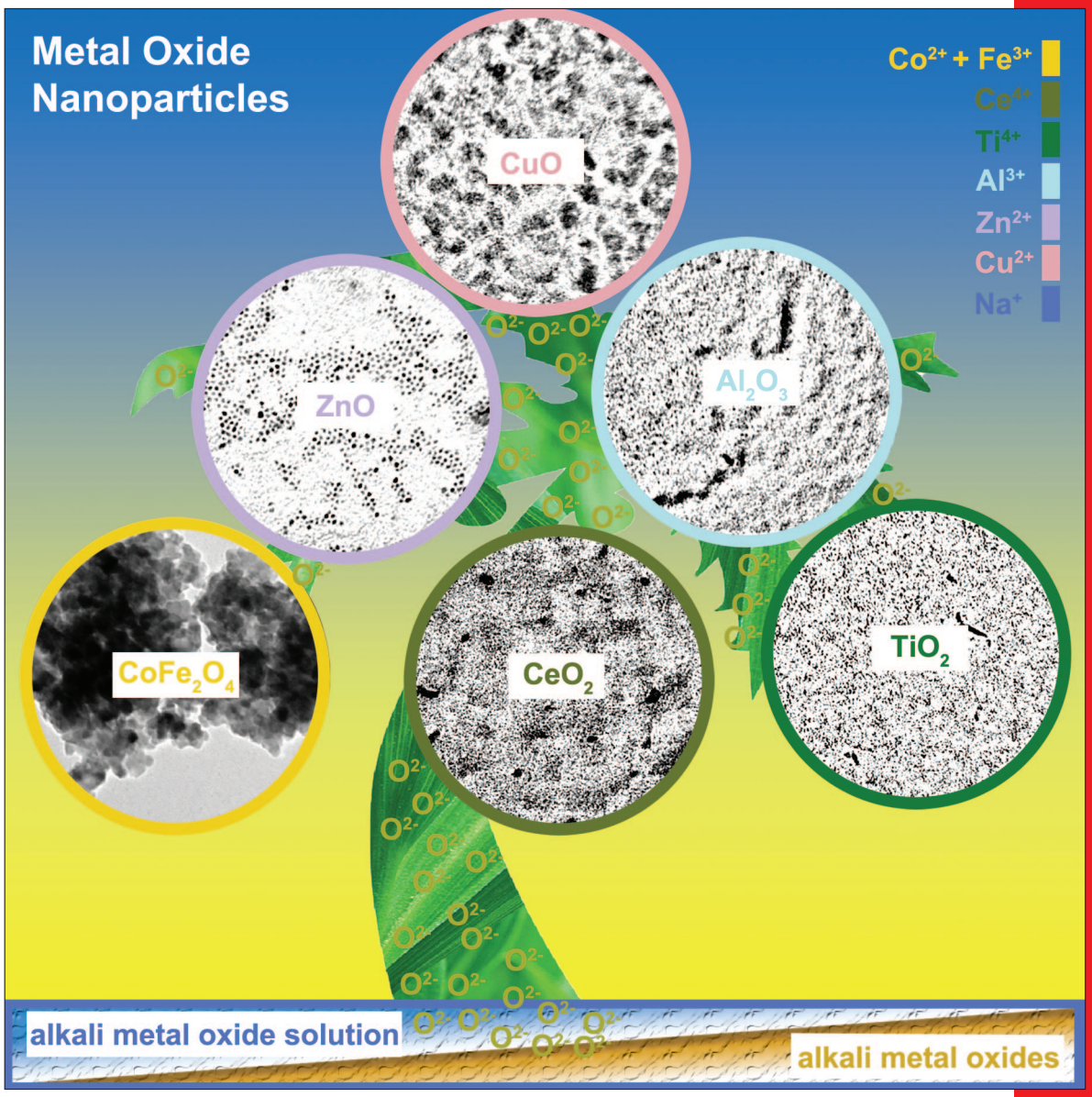
# CHEMISTRY

## A EUROPEAN JOURNAL

15/2 2009




**Concept**

Metal-Catalyzed One-Step Synthesis: Towards Direct Alternatives to Multistep Heterocycle and Amino Acid Derivative Formation

B. A. Arndtsen



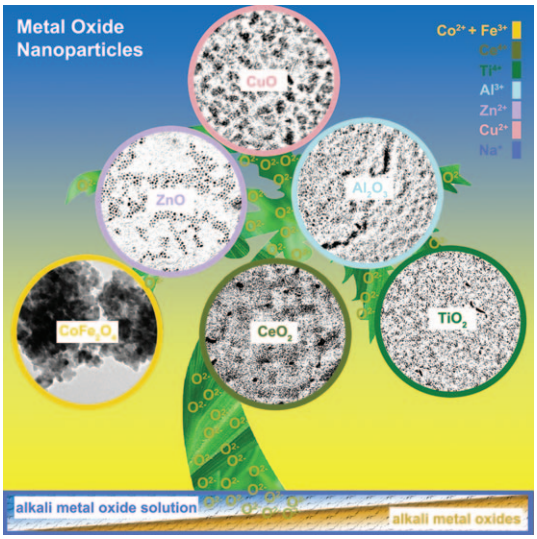

WILEY-VCH

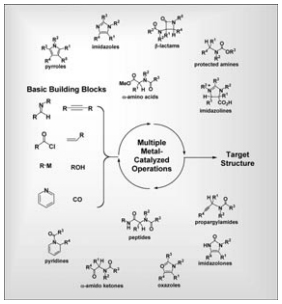
CEUJED 15 (2) 285–552 (2009) · ISSN 0947-6539 · Vol. 15 · No. 2 · 2009

www.chemeurj.org

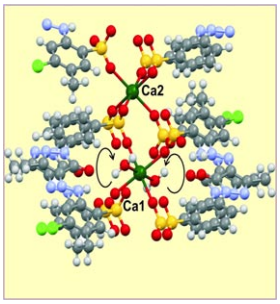
CHEMISTRY
A EUROPEAN JOURNAL

… provides a novel route to produce nanoscale oxide materials in an inexpensive and highly efficient way. This has been explained pictorially by M. A. Morris et al. on page 440 ff. using an oxide 'tree': Oxide anions are released from the 'pool' (alkali metal oxides serve as the oxide ion source) and are absorbed by the 'root' of the 'tree' and then transferred via the 'trunk' to form the 'fruits' (metal oxide nanoparticles) at the top of the 'tree'. The different colors refer to the different condensation states of each oxide.

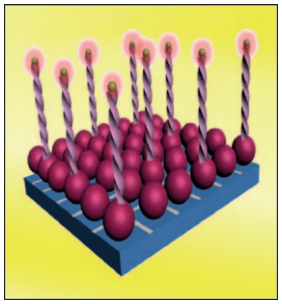



**Multicomponent Reactions**
In the Concept article on page 302 ff., B. A. Arndtsen demonstrates how the reactivity of transition-metal catalysis can be exploited to build up families of useful products in a single step from available building blocks. These reactions rely upon an array of metal-based reactions to occur in a sequential fashion in order to selectively bring these units together. By gaining an understanding of each of these steps, and the various side reactions within these transformations, selective metal-catalyzed routes to a broad range of products can be developed.




**X-ray Diffraction**
In their Communication on page 338 ff., M. U. Schmidt et al. show that crystal structures, even of molecular salts with unknown water content, can be solved from a laboratory X-ray powder data measured in a routine manner.



**Gold Nanoparticles**
The frontispiece picture shows an artist's view of the nanoparticle surface-energy transfer (NSET) probe for sensing hepatitis C virus RNAs, which can serve as a nanoscopic ruler for improving crucial analytical criteria, such as detection limits, sensitivity, selectivity, and dynamic range relative to commercial systems; see the Full Paper by P. C. Ray et al. on page 342 ff. for more details.

