

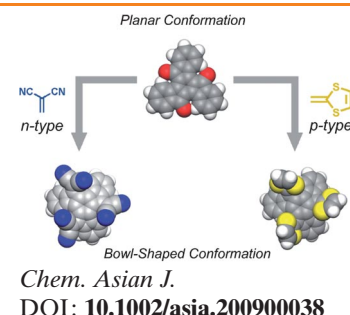


Liquid Crystals

K. Isoda, T. Yasuda, T. Kato*

Truxene-Based Columnar Liquid Crystals: Self-Assembled Structures and Electro-Active Properties

Functional bowls: The dicyanomethylene and dithiafulvene substituents have been introduced into the π -conjugated truxene framework to tune the electronic and redox properties as well as the molecular assembled structures. The dicyanomethylene- and dithiafulvene-appended truxenes function as the electron acceptor or the electron donor, respectively.

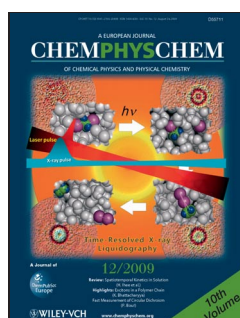
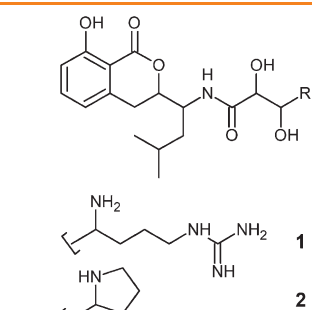


Biosynthesis

D. Reimer, E. Luxenburger, A. O. Brachmann, H. B. Bode*

A New Type of Pyrrolidine Biosynthesis Is Involved in the Late Steps of Xenocoumacin Production in *Xenorhabdus nematophila*

Feeding experiments have revealed that xenocoumacin I (**1**) is the precursor of xenocoumacin II (**2**), which was previously thought to be derived from the direct incorporation of proline. From mutational analyses of the biosynthesis gene cluster identified in the entomopathogenic bacterium *Xenorhabdus nematophila*, we propose that a desaturase (XcnN) and a saccharopine dehydrogenase-like enzyme (XcnM) are essential for this unusual transformation.

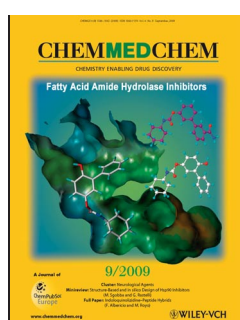
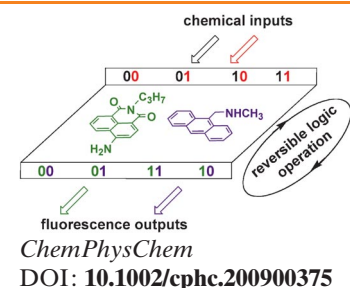


Logic Gates

P. Remón, R. Ferreira, J.-M. Montenegro, R. Suau, E. Pérez-Inestrosa,* U. Pischel*

Reversible Molecular Logic: A Photophysical Example of a Feynman Gate

Return trip included! The first molecular realization of a reversible logic operation with a simple cocktail of two classical fluorophores is demonstrated (see figure). Protons and anions, which serve as inputs, trigger independent fluorescence answer signals. Thus, XOR and YES gates are straightforward implemented, resulting in reversible logic behavior.

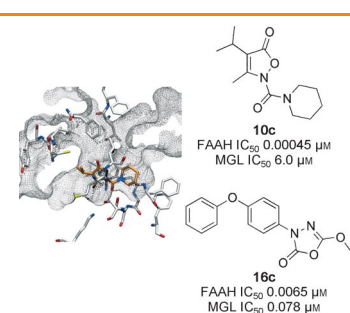


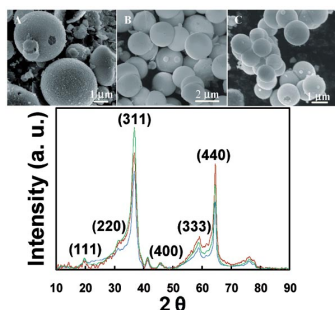
Drug Design

A. Minkkilä,* J. R. Savinainen, H. Käsänen, H. Xhaard, T. Nevalainen, J. T. Laitinen, A. Poso, J. Leppänen, S. M. Saario*

Screening of Various Hormone-Sensitive Lipase Inhibitors as Endocannabinoid-Hydrolyzing Enzyme Inhibitors

Various hormone-sensitive lipase (HSL) inhibitors, such as oxadiazolones, 2*H*-isoxazol-5-ones and carbamoyltriazoles, were evaluated for their fatty acid amide hydrolase (FAAH) and monoglyceride lipase (MGL) inhibitory potencies. All compounds inhibited both enzymes with IC_{50} values varying from the nanomolar to low micromolar range. The compounds may serve as lead structures in the development of novel and potentially selective FAAH and MGL inhibitors.





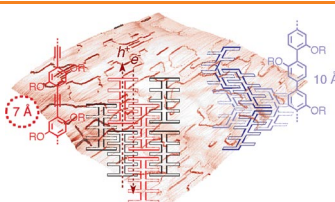
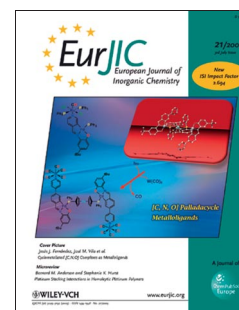
Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.200900359

Mesoporous Nanocrystalline Materials

C. A. Deshmane, J. B. Jasinski, M. A. Carreon*

Thermally Stable Nanocrystalline Mesoporous Gallium Oxide Phases

Semicrystalline and crystalline mesoporous gallium oxide phases displaying high surface areas and unimodal pore sizes were prepared in the presence of ionic and non-ionic structure directing agents via EISA and SAHA.



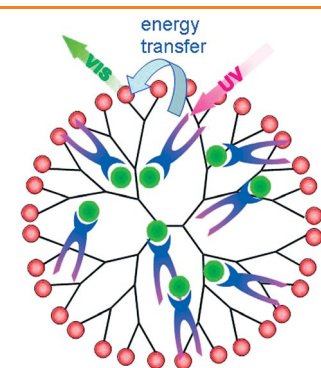
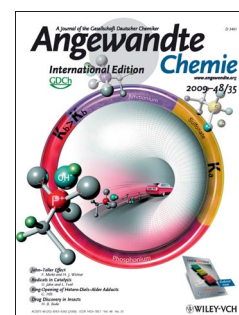
Angew. Chem. Int. Ed.
DOI: 10.1002/anie.200902551

Artificial Photosynthesis

R. Bhosale, A. Perez-Velasco, V. Ravikumar, R. S. K. Kishore, O. Kel, A. Gomez-Casado, P. Jonkheijm, J. Huskens, P. Maroni, M. Borkovec, T. Sawada, E. Vauthey,* N. Sakai,* S. Matile*

Topologically Matching Supramolecular n/p-Heterojunction Architectures

Matching matters when building supramolecular n/p-heterojunction photosystems on solid supports that excel with efficient photocurrent generation, important critical thickness, smooth surfaces, and flawless responsiveness to functional probes for the existence of operational intra- and interlayer recognition motifs.



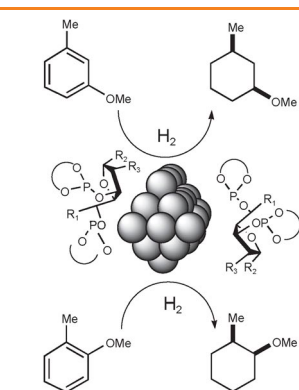
Chem. Eur. J.
DOI: 10.1002/chem.200802300

Coordinating Dendrimers

B. Branchi, P. Ceroni,* V. Balzani, G. Bergamini, F.-G. Klärner,* F. Vögtle

Adducts between Dansylated Poly(propylene amine) Dendrimers and Anthracene Clips Mediated by Zn^{II} Ions: Highly Efficient Photoinduced Energy Transfer

Give us a glue! The self-assembly of anthracene-functionalized clips (purple-blue) and dansylated (red) dendrimers from the first up to the fourth generation, which is driven by Zn^{II} ions (green) as the “glue”, leads to an energy transfer from the excited state of anthracene to yield the fluorescent excited state of dansyl.



ChemSusChem
DOI: 10.1002/cssc.200900079

Asymmetric Hydrogenation

A. Gual, C. Godard, K. Philippot,* B. Chaudret, A. Denicourt-Nowicki, A. Roucoux,* S. Castillón, C. Claver*

Carbohydrate-Derived 1,3-Diphosphite Ligands as Chiral Nanoparticle Stabilizers: Promising Catalytic Systems for Asymmetric Hydrogenation

Metallic Ru, Rh, and Ir nanoparticles are prepared by the decomposition of organometallic precursors in the presence of 1,3-diphosphite ligands as stabilizing agents. These nanoparticles are shown to be active in the hydrogenation of *m*- and *o*-methylani-sole.

