



Preface to special issue on heterogeneous chiral catalysis

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Producing and purifying enantiopure chemicals is a topic of immense practical significance. Worldwide sales of enantiopure pharmaceutical exceeded \$150 billion in 2002, and this figure continues to grow steadily [1]. Phenomena associated with chirality also hold great intrinsic scientific fascination. Pasteur's famous crystallization of enantiomers of tartrate salts was recently judged by the American Chemical Society to be the "most beautiful" chemical experiment in history [2]. Understanding the implications of the homochirality of life on Earth, and the associated implications for searching for life elsewhere in the universe, pose a deep scientific puzzle [3].

The papers in this issue give a snapshot of current efforts to understand and exploit chirality in heterogeneous catalysis, broadly interpreted. Two primary themes can be identified amongst these papers. A number of papers examine issues associated with creating chiral catalysts by attaching chiral modifiers to active heterogeneous catalysts. Although enantioselective catalysts made by this route have been known for some time, understanding the origins of their

enantioselectivity and seeking means to generalize or optimize their properties remain topics of active research. A second theme that has emerged more recently is to study inorganic surfaces that are themselves chiral [4]. A variety of papers in this issue explore phenomena associated with these intrinsically chiral surfaces.

We appreciate the efforts of both the authors and reviewers who contributed to the production of this special issue. We hope that it will serve as a useful introduction to current progress in heterogeneous chiral catalysis for newcomers to this field and as a tool for cultivating fertilization between the disparate areas that can contribute to this topic.

References

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