

Foreword

Eight review papers from the broad range of amination reactions have been selected in this issue of *Catalysis Today*. The common feature of all contributions is that a homogeneous or heterogeneous catalyst is used for the synthesis of amines. This collection is not meant to be a comprehensive survey. Our aim is rather to identify promising aspects and provide a critical perspective of the catalytic amination reactions.

The topics covered are synthesis of methylamines, heteroaromatic and aromatic amines, long chain aliphatic amines, chiral amines and amino acids, as well as the amination of olefins, diols and polyols. Various types of selectivities and the development of new or improved materials to meet the selectivity requirements are the key points of the papers. For example, a product composition far from the equilibrium, but demanded by the market, has been achieved in the synthesis of methylamines over shape-selective zeolites. On the other hand, amazing enantiomeric excesses up to 90–100% have been achieved recently in the homogeneously catalyzed asymmetric hydroge-

nation of prochiral amines by proper design of the chiral ligands of metal complexes.

The level of scientific understanding of these processes are quite different. In some instances, the present state of our knowledge is sufficiently mature to supporting the industrial application. In others, only the first important steps have been made in a promising route, but the careful presentation of the state-of-the-art may encourage some scientists to test their own ideas.

Finally, we would like to thank the authors of this special issue. All have worked hard to deliver contributions which should be of interest to readers working in industry or academia. We hope that this issue will stimulate further development of research on catalytic amination.

Tamas Mallat and Alfons Baiker
*Department of Chemical Engineering and
Industrial Chemistry
Swiss Federal Institute of Technology
Zurich, Switzerland*