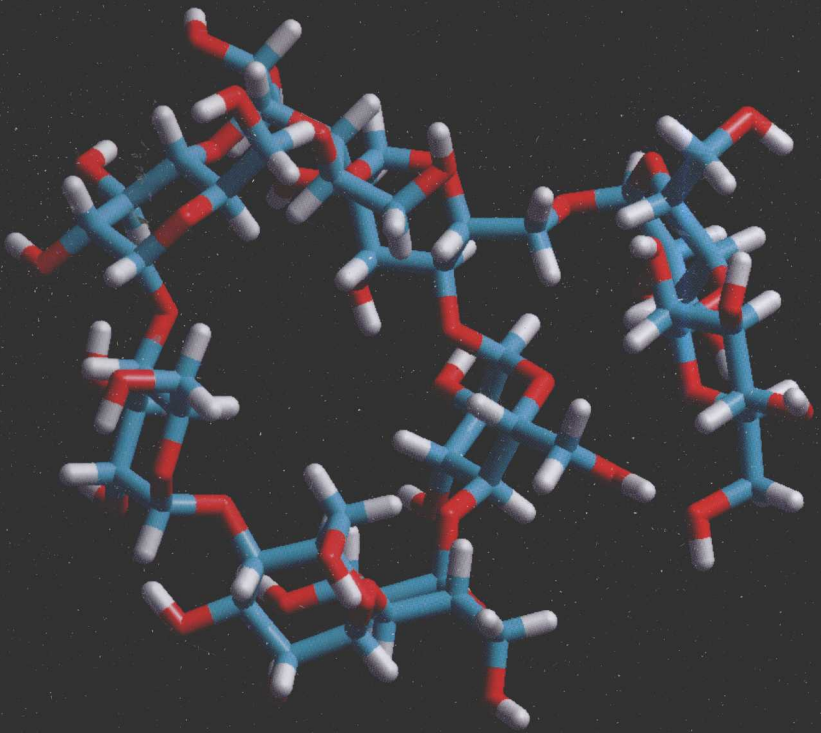
Zheng-Yu Jin



CYCLODEXTRIN CHEMISTRY

Preparation and Application

Chemical Industry Press

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PREFACE

Cyclodextrins (sometimes called cycloamyloses) are a family of compounds made up of sugar molecules bound together in a ring (cyclic oligosaccharides). Cyclodextrins, produced from starch by means of enzymatic conversion, can form inclusion complexes with a considerable number of organic and inorganic compounds. The formation of inclusion complexes can markedly modify the physicochemical parameters of the guest molecule, adsorption capacity, polarity, hydrophobicity, etc. They are used in food, pharmaceutical, cosmetic and chemical industries, as well as in agriculture and environmental engineering, supermolecule and analytical chemistry.

Many developments have occurred in the world of cyclodextrins preparations, analyses, derivatives and applications since "cellulosine" was first described by Villier in 1891. Research in my group centers around the synthesis, analysis and application of branched and large cyclodextrins. The idea towards production of *Cyclodextrin Chemistry* germinated in 2007, and the actual writing started only when *Cyclodextrin Chemistry: Preparation and application (Chinese)* was published in 2009. I was pleased to see this book through to completion. *Cyclodextrin Chemistry* reviews processes, enzymes and analyses for preparing cyclodextrins and cyclodextrin derivatives, and their application in industrial and non-industrial areas. The big focus of this English edition was to do a general update, adding many new methods and topics. *Cyclodextrin Chemistry* will be a standard reference book for those working in the cyclodextrin area.

I am grateful to all the chapter authors for agreeing to be a part of this project. Many authors have drawn on their experiences with cyclodextrins. I wish to thank the authors of articles and books and their publishers for their permission to reproduce materials used here. Special thanks are extended to the following persons: Yao-Qi Tian and Xing Zhou for valuable discussions about the content

of the book and assistance with editing; Xue-Ming Xu for inputs that helped determine content; Junrong Huang for word processing assistance.

Zheng-Yu Jin
Wuxi, Jiangsu, China
March 2012

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This book skillfully brings together the work of many contributors who are experts in their respective cyclodextrin areas. It would not have been possible without their assistance and contributions. We are grateful to them for their participation and patience during the preparation of each chapter. We hope that readers will find this book useful. Our special thanks are also to our academic institutions, Jiangnan University and Shanxi University of Science and Technology for allowing us to dedicate our effort and time to the completion of this book and to our editors at Chemical Industry Press, Gang Wu and Yu-Qing Zhao, for supporting and coordinating the production of the book and their invaluable patience to answer our endless questions about the final proofing of the book. Overall, we could not finish such a task without the unconditional support of our families, so our most grateful thanks go to all of them.

Zheng-Yu Jin
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CONTENTS