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die Artikel mit einem Klick direkt aufrufen, ansonsten sind sie durch Eingabe der DOIs über Wiley Online Library leicht online zugänglich.

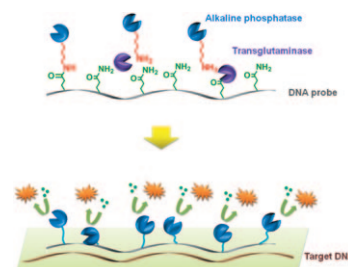


DNA-Protein Conjugate

M. Kitaoka, Y. Tsuruda, Y. Tanaka, M. Goto, M. Mitsumori, K. Hayashi, Y. Hiraishi, K. Miyawaki, S. Noji, N. Kamiya*

Transglutaminase-Mediated Synthesis of a DNA-(Enzyme)_n Probe for Highly Sensitive DNA Detection

DNA detector: A glutamine-modified DNA probe was synthesized by the polymerase chain reaction by using a glutamine-modified 2'-deoxyuridine 5'-triphosphate analogue as a substrate of DNA polymerase. The DNA-(alkaline phosphatase)_n conjugate probe was highly sensitive and could directly visualize the target DNA bound on a membrane immediately after hybridization (see graphic).



Chem. Eur. J.
DOI: 10.1002/chem.201003744

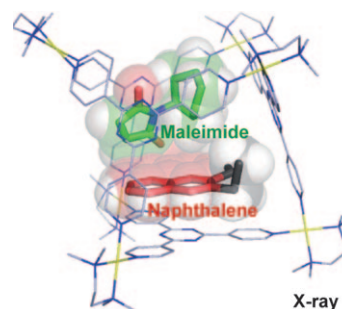


Diels-Alder Reactions

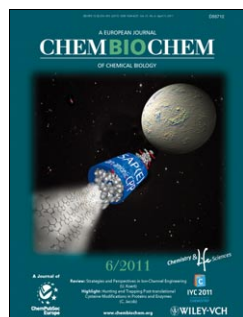
S. Horiuchi, T. Murase, M. Fujita*

Diels-Alder Reactions of Inert Aromatic Compounds within a Self-Assembled Coordination Cage

Cage against the machine: A self-assembled coordination cage can accommodate a pair of aromatic compounds and dienophiles to promote the Diels-Alder reactions of otherwise inert aromatic molecules. Preorganization of the substrate pair within the cage was quantified as a significant decrease of entropy cost and clearly illustrated by X-ray crystallographic analysis.



Chem. Asian J.
DOI: 10.1002/asia.201000842



Stem Cells

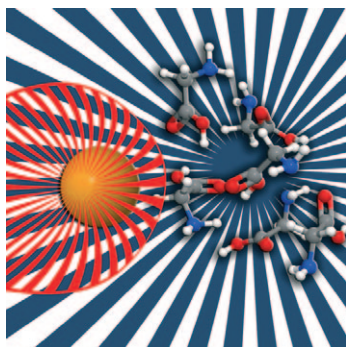
L. C. Bouchez, A. E. Boitano, L. de Lichtervelde, R. Romeo, M. P. Cooke, P. G. Schultz*

Small-Molecule Regulators of Human Stem Cell Self-Renewal

A cell-based phenotypic screen using primary CD34⁺ cells identified novel regulators of hematopoietic stem cell (HSC) fate. These compounds expand cord-blood-derived HSCs by acting as potent antagonists of the aryl hydrocarbon receptor.



ChemBioChem
DOI: 10.1002/cbic.201000734



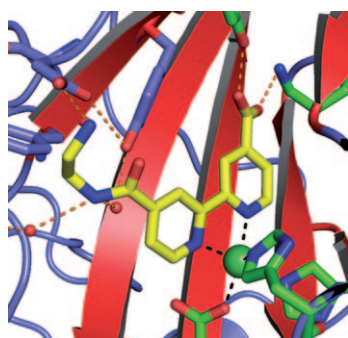
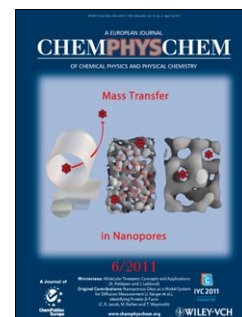
ChemPhysChem
DOI: 10.1002/cphc.201000823

Amino Acid Fragmentation

S. Maclot, M. Capron, R. Maisonnay, A. Ławicki, A. Méry, J. Rangama, J.-Y. Chesnel, S. Bari, R. Hoekstra, T. Schlathölter, B. Manil, L. Adoui, P. Rousseau,* B. A. Huber

Ion-Induced Fragmentation of Amino Acids: Effect of the Environment

The weakest link: Radiation induces the fragmentation of amino acids and is mainly driven by the cleavage of the C–C $_{\alpha}$ bond; the weakest bond of the system. By embedding the amino acid in clusters, the fragmentation pattern changes drastically. The weak hydrogen-bonded network (see picture) preferentially breaks, leading to a protective effect of the environment acting as “buffer”.



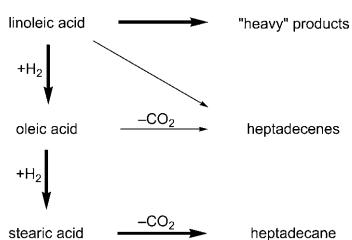
ChemMedChem
DOI: 10.1002/cmdc.201100026

Epigenetics

K.-H. Chang, O. N. F. King, A. Tumber, E. C. Y. Woon, T. D. Heightman, M. A. McDonough, C. J. Schofield,* N. R. Rose*

Inhibition of Histone Demethylases by 4-Carboxy-2,2'-Bipyridyl Compounds

Exploiting epigenetics: 2-Oxoglutarate (2OG)-dependent histone lysine demethylases, such as JMJD2E, are potential therapeutic targets in a range of diseases. Through structure–activity relationship studies and analyses, we identified a potent 4-carboxy-2,2'-bipyridyl compound, which inhibits JMJD2E with an IC₅₀ value of 110 nM, representing a 66-fold improvement over the lead compound. These bipyridyl derivatives bind in the 2-oxoglutarate binding site.



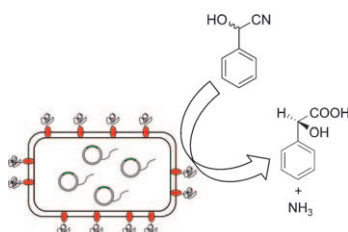
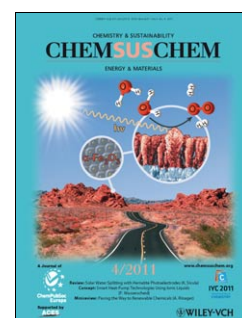
ChemSusChem
DOI: 10.1002/cssc.201000370

Biomass Valorization

J. Fu, X. Lu, P. E. Savage*

Hydrothermal Decarboxylation and Hydrogenation of Fatty Acids over Pt/C

In hot water: The conversion of saturated and unsaturated alkanes, catalyzed by Pt/C in the absence of H₂, in high-temperature water has been investigated (see figure). H₂ is formed in situ during the hydrothermal catalytic process. This hydrothermal decarboxylation route represents a new path for using renewable resources to make molecules with value as liquid transportation fuels.



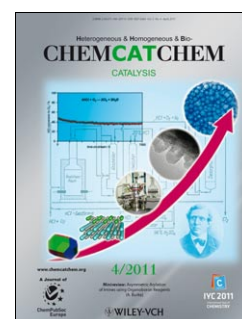
ChemCatChem
DOI: 10.1002/cctc.201000382

Biocatalysis

C. Detzel, R. Maas, J. Jose*

Autodisplay of Nitrilase from *Alcaligenes faecalis* in *E. coli* Yields a Whole Cell Biocatalyst for the Synthesis of Enantiomerically Pure (R)-Mandelic Acid

The enzyme factory: The Autodisplay-mediated surface display of a nitrilase provides an interesting new approach for immobilization of a multimeric enzyme on the surface of *E. coli*, which eliminates the need for costly enzyme preparations. With the production of 380 mg of pure (R)-mandelic acid the whole-cell biocatalyst showed its suitability for biocatalysis.



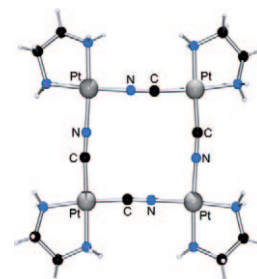


Metallacycles

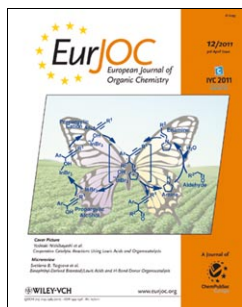
A. Galstyan, P. J. Sanz Miguel, J. Wolf, E. Freisinger, B. Lippert*

Discrete Molecular Squares $\{[(en)M(CN)]_4\}^{4+}$ Derived from $[(en)M(CN)_2]$ ($M = Pt^{II}, Pd^{II}$)

Cationic molecular squares composed of $(en)M$ ($M = Pt^{II}, Pd^{II}$) corners and cyanide bridges have been prepared and details of their formation and reactivity have been studied.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201001216

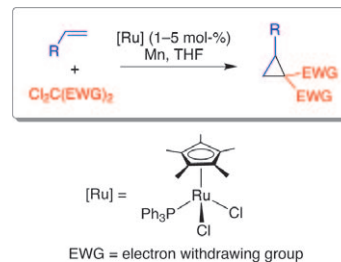


Radical Chemistry

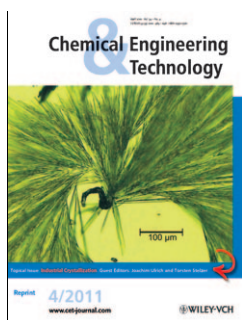
M. A. Fernández-Zúmel, C. Buron, K. Severin*

Sequential ATRA/Reductive Cyclopropanation Reactions with a Ruthenium Catalyst in the Presence of Manganese

Atom-transfer radical addition reactions followed by dechlorination can be used to access functionalized cyclopropanes from easily accessible starting materials.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201100175

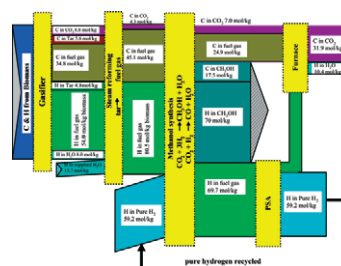


Green Process for Methanol Production

W. Feng, P. Ji*, B. Chen, D. Zheng

Analysis of Methanol Production from Biomass Gasification

A green process for methanol production was investigated. The process starts with biomass gasification, followed by steam reforming of the syngas and conversion of the syngas to methanol. Process analysis indicates that optimal combinations of a number of key parameters can greatly enhance the methanol production and the thermodynamic efficiency.



Chem. Eng. Technol.
DOI: 10.1002/ceat.201000346