

---

## Volume Editor's Preface

*“The word difficulty must not be  
thought to exist for a man of intellect.  
Get rid of it.”*

Georg Christoph Lichtenberg (1742–1799),  
Professor of Mathematics and Physical  
Sciences at the University of Göttingen

May this volume of *Science of Synthesis*, which covers the chemistry of compounds all having the formal oxidation state of carboxylic acids, help the research chemists in industry and academia to understand and creatively apply the vast knowledge in this area that has been accumulated in the last 125 years. Most of the subclasses of these compounds with formally three carbon–heteroatom bonds gain their importance from being valuable synthetic intermediates en route to more complex organic molecules which may show beneficial biological activity or have important materials properties. Thus, the four classes of compounds in this volume (allenes with two geminal heteroatom substituents, alkenes with two geminal heteroatom substituents, acetylenes with one or two heteroatom substituents), which are subdivided into up to 19 subclasses, do not only compile the most important methods for the preparation of all the subclasses, but also discuss their applications as synthetic building blocks. Wherever necessary, relevant examples of such further synthetic transformations are presented at the end of a given section. This is intended to guide the user in finding totally new applications and furthering our chemical inventory.

I have been deeply impressed by the professionalism and great care that the managing editor Dr. Fiona Shortt de Hernandez and her competent team of scientific editors, copy editors, and artwork producers at Thieme have put into the production of this book. It is essentially due to their permanent efforts that this quality product could come about, and I am grateful for all their support. Of course, I am deeply indebted to all 23 authors, who have done the major part of this work; without their initiative and commitment this volume would not have been produced. Finally, I would like to thank Prof. Dr. Ernst Schaumann and Dr. Joe P. Richmond, who convinced me some time ago that editing this volume would be a worthwhile undertaking.

### Volume Editor

Armin de Meijere

Göttingen, December 2005