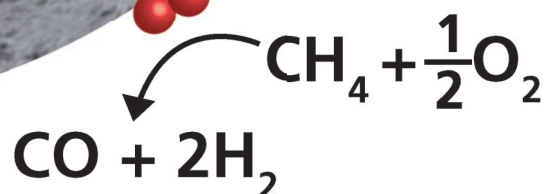
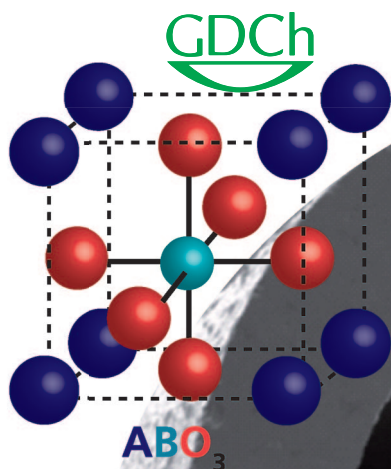


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Redox Economy

P. S. Baran, R. W. Hoffmann, N. Z. Burns

Artificial Photosynthesis

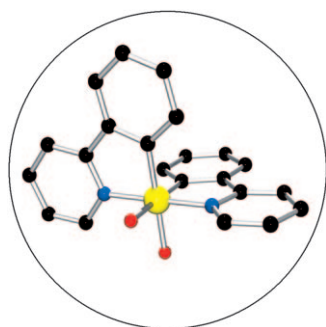
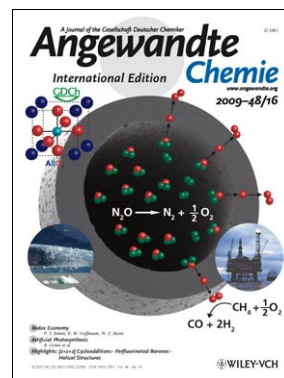
A. Llobet et al.

Highlights: [2+2+2] Cycloadditions • Perfluorinated Boranes • Helical Structures

Cover Picture

Heqing Jiang, Haihui Wang,* Fangyi Liang, Steffen Werth, Thomas Schiestel, and Jürgen Caro*

Hollow fiber membranes from mixed-conducting perovskites can separate oxygen selectively from gas mixtures. Wall thicknesses as low as 150 μm can be obtained by a wet spinning process, and oxygen fluxes are thereby obtained that are relevant for technical applications. In their Communication on page 2983 ff., H. Wang, J. Caro and co-workers describe the complete decomposition of nitrous oxide with such membranes. This method offers new opportunities to reduce emissions of this greenhouse gas.

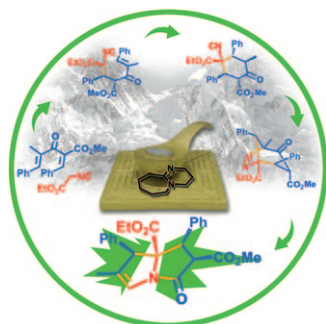
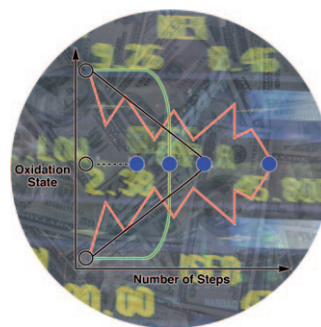


Artificial Photosynthesis

The use of molecular complexes as catalysts for the oxidation of water is discussed by A. Llobet and co-workers in their Minireview on page 2842 ff. Initial attempts to generate supported molecular catalysts for this reaction are also presented.

Synthesis Planning

In their Review on page 2854 ff., P. S. Baran, R. W. Hoffmann, and N. Z. Burns discuss an often-overlooked form of synthetic economy, namely redox economy: the use of as few redox steps as possible in the synthesis of a target molecule. Guidelines are given as to how the redox economy in multistep synthetic sequences can be improved.



Tandem Reactions

X. Xu, Q. Liu and co-workers show in their Communication on page 2868 ff. that one C–N and three C–C bonds along with four adjacent stereocenters can be formed with excellent atom economy in the synthesis of pyrrolizidines.