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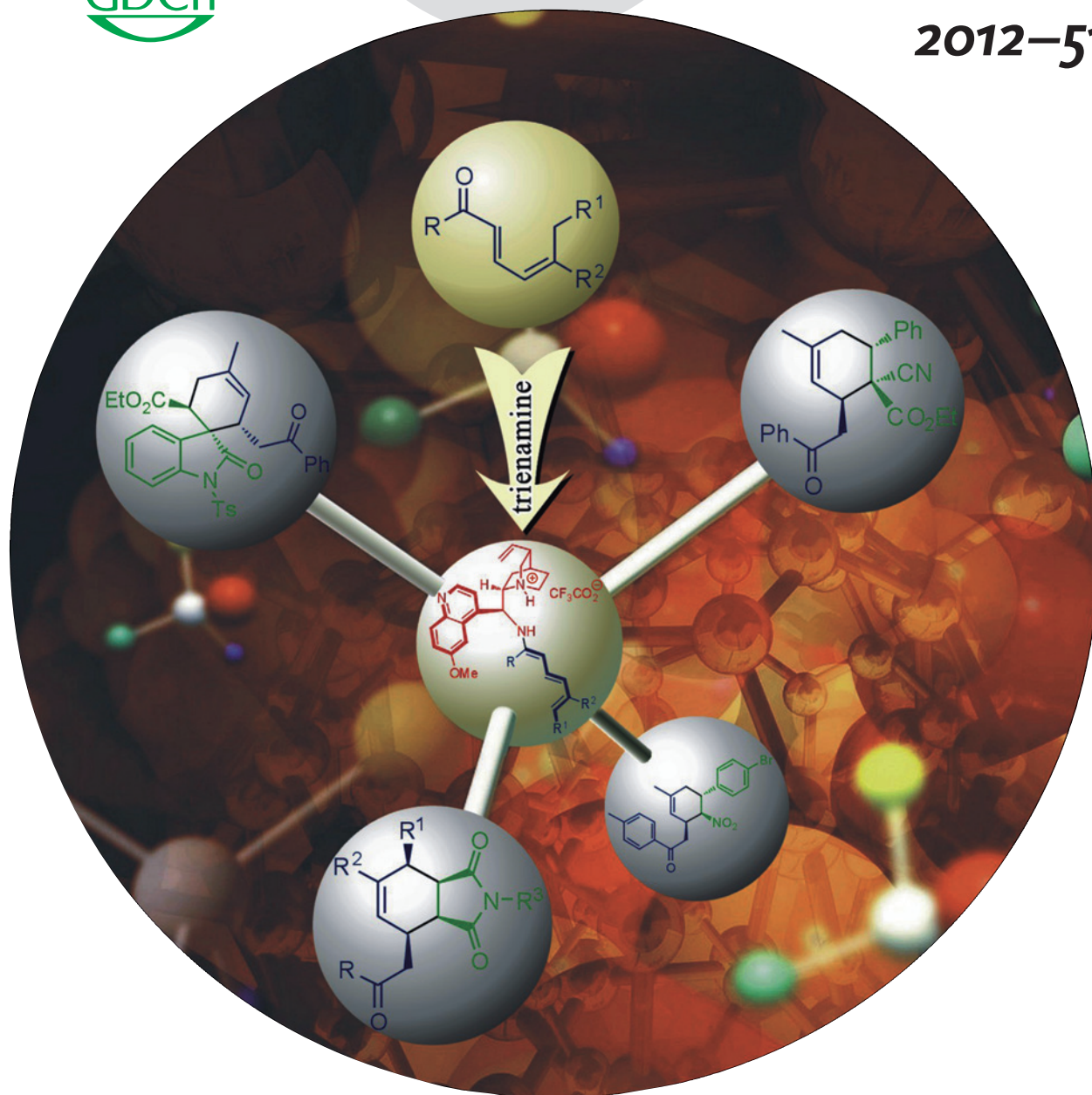
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Total Synthesis of Strychnine

Review by L. E. Overman and J. S. Cannon

Rare-Earth Metal Hydrides

Minireview by A. Simon

**Highlights: Molecular Machines · Adaptable Materials ·
Planar Molecules with High Coordination Numbers**

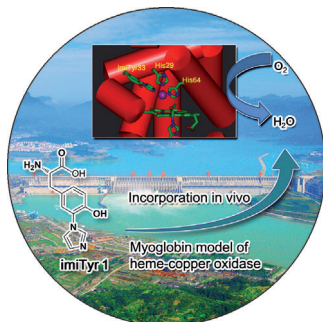
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Cover Picture

Xiao-Feng Xiong, Quan Zhou, Jing Gu, Lin Dong, Tian-Yu Liu, and Ying-Chun Chen*

An asymmetric Diels-Alder cycloaddition of δ,δ -disubstituted 2,4-dienones by trienamine catalysis with cinchona-based primary amines has been developed. In their Communication on page 4401 ff., Y.-C. Chen and co-workers show that a wide range of electron-deficient dienophiles were tolerated in this reaction to afford multifunctional cyclohexene derivatives with excellent stereoselectivity.

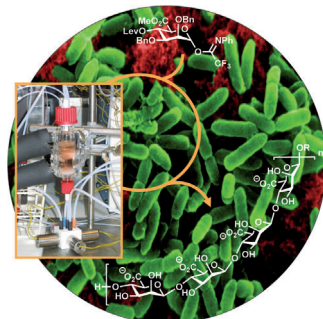
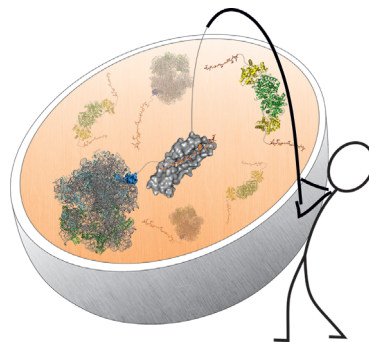


Enzyme Models

The genetic incorporation of the amino acid imiTyr, which mimics a Tyr—His cross-link, into a myoglobin model of heme-copper oxidase (HCO) to give a functional HCO model is reported by Y. Lu, J. Wang et al. in their Communication on page 4312 ff.

Protein Purification

The noncovalent interaction between protein subunits derived from type 1 pili of *E. coli* forms the basis of a new affinity purification method described by R. Glockshuber and co-workers in their Communication on page 4474 ff.



Carbohydrates

In their Communication on page 4393 ff. G. A. van der Marel, J. D. C. Codée, and co-workers describe how mannuronic acid alginate fragments with up to 12 *cis*-mannosidic linkages can be prepared in multi-milligram quantities in a fully automated fashion.