Spotlights ...

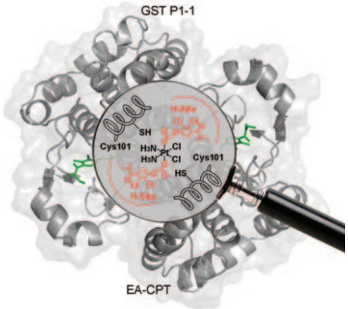
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Antitumor Agents

L. J. Parker, L. C. Italiano, C. J. Morton, N. C. Hancock, D. B. Ascher, J. B. Aitken, H. H. Harris, P. Campomanes, U. Rothlisberger, A. De Luca, M. Lo Bello, W. H. Ang, P. J. Dyson, M. W. Parker*

Studies of Glutathione Transferase P1-1 Bound to a Platinum(IV)-Based Anticancer Compound Reveal the Molecular Basis of its Activation

Understanding interactions: The synthesized platinum cancer metallodrug ethacraplatin (EA-CPT) is known to interact with the pi class glutathione S-transferase (GST P1-1), an enzyme the overexpression of which, in some cases, limits the effectiveness of other platinum-based cancer drugs. To understand the nature of the EA-CPT–GST P1-1 interactions (see figure) and to obtain mechanistic insights at the molecular level, structural and biochemical investigations were performed.



Chem. Eur. J.

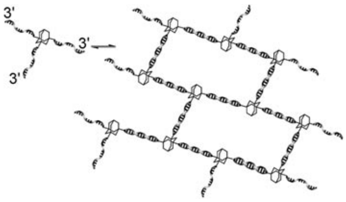
DOI: **10.1002/chem.201100586**

DNA Structures

R. Pathak, A. Marx*

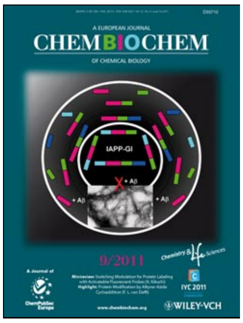
An Adamantane-Based Building Block for DNA Networks

The social network? A three-way branched adamantane building block that is capable of forming stable DNA networks has been synthesized (see picture). This rigid three-way organic framework could serve as a useful building block for DNA-based nanoconstructions.



Chem. Asian J.

DOI: **10.1002/asia.201000887**

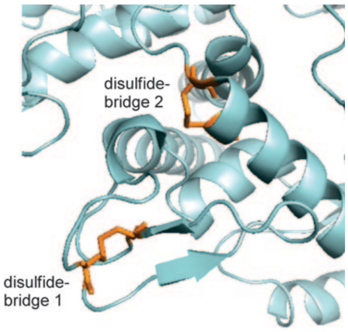


DNA Polymerases

T. Killelea, B. A. Connolly*

Role of Disulfide Bridges in Archaeal Family-B DNA Polymerases

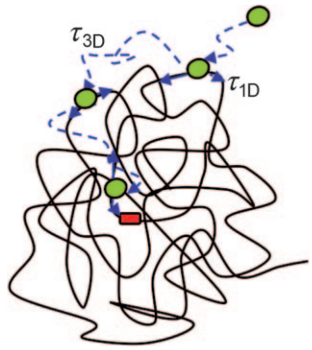
Some like it hot: The family-B DNA polymerases from the *Thermococcales* are extensively used in PCR. They usually contain two disulfide bridges (see figure), the role of which in thermostability has been probed with site directed mutagenesis. The disulfides play a role in stability but even deletion of both does not compromise PCR performance. This opens the way to single cysteine variants, amenable to useful chemical modification.



ChemBioChem

DOI: **10.1002/cbic.201100145**

Protein-DNA Interactions

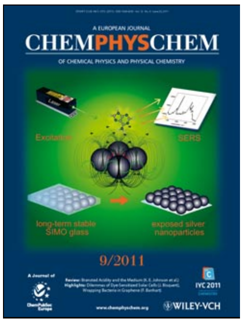


A. Tafvizi, L. A. Mirny, A. M. v. Oijen*

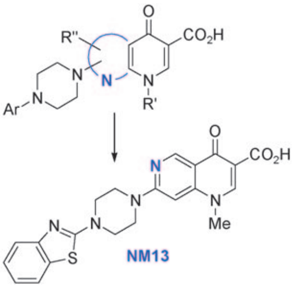
Dancing on DNA: Kinetic Aspects of Search Processes on DNA

Let's tango: Recognition and binding of specific sites on DNA by proteins is central for many cellular functions. In the search for its target site, the DNA-associated protein is facing both thermodynamic and kinetic difficulties. Herein, the history of the DNA search problem, the theoretical background and the various experimental methods used to study the kinetics of protein searching for target sites on DNA are discussed (see picture).

ChemPhysChem
DOI: **10.1002/cphc.201100112**



Antiviral Agents



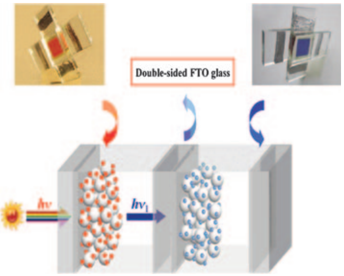
O. Tabarrini,* S. Massari, L. Sancineto, D. Daelemans, S. Sabatini, G. Manfroni, V. Cecchetti, C. Pannecouque

Structural Investigation of the Naphthyridone Scaffold: Identification of a 1,6-Naphthyridone Derivative with Potent and Selective Anti-HIV Activity

Best in class: The naphthyridone scaffold was investigated in depth by synthesizing various analogues that were tested for their anti-HIV activity. This led to the identification of a very potent and nontoxic compound, NM13, as the most selective anti-HIV derivative ever obtained in the quinolone class of transcription inhibitors. It is the result of a powerful combination of the 1,6-naphthyridone nucleus and the C7 benzothiazolpiperazine group.

ChemMedChem
DOI: **10.1002/cmdc.201100073**

Solar Cells

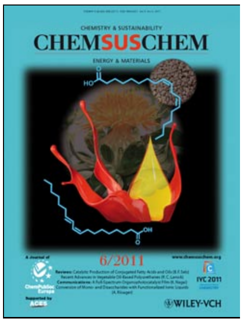


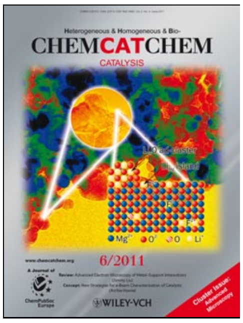
L. Li, Y. Hao, X. Yang,* J. Zhao, H. Tian, C. Teng, A. Hagfeldt, L. Sun*

A Double-Band Tandem Organic Dye-sensitized Solar Cell with an Efficiency of 11.5%

Illustrious pair: A tandem solar cell employs a front sub-cell with a ZrO_2-doped nanostructured TiO_2 and an organic dye to harvest 400–750 nm sunlight and a back sub-cell with another organic dye and a normal TiO_2 electrode to capture 500–800 nm sunlight. A high V_{OC} and J_{SC} are achieved in the visible region of the solar spectrum, and at the same time to near-IR light is harvested.

ChemSusChem
DOI: **10.1002/cssc.201100002**



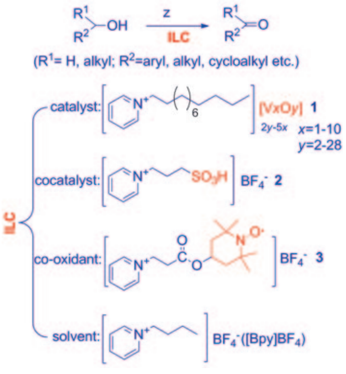


Ionic Liquids

S.-S. Wang, Z. Popović, H.-H. Wu,* Y. Liu*

A Homogeneous Mixture Composed of Vanadate, Acid, and TEMPO Functionalized Ionic Liquids for Alcohol Oxidation by H_2O_2

It's cocktail hour: The ionic liquid compositions (ILCs) composed of **1**, **2**, **3**, and $[Bpy]BF_4$ proved to be an efficient catalytic system for the oxidation of a wide range of alcohols by H_2O_2. With the aid of **2** and **3**, **1** in $[Bpy]BF_4$ could be recycled for six runs without loss in activity. The role of **2** was to promote the formation of the active peroxo V^V species, which are responsible for substrate activation. The role of **3** was in the regeneration of **1**.



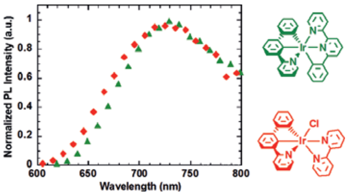
ChemCatChem
DOI: **10.1002/cctc.201000401**

Near-Infrared Luminescence

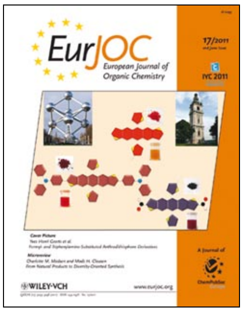
Y. Koga,* M. Kamo, Y. Yamada, T. Matsumoto, K. Matsubara*

Synthesis, Structures, and Unique Luminescent Properties of Tridentate C^C^N Cyclometalated Complexes of Iridium

The first C^C^N cyclometalated complexes of iridium that bear tridentate pyridylbiphenylene ligands were synthesized in good yields through a directed C–C bond activation of pyridylbiphenylene. Photoirradiation of these complexes showed unique luminescent properties at long wavelengths in the near-infrared range.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201100055**

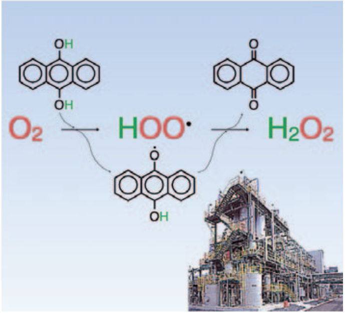


Anthraquinone Process

T. Nishimi, T. Kamachi, K. Kato, T. Kato, K. Yoshizawa*

Mechanistic Study on the Production of Hydrogen Peroxide in the Anthraquinone Process

Reaction mechanisms for the autoxidation step of the anthraquinone process have been studied. The proposed mechanism is that the hydrogen atom of anthrahydroquinone is abstracted by dioxygen to produce a hydroperoxide radical, followed by subsequent hydrogen atom abstraction, leading to the formation of hydrogen peroxide and anthraquinone.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201100300**