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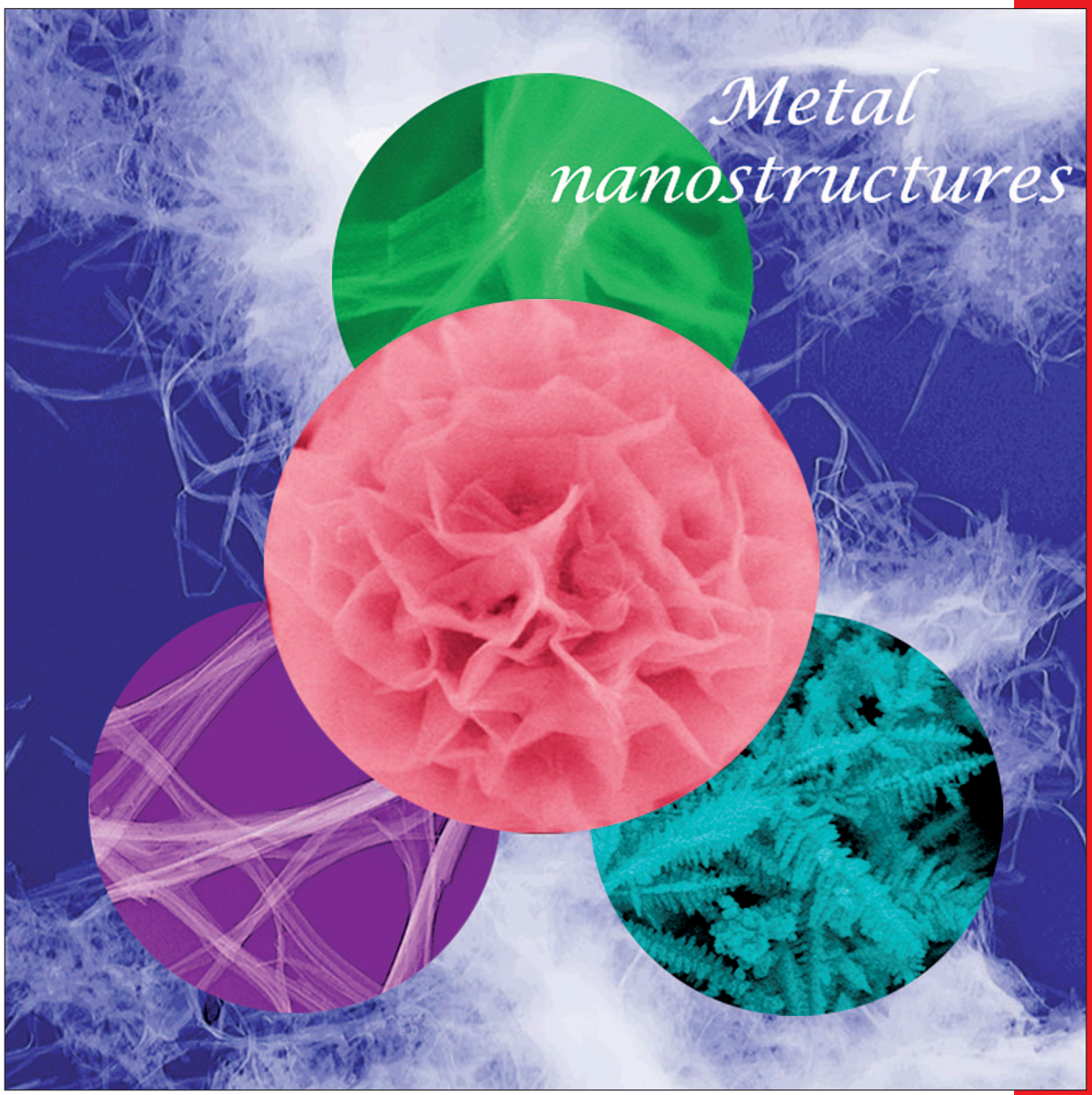

A Journal of

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Concept

Kinetic Isotope Effects in Asymmetric Reactions

M. P. Meyer and T. Giagou

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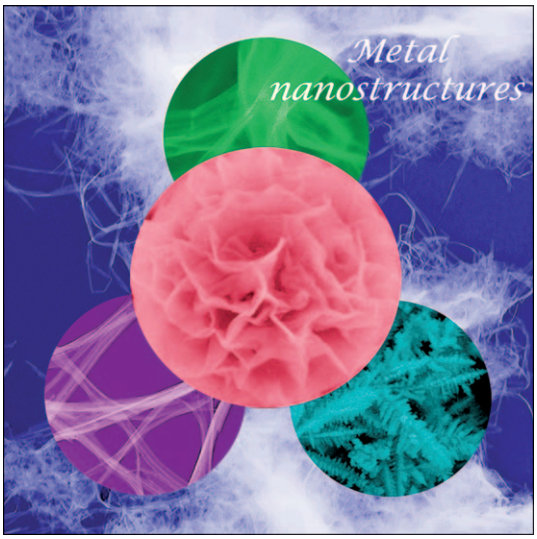
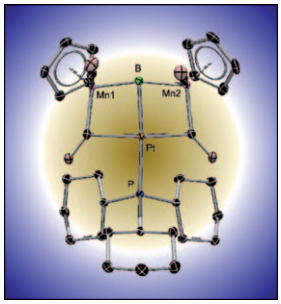
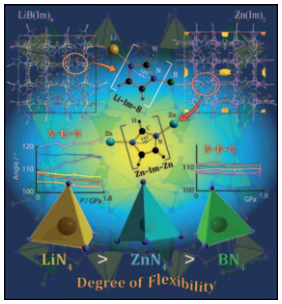
... into a conventional replacement reaction for the large-scale synthesis of various metal nanostructures have been described in the Communication of X. Sun et al. on page 10630 ff. Further, the growth processes of various metal nanostructures (e.g., Ni) have been systematically investigated, and the key factors in their morphological and structural control have been proposed and discussed in detail.



Reaction Mechanisms
In their Concept article on page 10616 ff., M. P. Meyer and T. Giagou discuss the role of steric and electronic effects in stereocontrol. They explore the way in which kinetic isotope effects serve as useful points of contact with computational models of transition structures and also future opportunities for kinetic isotope effects to play a role in asymmetric catalyst development.

Metalloborylene Complexes
An unprecedented direct synthetic approach for T-shaped trimetalloborides, that is, the addition of late-transition-metal bases to the boron center of a metalloborylene species, is reported by H. Braunschweig et al. in their Communication on page 10635 ff. Particularly interesting is the finding that not only neutral, but also anionic metalloborylenes are susceptible to the formation of dative metal–boron bonds, despite a certain nucleophilic character of the boron atom.





Mechanical Properties of ZIFs
Porosity or flexibility—what determines the mechanical properties of zeolitic imidazolate frameworks (ZIFs)? The Young's modulus, hardness, and bulk modulus of two dense, anhydrous ZIFs have been elucidated by using high-pressure synchrotron X-ray diffraction, density functional calculations, and nanoindentation studies. The differential behaviour of the two topologically identical materials is discussed in terms of their pore volumes and tetrahedron flexibility. For more details see the Full Paper by A. K. Cheetham et al. on page 10684 ff.