

Editorial

Phase-Transfer Catalysis Special Feature Section

Welcome to the second Phase Transfer Catalysis (PTC) special feature section, the last one having taken place in 2008, and an endeavor that we now expect to occur biennially. Practical interest in how PTC can facilitate existing transformations has grown dramatically over the past 40 years, as a simple perusal of the patent literature reveals. In reviewing the breadth of chemistry that this special section encompasses, it is still impressive just how diverse are the areas that PTC touches. In many ways, PTC is particularly well suited for *Organic Process Research & Development* as the chemistry has been useful in so many different industrially relevant areas, such as the synthesis of pharmaceuticals, polymers, and peptides, to exploit but one letter of the alphabet. We anticipate that nearly all of our readers will find something in this issue that crosses one of their experiences with PTC. My (J.P.) own first memory of this area extends back to 1979 when I was a grad student at Columbia and I read about a remarkably simple means to synthesize cyclopropyl rings. When I ran the experiment by adding chloroform, caustic, and benzyltriethylammonium bromide (TEBA) to the olefinic substrate that I was using, like magic, my little dichlorinated rings appeared once dichlorocarbene formed, and I have been a devotee ever since of PTC.

The embarrassingly simple and forgiving conditions typically used in PTC contribute to the ubiquity of the chemistry and the widespread nature of its applications. When little more than a cheap catalyst, readily available reagents, and water are needed, even novice chemists are seduced into trying the art. However, this is not to say that results are automatic; the best outcomes still arise from creative insight and hard work. In this issue, note the research by Kevin Belyk to prepare over a hundred derivatives of cinchona-derived PTC catalysts, looking for the best asymmetric cyclopropanation to a key antiviral

intermediate. In addition, do not skip Keiji Maruoka's sleek asymmetric conjugate additions catalyzed by modified binaphthyl PTCs to make quaternary centers in high enantioselectivity, to name but two examples of what follows. While most anyone can achieve results quickly, the clever and observant chemist is still needed to tease out optimal outcomes.

We thank all the authors in this special issue, many of whom had to first fulfill obligations at their day jobs but still managed to send a viable manuscript to us on time. We are grateful for your generosity in time, dedication, and energy. We also acknowledge the remarkable work our reviewers accomplished for this issue in carefully reading the first drafts, improving the manuscripts, and ensuring the papers were approved in time for the issue. Quite literally, this issue would not be possible without their efforts.

We hope you enjoy this issue and that it inspires you to try something new that we can read about in the 2012 special issue on PTC.

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