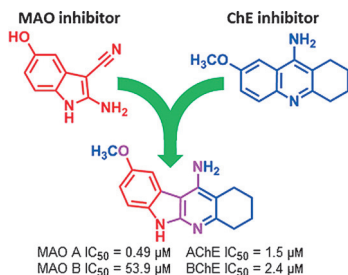
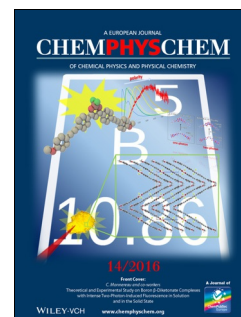
ChemPhysChem
DOI: 10.1002/cphc.201600174

Rotational Motion

B. Neupane, F. Chen, Y. Wei, N. Fang,* F. S. Ligler,* G. Wang*

Nanosecond Time-Resolution Study of Gold Nanorod Rotation at the Liquid–Solid Interface

In a spin: A nanosecond time-resolution study yields new insights into the rotational motion of anchored rod-like nanoparticles at the liquid–solid interface. The continuous rotation observed under low temporal resolution is found to be comprised of numerous fast, intermittent transitions between a limited number of weakly immobilized states.



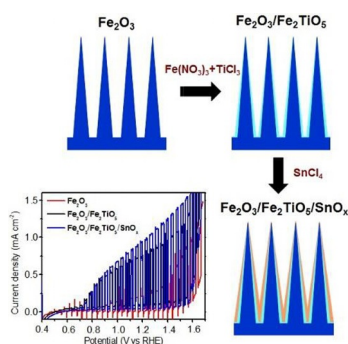
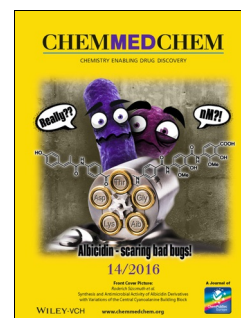
ChemMedChem
DOI: 10.1002/cmdc.201500383

Multitarget Drugs

O. Benek, O. Soukup, M. Pasdiorova, L. Hroch, V. Sepsova, P. Jost, M. Hrabnova, D. Jun, K. Kuca, D. Zala, R. R. Ramsay, J. Marco-Contelles,* K. Musilek*

Design, Synthesis and in vitro Evaluation of Indolotacrine Analogues as Multitarget-Directed Ligands for the Treatment of Alzheimer's Disease

MAO meets ChE! By using a multitarget-directed ligand approach, a series of novel compounds were designed to act simultaneously as cholinesterase (ChE) and monoamine oxidase (MAO) inhibitors. The most promising compound, indolotacrine **9b**, was found to be a potent inhibitor of both cholinesterases and MAO A and a moderately potent inhibitor of MAO B.



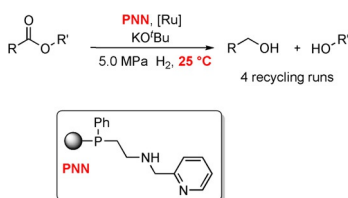
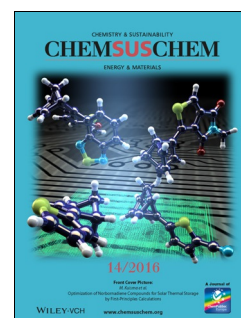
ChemSusChem
DOI: 10.1002/cssc.201600462

Water Splitting

L. Wang, N. T. Nguyen, P. Schmuki*

A Facile Surface Passivation of Hematite Photoanodes with Iron Titanate Cocatalyst for Enhanced Water Splitting

Shields up! A thin Fe₂TiO₅ layer was decorated on nanostructured hematite photoanodes by a facile water-based solution method. The Fe₂O₃/Fe₂TiO₅ heterostructure exhibits an obvious enhancement in solar water splitting. The enhancement in photocurrent can be attributed to the effect of Fe₂TiO₅ overlayers passivating surface states and thus reducing surface electron–hole recombination.



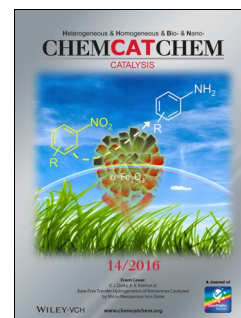
ChemCatChem
DOI: 10.1002/cctc.201600330

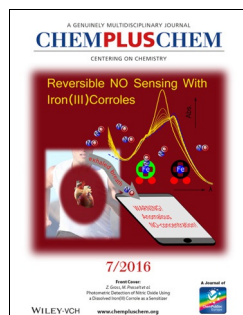
Hydrogenation

F. J. L. Heutz, C. Erken, M. J. B. Aguilu, L. Lefort, P. C. J. Kamer*

Heterogeneous Hydrogenation of Esters under Mild Conditions using Solid-Supported Phosphorus–Ruthenium Catalysts

Jekyll and Hyde: the first heterogeneous catalyst capable of hydrogenating esters under very mild, typically homogeneous, conditions (25 °C, 5.0 MPa) is described. Additionally, easy catalyst recovery and recycling is achieved. The system is based on phosphorus ligands covalently attached to a polymeric support, which is readily obtained by a solid-phase synthetic protocol.



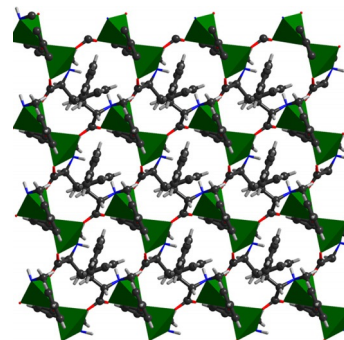


Metal–Organic Frameworks

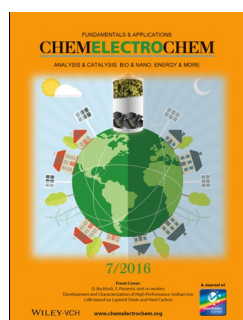
J.-P. Zheng, S. Ou, M. Zhao, C.-D. Wu*

A Highly Sensitive Luminescent Dye@MOF Composite for Probing Different Volatile Organic Compounds

Metal–organic framework sensor: We report an interesting layered coordination network based on the derivative of the natural amino acid L-phenylalanine and zinc ions, which can embed Rhodamine B dye to result in a luminescent sensor of Rho@MOF composite, which can detect different volatile organic compounds with clearly different and unique luminescence readouts by tuning the ligand-to-dye energy transfer (see figure).



ChemPlusChem
DOI: 10.1002/cplu.201600057

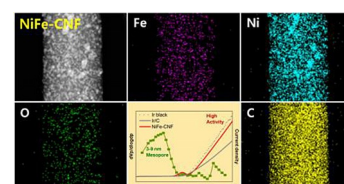


Metal–Organic Frameworks

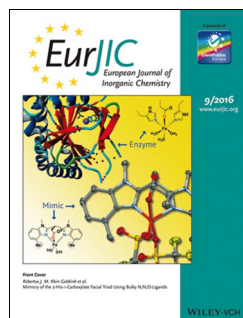
X. An, D. Shin, J. Jeong, J. Lee*

Metal-Derived Mesoporous Structure of a Carbon Nanofiber Electrocatalyst for Improved Oxygen Evolution Reaction in Alkaline Water Electrolysis

Cheaper catalysts: The lowest overpotential value of the oxygen evolution reaction with cost-effective carbon nanofiber (CNF) electrocatalysts is reported. This can be attributed to the homogeneous placement of active species in the metal-derived mesoporous structure.



ChemElectroChem
DOI: 10.1002/celec.201600072

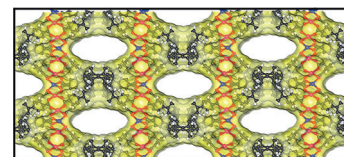


MOFs and Sensors

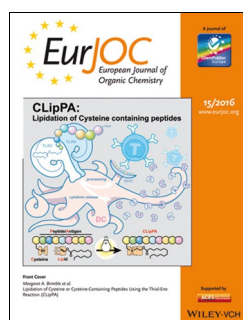
W. Yang, G. Chang, H. Wang,* T.-L. Hu, Z. Yao, K. Alfooty, S. Xiang, B. Chen

A Three-Dimensional Tetraphenylethene-Based Metal–Organic Framework for Selective Gas Separation and Luminescence Sensing of Metal Ions

A three-dimensional multifunctional metal–organic framework (MOF), UTSA-86, made up of cadmium ions and a tetraphenylethene-based tetracarboxylate ligand has been synthesized and characterized by single-crystal X-ray diffraction analysis. This MOF exhibits permanent porosity, selective gas uptake, and luminescence sensing of metal ions.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201600201

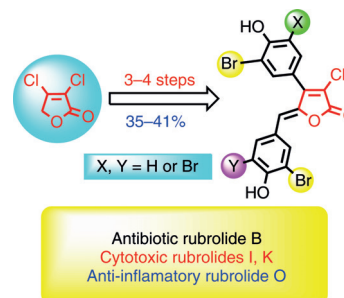


Natural Product Synthesis

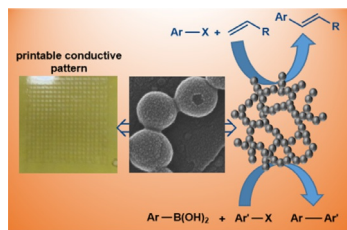
M. Karak, J. A. M. Acosta, L. C. A. Barbosa,* J. Boukouvalas

Late-Stage Bromination Enables the Synthesis of Rubrolides B, I, K, and O

The first total synthesis of the marine natural metabolites rubrolides B, I, K and O is described; this approach employs a site-selective Suzuki coupling, vinylogous aldol condensation and a late-stage regioselective bromination.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201600473



ChemistryOpen

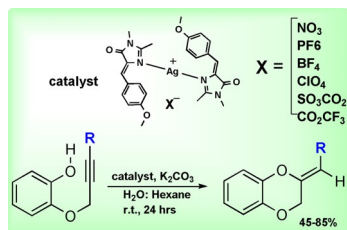
DOI: 10.1002/open.201600009

Catalysis

S. H. Mir, B. Ochiai*

Development of Hierarchical Polymer@Pd Nanowire-Network: Synthesis and Application as Highly Active Recyclable Catalyst and Printable Conductive Ink

Facile but versatile: The facile one-pot preparation and directed growth of a multifunctional Pd nanowire-network on interconnected hollow polymer nanospheres is reported. The Pd nanowire-network served as a highly active recyclable catalyst for Mizoroki–Heck and Suzuki–Miyaura couplings. Inkjet printing of the nanosphere ink produced a highly conductive pattern without annealing.



Asian J. Org. Chem.

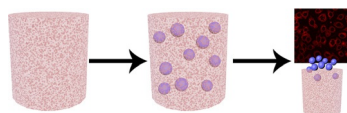
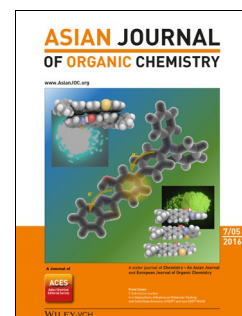
DOI: 10.1002/ajoc.201600173

Heterogeneous Catalysis

A. Singh, G. Ramanathan*

Rational Design of Heterogeneous Silver Catalysts by Exploitation of Counteranion-Induced Coordination Geometry

Green machine: The coordination complexes of a green fluorescent protein (GFP) chromophore analogue with a variety of silver salts have been synthesized by varying the counteranion. The counteranion influences the geometry and coordination number of the silver ion in these complexes. Complexes that have a free coordination site have been exploited as heterogeneous catalysts for cyclization reactions under “green” conditions.



ChemNanoMat

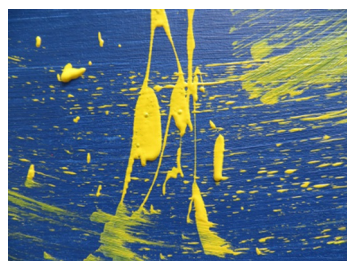
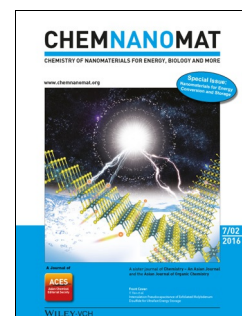
DOI: 10.1002/cnma.201600078

Drug Delivery

S. Y. Tan, C. Y. Ang, A. Mahmood, Q. Qu, P. Li, R. Zou,* Y. Zhao*

Doxorubicin-Loaded Metal–Organic Gels for pH and Glutathione Dual-Responsive Release

Metal–organic gels are capable of storing anticancer drugs within the pores, and then releasing them under acidic pH or in the presence of glutathione. In vitro experiments show a low toxicity of metal–organic gels and confirm the triggered drug release.



ChemViews magazine

DOI: 10.1002/chemv.201600053

Analytical Chemistry

D. Bradley

Jackson Pollock's “Alchemy” Analyzed

Analyzing the chemical makeup of paintings without damaging them can be difficult. Researchers from Italy have used non-invasive spectroscopy methods to reveal the technique and paint palette of famous artist Jackson Pollock – without needing to scrape off or cut out samples.

