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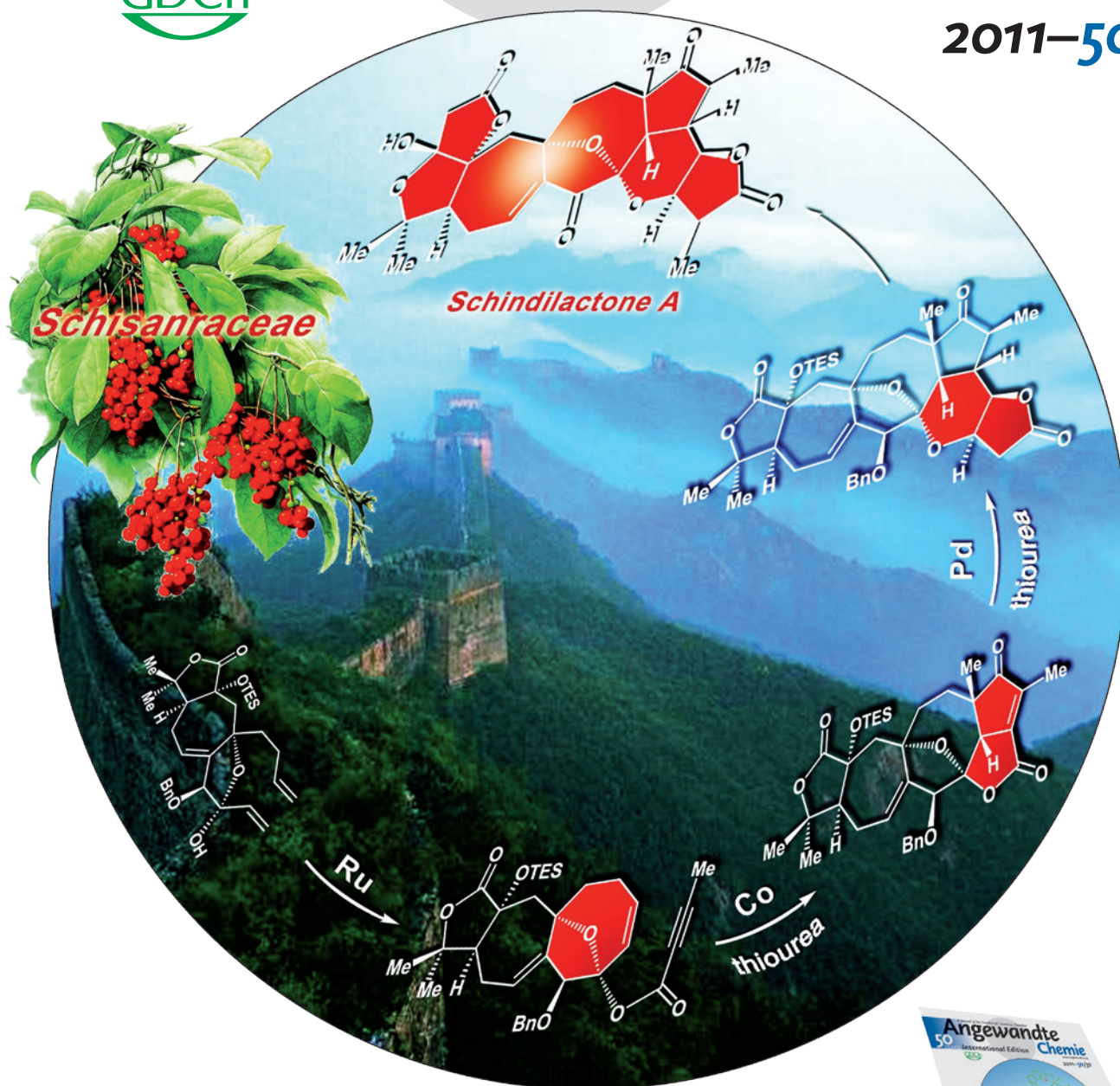
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Catalytic Water Splitting

V. Artero, M. Fontecave, and M. Chavarot-Kerlidou

Gold Catalysis

X. Li and J. Xiao

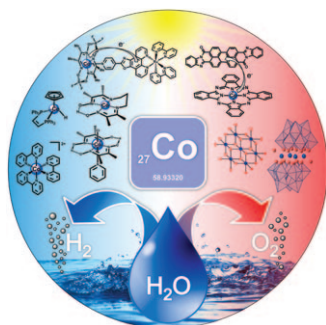
Highlights: Nanorobots • Residual Dipolar Couplings



Cover Picture

Qing Xiao, Wei-Wu Ren, Zhi-Xing Chen, Tian-Wen Sun, Yong Li, Qin-Da Ye, Jian-Xian Gong, Fan-Ke Meng, Lin You, Yi-Fan Liu, Ming-Zhe Zhao, Ling-Min Xu, Zhen-Hua Shan, Ying Shi, Ye-Feng Tang,* Jia-Hua Chen,* and Zhen Yang*

A *traditional Chinese herbal medicine* schindilactone A, has been synthesized for the first time by Y.-F. Tang, J.-H. Chen, Z. Yang, and co-workers. In their Communication on page 7373 ff., they outline an approach involving ring-closing metathesis for diastereoselective formation of the fully functionalized eight-membered CDE rings, a thiourea/cobalt-catalyzed Pauson–Khand reaction for the stereoselective construction of the F ring, and a thiourea/palladium-catalyzed carbonylative annulation cascade to construct the GH rings.

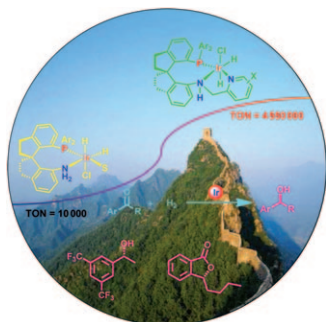
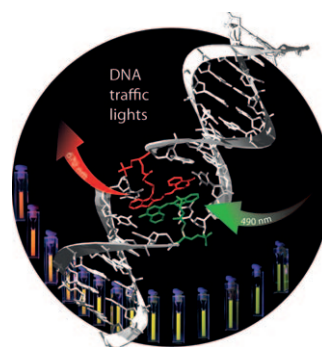


Catalytic Water Splitting

Established systems that split water to form hydrogen are based on noble-metal catalysts. In their Review on page 7238 ff., M. Fontecave et al. present systems that use cobalt compounds, which achieve this task preferentially in a photocatalytic process with (sun)light as the energy source.

Molecular Beacons

In their Communication on page 7268 ff., H.-A. Wagenknecht and C. Holzhauser introduce a molecular beacon with color readout. Energy transfer between two chromophores in the DNA stem architecture yields a red fluorescence that changes to green upon binding to the target oligonucleotide sequence.



Chiral Catalysts

In their Communication on page 7329 ff., J.-H. Xie, Q.-L. Zhou, and co-workers describe an exceptionally active and highly enantioselective chiral iridium catalyst for ketone hydrogenation.