

PREFACE TO VOLUME 89

The Prefaces to Volumes 76, 80, and 84 highlighted the enormous impact of transition metal catalysis in synthetic organic chemistry. Three of the last 14 Nobel Prizes in Chemistry have been awarded for the discovery and development of transition metal catalyzed reactions that fundamentally changed the practice of organic synthesis (2001: reduction/oxidation (Knowles, Noyori and Sharpless); 2005: olefin metathesis (Chauvin, Grubbs, Schrock); 2010: cross coupling (Heck, Negishi, Suzuki)). Of the 17 chapters published in the *Organic Reactions* series since the diamond anniversary Volume 75 (2011), 12 have involved transition metal catalyzed transformations! The impact of catalysis using transition metal complexes and reagents on the practice of synthetic organic chemistry cannot be overstated and continues to grow exponentially. In fact, the research in this field is so intense that the resulting literature quickly becomes too massive to compile in the comprehensive fashion characteristic of *Organic Reactions*.

Of the three major topics celebrated by Chemistry Nobel Prizes, reduction/oxidation as well as cross-coupling are well-represented in the volumes of *Organic Reactions*. However, not surprisingly given the vast literature in the field, no chapter on any aspect of olefin metathesis has appeared. In fact, such a chapter had been commissioned more than a decade ago when it was still conceivable to cover one of the more important versions of olefin metathesis in organic synthesis, namely ring-closing metathesis (RCM). However, that chapter languished as the author changed locations and the literature ballooned. Much to my amazement, shortly after beginning my tenure as Editor in Chief, that author expressed renewed interest in completing the chapter and true to his word, Volume 89 comprises the results of those heroic efforts.

Dr. Larry Yet has composed the most definitive review of the family of olefin ring-closing metathesis reactions ever to appear in the literature. Despite the appearance of literally dozens of journal reviews, book chapters, and encyclopedia entries, this contribution stands out for its comprehensive coverage of ring-closing metathesis reactions that create carbocycles, heterocycles, macrocycles, supramolecular assemblies, and polypeptides. In view of the enormous number of synthesis endeavors that construct natural products and therapeutic agents, Dr. Yet has provided an extensive overview of how RCM has revolutionized the ability to disconnect target molecules in fundamentally different ways. Some of the most recent advances in ring-closing metathesis such as enantioselective processes using chiral catalysts, solid phase transformations, and tandem metathesis reactions are covered as well. True to the spirit of *Organic Reactions* chapters, Dr. Yet has provided critical guidance for the selection of an appropriate catalyst for a given class of substrate and important insights in the role of olefin substitution for the most successful pairwise combination of addends.

Volume 89 represents the eleventh single chapter volume to be produced in our 74-year history. Such single-chapter volumes represent definitive treatises on extremely important chemical transformations. The organic chemistry community owes an enormous debt of gratitude to the authors of such chapters for the generous contribution of their time, effort, and insights on reactions that we clearly value. Moreover, this volume also represents the largest single chapter ever produced in the *Organic Reactions* series and we are very grateful to Anita Lekhwani and her colleagues at Wiley for their assistance in accommodating this massive work in a single bound volume.

It is appropriate here to acknowledge the expert assistance of the entire editorial board, in particular André Charette who shepherded this massive chapter to completion. The contributions of the author, editors, and the publisher were expertly coordinated by the board secretary, Robert M. Coates. In addition, the *Organic Reactions* enterprise could not maintain the quality of production without the dedicated efforts of its editorial staff, Dr. Linda S. Press, Dr. Danielle Soenen, and Ms. Dena Lindsey. Insofar as the essence of *Organic Reactions* chapters resides in the massive tables of examples, the author's and editorial coordinators' painstaking efforts are highly prized.

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