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Reaction Mechanisms

S. Peitz, B. R. Aluri, N. Peulecke, B. H. Müller, A. Wöhl, W. Müller,* M. H. Al-Hazmi, F. M. Mosa, U. Rosenthal*

An Alternative Mechanistic Concept for Homogeneous Selective Ethylene Oligomerization of Chromium-Based Catalysts: Binuclear Metallacycles as a Reason for 1-Octene Selectivity?

2 + 2 + 2 = 6 and 2 × 4 = 8? This concept explains the differences of selectivity between ethylene tri- and tetramerization by the capability of the ligands to form binuclear complexes that subsequently build up two metallacyclopentanes in one moiety. These two C₄ units are then coupled to form 1-octene selectively (see scheme).



Chem. Eur. J.
DOI: [10.1002/chem.201000750](https://doi.org/10.1002/chem.201000750)

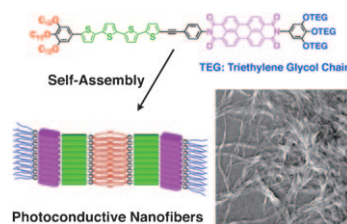


Nanomaterials

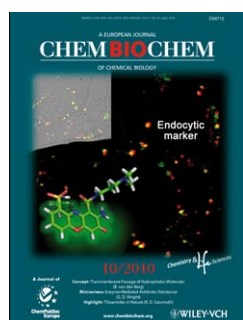
W.-S. Li,* A. Saeki, Y. Yamamoto, T. Fukushima,* S. Seki, N. Ishii, K. Kato, M. Takata, T. Aida*

Use of Side-Chain Incompatibility for Tailoring Long-Range p/n Heterojunctions: Photoconductive Nanofibers Formed by Self-Assembly of an Amphiphilic Donor-Acceptor Dyad Consisting of Oligothiophene and Perylenediimide

Custom fit: Organic p/n heterojunctions with molecular-level precision have been tailored. An oligothiophene-perylenediimide dyad, when modified with triethylene glycol side chains at one terminus and dodecyl side chains at the other, self-assembles into a photoconducting nanofiber with a well-defined morphology (see figure).



Chem. Asian J.
DOI: [10.1002/asia.201000111](https://doi.org/10.1002/asia.201000111)

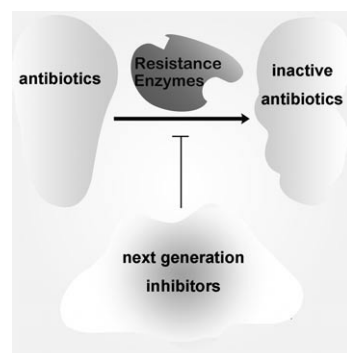


Kinases

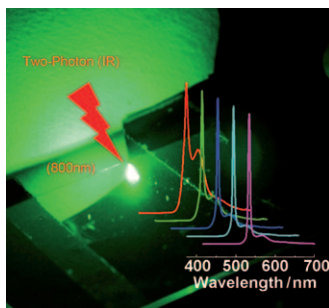
G. De Pascale, G. D. Wright*

Antibiotic Resistance by Enzyme Inactivation: From Mechanisms to Solutions

Resistance is fertile: Bacteria evade antibiotics by using a number of methods, but the selection and optimization of enzymes that destroy or modify drugs is a particularly prominent mechanism. We review recent advances in our understanding of the molecular mechanisms of these enzymes as well as efforts to block their activities through small molecule inhibitors.



ChemBioChem
DOI: [10.1002/cbic.201000067](https://doi.org/10.1002/cbic.201000067)



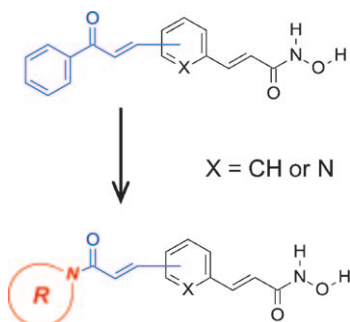
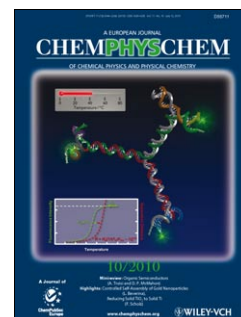
ChemPhysChem
DOI: 10.1002/cphc.201000142

Photonic Devices

H. Xia, J. Yang, H.-H. Fang, Q.-D. Chen, H.-Y. Wang, X.-Q. Yu,*
Y.-G. Ma, M.-H. Jiang, H.-B. Sun*

Efficient Two-Photon Excited Amplified Spontaneous Emission from Organic Single Crystals

Solid-state gain media: Efficient two-photon excited amplified spontaneous emission is observed from high quality DBASDMB crystals (see figure) which possess unique photonic properties including large two photon absorption, high fluorescent quantum efficiency, and stimulated emission. This new kind of solid-state gain media exhibits great potential for frequency upconversion applications.



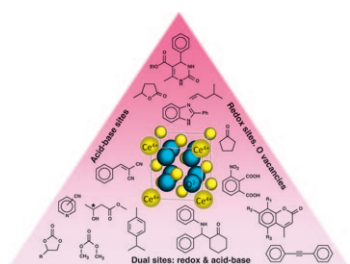
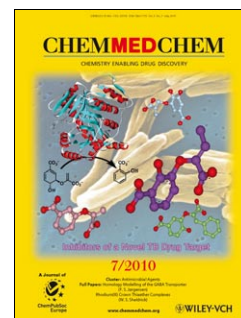
ChemMedChem
DOI: 10.1002/cmdc.201000166

Antiproliferation

F. Thaler,* M. Varasi, A. Colombo, R. Boggio, D. Munari, N. Regalia,
M. G. Rozio, V. Reali, A. E. Resconi, A. Mai, S. Gagliardi, G. Dondio,
S. Minucci, C. Mercurio

Synthesis and Biological Characterization of Amidopropenyl Hydroxamates as HDAC Inhibitors

Potent and remarkably stable: Herein we summarize the synthesis and biological evaluation of a series of amidopropenyl hydroxamic acid derivatives as novel inhibitors of human histone deacetylases (HDAC). Selected compounds were studied for their in vivo pharmacokinetic behavior as well their metabolic stability in microsomal preparations and in hepatocytes.



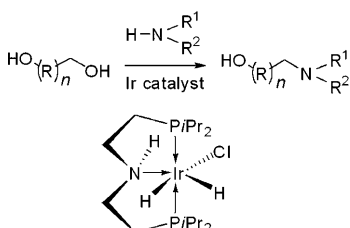
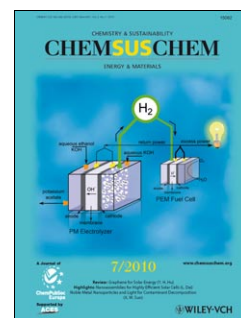
ChemSusChem
DOI: 10.1002/cssc.201000054

Organic Chemistry

L. Vivier,* D. Duprez

Ceria-Based Solid Catalysts for Organic Chemistry

Truth Cerium: Although cerium-based catalysts already find wide use in catalytic converters, because of their oxygen storage capacity, they are also being more frequently applied in organic chemistry and catalysis because of their exceptional redox and surface acid–base properties. This Review analyzes the main research directions explored during the last ten years according to the nature of the ceria sites: basic, acidic, redox, or a combination of these.



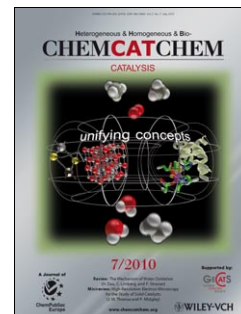
ChemCatChem
DOI: 10.1002/cctc.201000046

Homogeneous Catalysis

N. Andrushko, V. Andrushko,* P. Roose, K. Moonen, A. Börner*

Amination of Aliphatic Alcohols and Diols with an Iridium Pincer Catalyst

Best aminated feature: Catalytic transformation of alcohols to amines is a fundamental transformation in synthetic organic chemistry. A general salt-free Ir-catalyzed amination of aliphatic alcohols and diols has been developed, which gives amino alcohols with high selectivity. By use of an Ir–pincer chlorodihydride complex, usually applied for the transfer hydrogenation of ketones, simple monoalcohols are aminated with excellent yields.



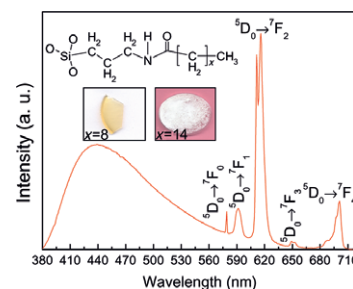


Eu-Doped Alkyl/Siloxane Hybrids

S. C. Nunes, J. Planelles-Aragó, R. A. S. Ferreira, L. D. Carlos,*
V. de Zea Bermudez*

Eu^{III}-Doping of Lamellar Bilayer and Amorphous Mono-Amide
Cross-Linked Alkyl/Siloxane Hybrids

Two structurally different but chemically similar series of mono-amido-sil alkyl/siloxane hosts have been doped with a wide range of concentrations of Eu(CF₃SO₃)₃. The influence of the structure of the two mono-amidosils (lamellar bilayer or amorphous matrix) on the photoluminescence features is addressed by using Eu³⁺ ions as a local probe.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.201000166

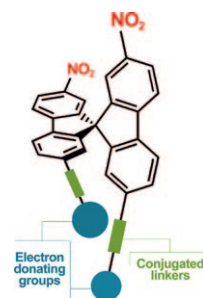


Nonlinear Optical Spiro Compounds

F. Rizzo, M. Cavazzini, S. Righetto, F. De Angelis, S. Fantacci,
S. Quici*

A Joint Experimental and Theoretical Investigation on Nonlinear
Optical (NLO) Properties of a New Class of Push–Pull Spirobifluorene
Compounds

A new class of push–pull chromophores with disubstituted amines and nitro groups connected to a spirobifluorene core has been synthesized. The first and second hyperpolarizability (β and γ) of these compounds have been investigated through a joint experimental and theoretical approach and compared to those of reference fluorenes.



Eur. J. Org. Chem.

DOI: 10.1002/ejoc.201000335

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