

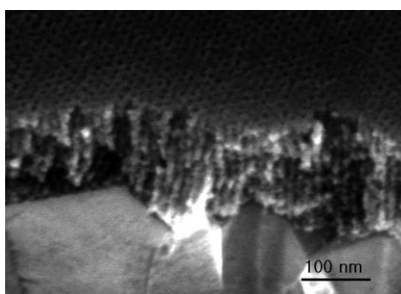
Mesoporous Materials

C.-W. Koh, U.-H. Lee, J.-K. Song,
H.-R. Lee, M.-H. Kim, M. Suh,
Y.-U. Kwon*

Mesoporous Titania Thin Film with Highly Ordered and Fully Accessible Vertical Pores and Crystalline Walls

Chem. Asian J.

DOI: 10.1002/asia.200700331



Available vacancies: Novel mesoporous titania thin films can be prepared with highly ordered vertical channels. Most of the pores are accessible from the film surface, and these channels can be filled with gold to produce gold nanowires.

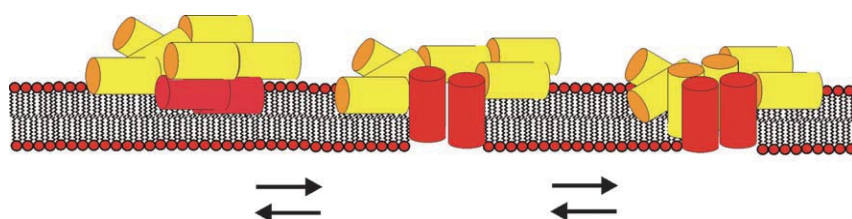
Membrane Proteins

C. Aisenbrey, M. Cusan, S. Lambotte,
P. Jasperse, J. Georgescu, U. Harzer,
B. Bechinger*

Specific Isotope Labeling of Colicin E1 and B Channel Domains For Membrane Topological Analysis by Oriented Solid-State NMR Spectroscopy

ChemBioChem

DOI: 10.1002/cbic.200700507



Umbrella or pen-knife? A method is presented to selectively label the colicin E1 and B channel domains with ^{15}N . When the colicin E1 channel that carries a single ^{15}N methionine within its hydrophobic helix 9 region was re-

constituted into oriented membranes and investigated by solid-state NMR spectroscopy, a variety of alignments were observed. This suggests that the protein can adopt a variety of conformations.

Solar Cells

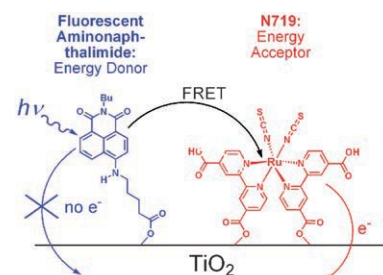
C. Siegers,* U. Würfel, M. Zistler,
H. Gores, J. Hohl-Ebinger,
A. Hinsch, R. Haag

Overcoming Kinetic Limitations of Electron Injection in the Dye Solar Cell via Coadsorption and FRET

ChemPhysChem

DOI: 10.1002/cphc.200700864

Two are better than one: Coadsorbing a fluorescent dye with N719 onto the TiO_2 electrode of a transparent dye solar cell leads to photocurrent generation from the additional dye although it is not a good sensitizer for TiO_2 alone. This behavior is attributed to resonant energy transfer to N719 (see figure). The latter thus acts as a catalyst for sensitization of a second dye.



Computer Chemistry

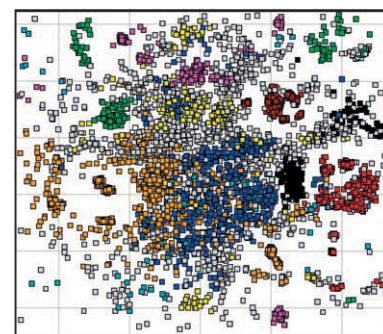
L. Ridder,* M. Wagener*

SyGMA: Combining Expert Knowledge and Empirical Scoring in the Prediction of Metabolites

ChemMedChem

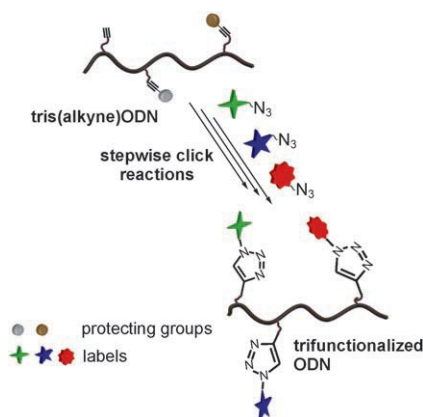
DOI: 10.1002/cmdc.200700312

A dataset of 6187 metabolic reactions reported to occur in man has been used to develop a rule-based method that systematically predicts and ranks potential metabolites of a given parent compound. The graphic shows a projection of the training set with various types of correctly predicted metabolic reactions represented by different colors.



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DNA Labeling



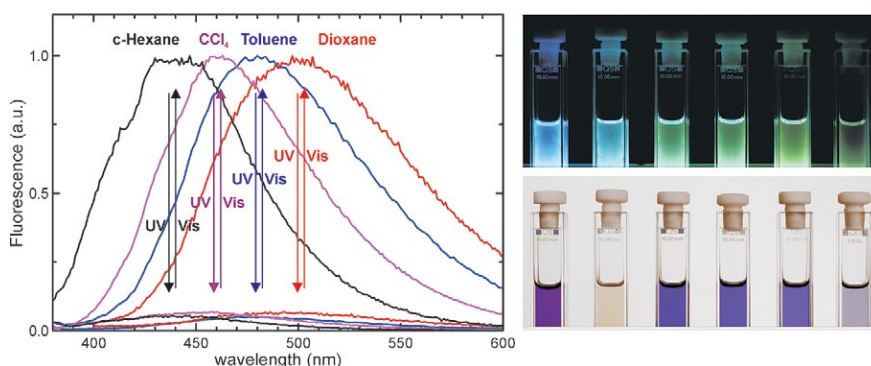
One, two, or three: An efficient, modular, and robust protocol has been developed for the multiple functionalization of DNA. It is based on the click reaction of azides with the alkyne substituents on an oligodeoxyribonucleotide (ODN), which was prepared by the standard phosphoramidite method (see scheme). ODNs can thus be labeled with two sensitive molecules, and even triple modification is possible.

P. M. E. Gramlich, S. Warncke, J. Gierlich, T. Carell*

Click-Click-Click: Single to Triple Modification of DNA

Angew. Chem. Int. Ed.
DOI: [10.1002/anie.200705664](https://doi.org/10.1002/anie.200705664)

Switchable Fluorescent Probes



New fluorescent probes, whose emission can be switched “on” and “off” photochemically, are also able to sense the polarity of the (micro)environ-

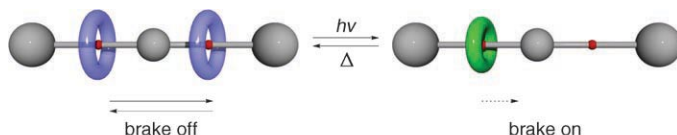
ment. The nature of the solvent produces a solvatochromic effect in the emission spectra, and affects the speed of the switching reaction.

S. F. Yan, V. N. Belov, M. L. Bossi,* S. W. Hell

Switchable Fluorescent and Solvatochromic Molecular Probes Based on 4-Amino-*N*-methylphthalimide and a Photochromic Diarylethene

Eur. J. Org. Chem.
DOI: [10.1002/ejoc.200800125](https://doi.org/10.1002/ejoc.200800125)

Molecular Shuttle



Switching Device: A report into the design, synthesis, and demonstration of

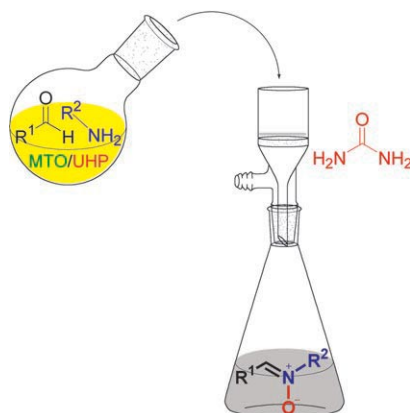
a prototype shuttling molecular machine that has a reversible brake function.

K. Hirose,* Y. Shiba, K. Ishibashi, Y. Doi, Y. Tobe

A Shuttling Molecular Machine with Reversible Brake Function

Chem. Eur. J.
DOI: [10.1002/chem.200702001](https://doi.org/10.1002/chem.200702001)

Sustainable Chemistry



Simple, selective, sustainable: Nitrones can be synthesized from primary amines and aldehydes by a one-pot condensation/oxidation process with urea-hydrogen peroxide (UHP) in the presence of methyltrioxorhenium (MTO). At the end of the reaction, the solid urea is simply filtered off. The reaction is simple and high yielding (68–89 %), and it allows the regioselective synthesis of nitrones from easily available starting materials.

F. Cardona, M. Bonanni, G. Soldaini, A. Goti*

One-Pot Synthesis of Nitrones from Primary Amines and Aldehydes Catalyzed by Methyltrioxorhenium

ChemSusChem
DOI: [10.1002/cssc.200700156](https://doi.org/10.1002/cssc.200700156)