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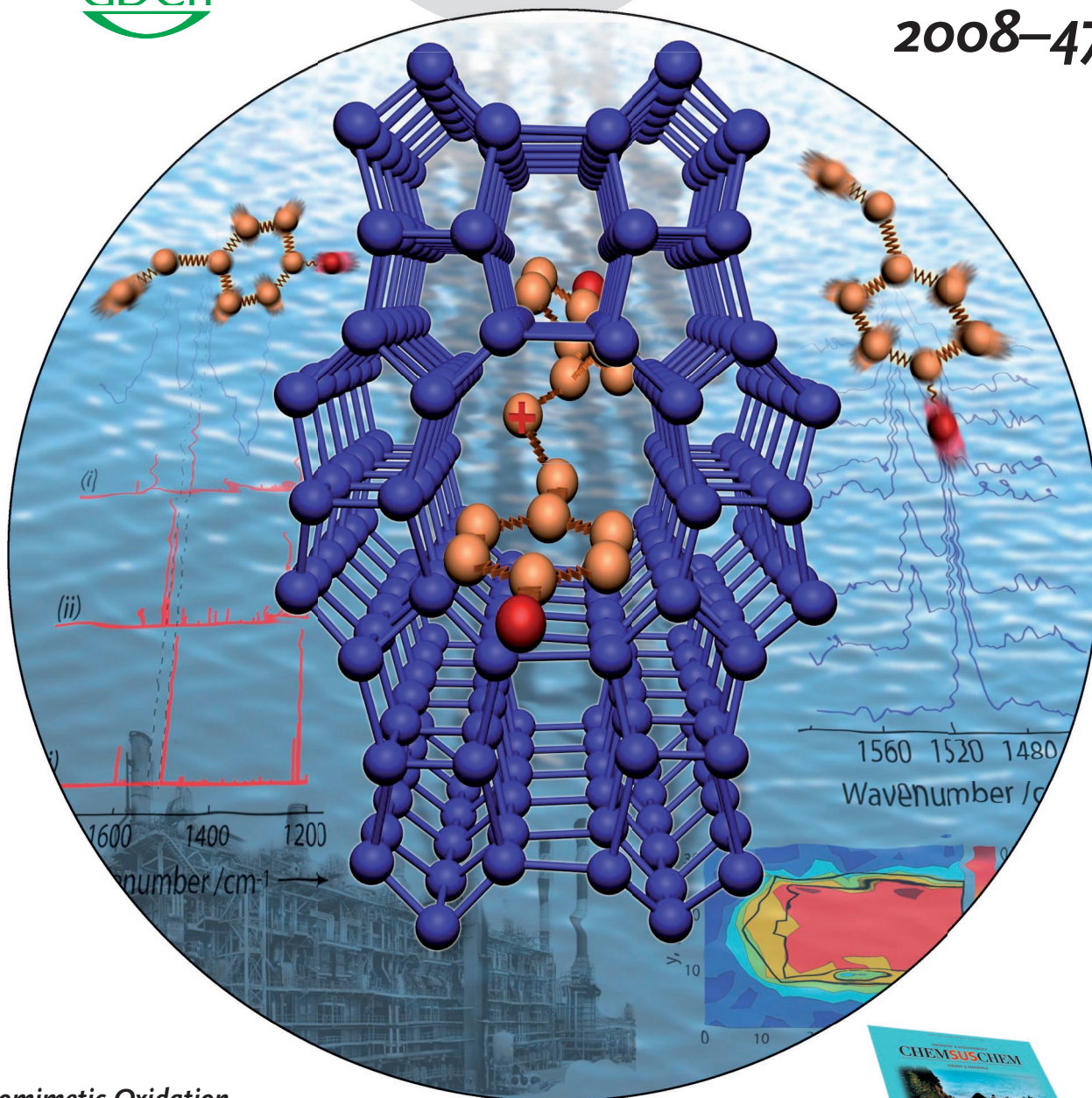
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Biomimetic Oxidation

J.-E. Bäckvall and J. Piera

Reactions at Surfaces (Nobel Lecture)

G. Ertl

The Discovery of Lyrica

R. B. Silverman

**Oxazaborolidine-Catalyzed Enantioselective Cycloadditions ·
Ionically Cross-Linked Gold Clusters**

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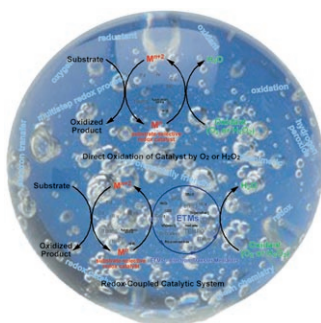
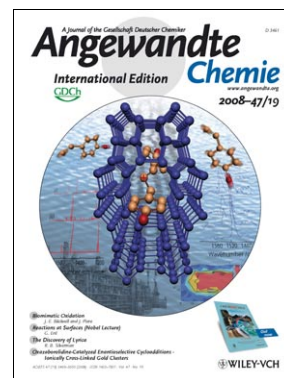


 **WILEY-VCH**

Cover Picture

Eli Stavitski, Marianne H. F. Kox, Ingmar Swart, Frank M. F. de Groot, and Bert M. Weckhuysen*

Heterogeneous catalysis through infrared goggles: In their Communication on page 3543 ff., B. M. Weckhuysen and co-workers use synchrotron-based IR microspectroscopy with diffraction-limited spatial resolution to map the catalytic activity of ZSM-5 zeolite crystals in styrene oligomerization and identify the carbocationic reaction products entrapped in zeolite pores. They propose a combined three-pronged microspectroscopic approach for in-depth spatially- and time-resolved characterization of catalytic processes taking place within catalyst grains.

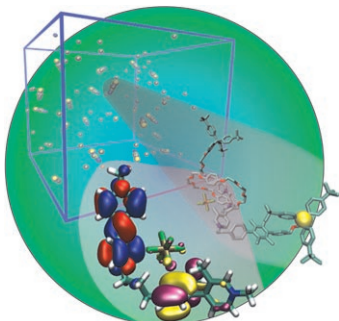
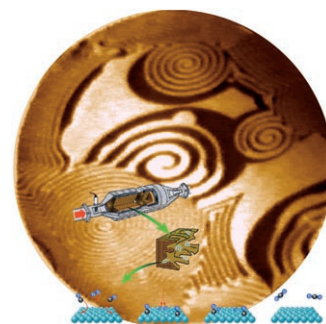


Oxygen as an Oxidant

J.-E. Bäckvall and J. Piera describe in their Review on page 3506 ff. how the combination of transition-metal catalysts and electron-transfer mediators enable the use of oxygen or hydrogen peroxide as oxidants.

Elementary Reaction Steps (Nobel Lecture)

In the Review on page 3524 ff., G. Ertl describes for a broad audience his research on heterogeneous catalysis, for which he was awarded the 2007 Nobel Prize in Chemistry. The synthesis of ammonia and automotive catalytic converters are used as examples.



Rotaxanes

Fast-switching nanomachines can exist in solution. Raiteri, Credi et al. show in their Communication on page 3536 ff. by using free-energy calculations that ring displacement in a photocontrollable molecular shuttle may occur on the nanosecond timescale.