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Lithium Ion Batteries

Review by J. Cho, P. G. Bruce et al.

Silyl Ketene Imines

Minireview by S. E. Denmark and T. W. Wilson

Highlights: Boron-Containing π -Conjugated Materials · 5'-Deoxyadenosyl

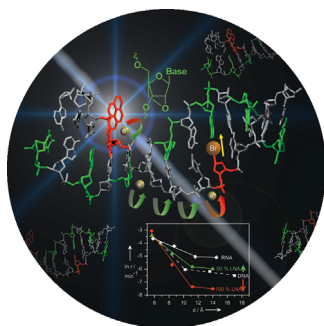
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Cover Picture

Daniel H. Scharf, Pranatchareeya Chankhamjon, Kirstin Scherlach, Thorsten Heinekamp, Martin Roth, Axel A. Brakhage, and Christian Hertweck*

*The pathogenic fungus *Aspergillus fumigatus* produces the infamous toxin, gliotoxin. In their Communication on page 10064 ff., C. Hertweck and co-workers elucidate a key step in the biosynthesis of the transannular disulfide bridge that is indispensable for the deleterious effects of gliotoxin. A single enzyme, GliI, is capable of concomitantly cleaving two C–S bonds in a bis(cysteinyll) adduct, to yield a dithiol, ammonia, and pyruvate. Electron micrograph kindly provided by J. Schmalzer-Ripcke, Jena.*

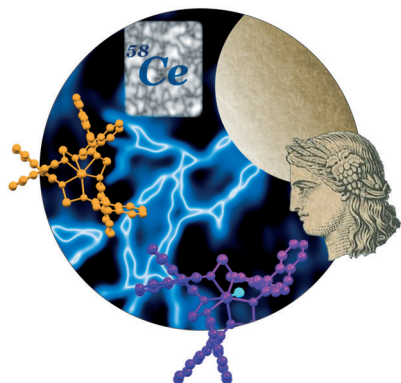
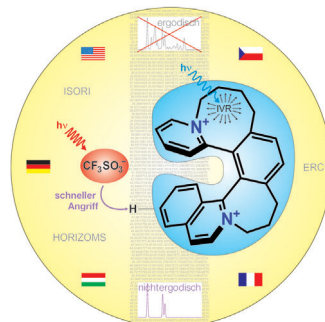


Electron Transfer in DNA

LNA units in LNA:DNA hybrids result in a negative effect on electron transfer, but they also force the nucleic acid structure into better base stacking. In their Communication on page 10026 ff., H. A. Wagenknecht et al. describe the balancing act between the two effects.

Non-ergodic Behavior

Infrared spectroscopy of mass-selected ion pairs shows that the intramolecular distribution of the vibrational energy is incomplete in some species. As shown by D. Schröder et al. in their Communication on page 10050 ff., the effect leads to local “overheating”.



Redox Chemistry of Rare Earths

In their Communication on page 10159 ff., P. J. Walsh, E. J. Schelter, and co-workers report alkali-metal/cerium heterobimetallic complexes that modulate ligand reorganization, which allows for the prediction of reaction products.