

A Journal of the Gesellschaft Deutscher Chemiker

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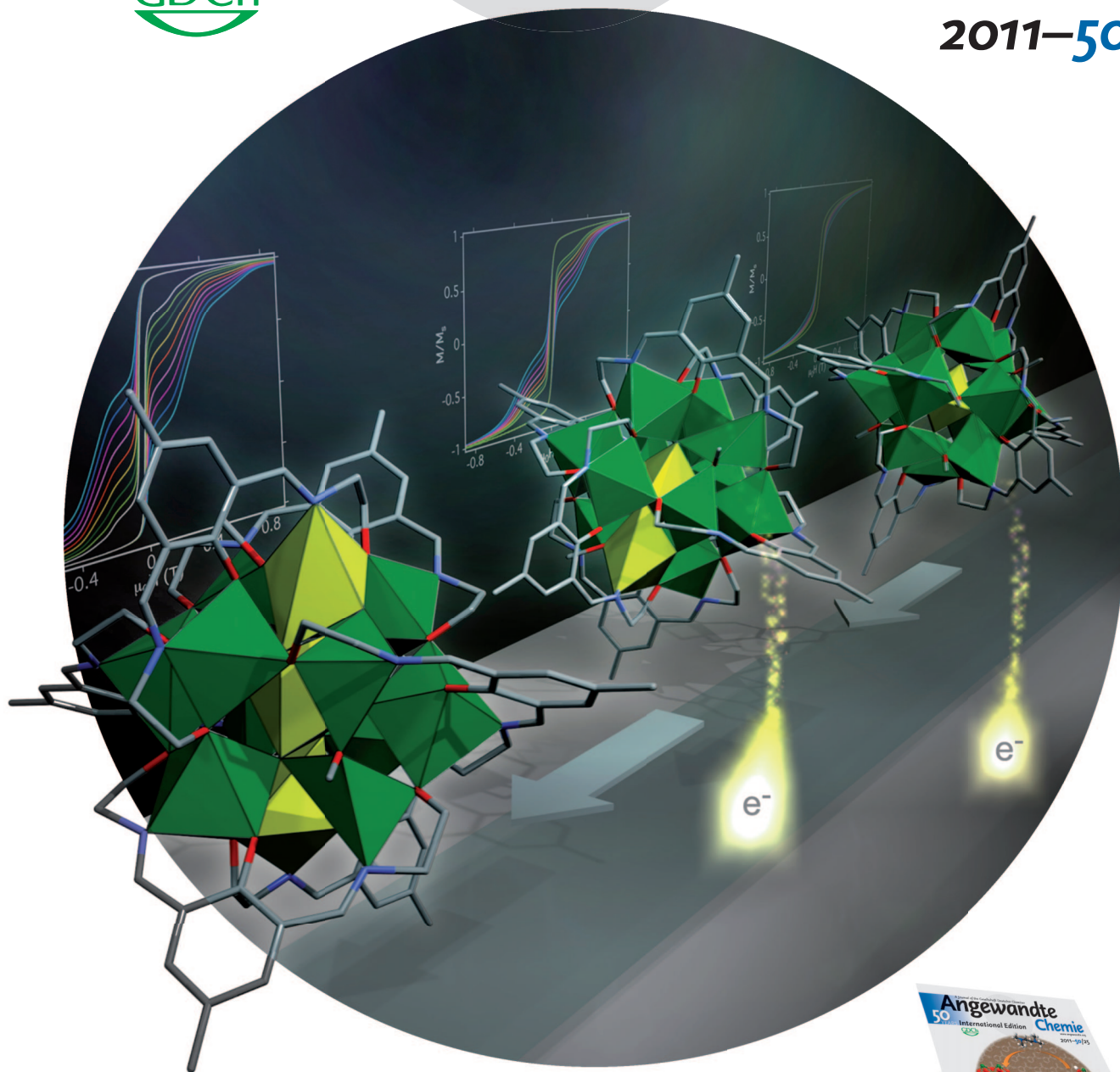
Angewandte Chemie

50 YEARS International Edition



www.angewandte.org

2011–50/25



Nitrosocarbonyl Compounds

M. J. Miller and B. S. Bodnar

In Vivo Solid-Phase Microextraction

J. Pawliszyn et al.

Highlights: Crystal Structure Prediction • Parent Heavy Methylenes

ACIEFS 50 (25) 5587–5772 (2011) · ISSN 1433–7851 · Vol. 50 · No. 25



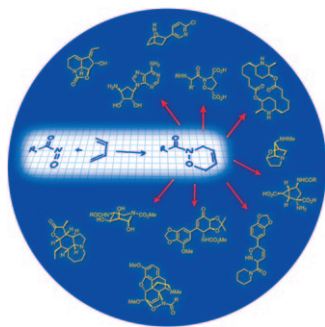
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Cover Picture

Graham N. Newton, Satoshi Yamashita, Koen Hasumi, Junzo Matsuno, Norifumi Yoshida, Masayuki Nihei, Takuya Shiga, Motohiro Nakano, Hiroyuki Nojiri, Wolfgang Wernsdorfer, and Hiroki Oshio*

Manganese oxide nanoclusters with α -Keggin-type cores and redox-tunable magnetic behavior were synthesized by H. Oshio et al. In their Communication on page 5716 ff., they report that the clusters could be oxidized in one-electron steps, leading to increases in the single-molecule-magnetic properties. The image shows the transition from a $\{\text{Mn}_{13}\}^{4+}$ species through $\{\text{Mn}_{13}\}^{5+}$ to $\{\text{Mn}_{13}\}^{6+}$ and the changes in the resultant hysteretic responses.

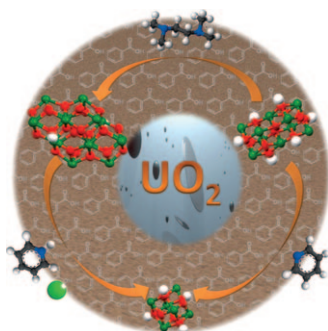
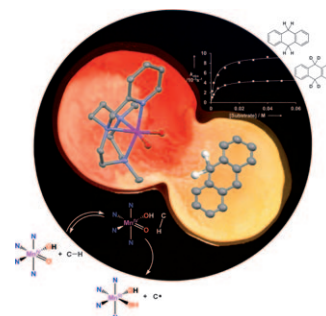


Synthetic Methods

Nitrosocarbonyl hetero-Diels–Alder (HDA) reactions lead directly and stereospecifically to 3,6-dihydro-1,2-oxazines, which can be transformed into biologically active molecules. The Review from M. J. Miller and B. S. Bodnar on page 5630 ff. provides numerous examples.

Reactivities of C–H Bonds

The relative reactivities of C–H bonds in two Mn^{IV} complexes do not correlate with their bond dissociation energies, as described by M. Costas et al. in the Communication on page 5648 ff.



Uranium Clusters

In their Communication on page 5745 ff., M. Mazzanti et al. present a reproducible method for the synthesis of low-valent uranium clusters. Benzoic acid is used to promote formation, and cluster size can be tuned by the choice of solvent and base.