



Preface

This work on stereoselective synthesis is not about a particular type of reaction or class of catalysts, but shines light on a specific structural issue from different points of view. Quaternary stereocenters, being fully substituted asymmetric carbon centers, are a challenging task for synthetic organic chemists, as is already indicated in the subtitle of this book. In contrast to tertiary stereocenters, where a wide variety of chiral auxiliaries, reagents and catalysts nowadays form the basis for modern asymmetric synthesis and are a guarantee for high selectivity, the construction of a quaternary stereocenter remains the touchstone of every enantioselective procedure.

This book collects review articles from authors with different scientific backgrounds and thus a different focus on quaternary stereocenters in synthetic targets. Most of the chapters concentrate on a specific type of reaction or methodology, with the relevant authors chosen for their expertise in this area. The chapters do not aim to cover the topic comprehensively, but rather the authors have compiled highlighting examples that reflect their personal choice. Some of the chapters are based on a liberal definition of a quaternary stereocenter, since they also include tertiary alcohols, ethers, or amines. All of the chapters include intentionally diastereoselective reactions, in some cases even kinetic resolutions, alongside enantioselective procedures.

We hope that this monograph will be considered a reader for organic chemists with different backgrounds. The focus on quaternary stereocenters will guide the reader through different areas of stereoselective synthesis, starting with an overview on natural compounds and important industrial products, and ending with modern concepts of biotechnology.

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