

Preface

Model Systems in Catalysis: Single Crystals to Supported Enzyme Mimics

The idea for this book was born out of a discussion with Dr. Ken Howell and Professor Gabor Somorjai at the American Chemical Society meeting in San Francisco. The concept of the book was simple – combine all aspects of “model” heterogeneous catalysts in one book. It seemed simple at the time, but turned out to be a larger undertaking than I originally anticipated. However, in the end, I am very proud of the 23 chapters you are about to read. This book is a first of its kind, and a must for any chemist, chemical engineering, physicist, or materials scientists working in heterogeneous catalysis or surface science.

During the compilation of this book, an important member and friend of the catalysis and surface science community, J. Mike White (University of Texas, Austin and Pacific Northwest National Laboratory) suddenly passed away. Mike was to author two chapters in this book, “*Photocatalysis at Adsorbate-Single Crystal Metal and Metal Oxide Interfaces*” and “*Supported Early Transition Metal Oxide Clusters: Structural and Catalytic Properties*.” It is truly unfortunate that we will not be able to read his chapters; they would have been first rate. I thank Professor Hicham Idriss for including a section on photocatalysis on TiO₂ single crystals in Chap. 7 and Professors Günther Rupprechter and Simon Penner for their chapter on metal oxide cluster catalysis (Chap. 17).

There are a number of people that I need to thank for all their efforts without whom this book would have never happened. First and foremost, I need to thank Dr. Ken Howell for his unwavering support, mentorship, and most of all, patience. I would like to thank Professor John T. Yates, Jr. for writing the Foreword. John is an expert in many of the topics discussed in this book, and in my mind, the foremost authority to comment on the diverse set of chapters contained within. All of the authors are commended for their hard work in completing an outstanding selection of chapters. Each chapter in the book was peer-reviewed by at least two individuals and I must thank the 50+ reviewers for their efforts. Lastly, I need to thank my wife,

Julie, and son, Lincoln, for their unwavering support and patience during this project.

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