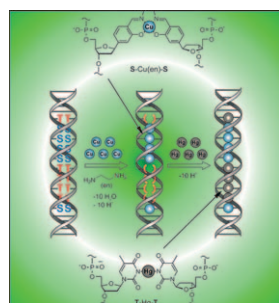
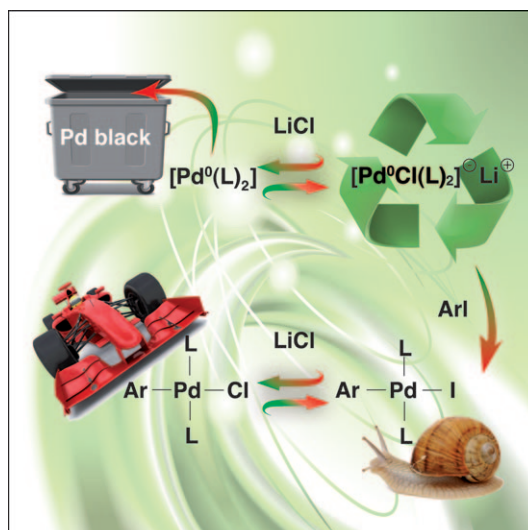


Concept

Metal-Complex/DNA Conjugates:
A Versatile Building Block for DNA Nanoarrays
E. Defrancq and S. Ghosh

Pd-catalyzed cross-coupling reactions...

... are among the most powerful tools available to synthetic organic chemists to create C–C bonds. Standard Pd catalysts often prove to be inefficient in more complex (“real life”) systems, resulting in low conversions and yields of the desired compound. While the cross-coupling rate is hitherto typically increased by modification of the ligand of the Pd catalyst, simple additives (e.g., halides) can also be used to accelerate the reactions as exemplified in this paper for the Stille reaction. For more details see the Full Paper by B. U. W. Maes et al. on page 12831 ff.

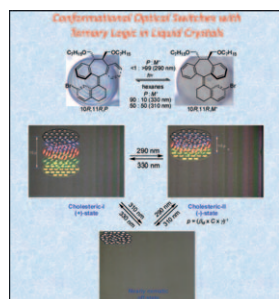
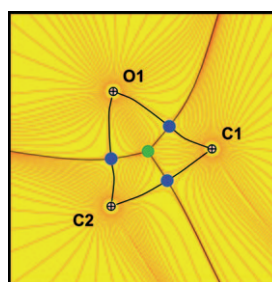


DNA Nanoarrays

Advances in DNA conjugation offer new building blocks for the design of nanoarrays based on DNA self-assembly. DNA networks can act as a template for organizing inorganic molecular units with interesting intrinsic properties to introduce nanometer-scale features to the system. In their Concept on page 12780 ff., E. Defrancq and S. Ghosh describe the synthetic approaches developed so far for the formation of structurally diverse metal-oligodeoxyribonucleotide supramolecular assemblies, together with some recent applications.

Bond Theory

In their Communication on page 12818 ff., S. Grabowsky et al. introduce an electron localizability indicator (ELI) based on an X-ray diffraction experiment by means of the X-ray constrained wavefunction fitting procedure. As a first application, the electronic nature of the epoxide ring could be enlightened: The ELI clearly indicates outwardly bent bonds according to the Förster–Coulson–Moffitt model, which could not be derived unambiguously from the electron density.



Liquid Crystals

A series of C_2 -symmetric, 10,11-disubstituted dibenzosuberane-based helicenes that contain a 7-bromo- α -tetralin-based fragment are described by C.-T. Chen et al. in their Full Paper on page 12822 ff. Photoisomerization of the diastereomerically pure compound in hexane led to virtually exclusive formation of the opposite M -form diastereomer (P/M , $<1: >99$) at 290 nm. Doping the helicene into a nematic liquid crystal led to a cholesteric mesophase with modulated pitches (i.e., modulated color of a refracted light), reversible helical senses, and a switch memory of ternary logic.

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