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Preface

Microwaves in organic chemistry

At the start of 2006, it is hard not to find an example of a microwave-promoted transformation when looking through the contents of a new issue of a synthetic organic chemistry journal like Tetrahedron. This shows how the technique has caught on within the community and is finding applications in topics as diverse as natural product synthesis, peptide synthesis and nanoparticle preparation. Chemists are finding that, by using microwave heating, it is possible to reduce reaction times from hours to minutes and, in many cases, increase product yields. In addition, and very excitingly, it is becoming an enabling technology, opening up new avenues for synthesis.

Alongside development of new synthetic procedures, the field of microwave-promoted synthesis also relies on equipment development. While much of the early work was performed using domestic microwave ovens, today there is apparatus designed for use in preparative chemistry. This has improved reproducibility, safety and allows for a wide range of different chemistries to be performed.

It is fitting that this Symposium-in-Print comes in the 20th anniversary of the publication of the first reports of microwave heating as a tool for synthetic organic chemistry. It brings together articles written by diverse groups from across the world and highlights some of the areas at the forefront of modern microwave-promoted synthesis. In addition to papers from research groups in academia, there are

contributions from industry. Topics presented include medicinal chemistry, microarray synthesis, reaction scale-up, chemistry in hot water, transition-metal catalysis and polymer synthesis.

I would like to thank all the authors in this Symposium-in-Print for their contributions and the reviewers for their helpful comments. I also thank Professor Harry Wasserman for the kind invitation to edit this issue and for his advice and comments along the way. Rich Davis from CEM Microwave Technology is acknowledged for the cover art. Finally, I hope that the papers here will stimulate further development of microwave-promoted synthesis. With the interest from academic and industrial sectors, together with the inherent advantages they bring, it is not difficult to imagine the day when every chemist will have a microwave at their bench rather than a hotplate or oil bath.

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