

Preface

I turned my attention to dental friction and wear when I chatted with a dentist in 1998. In fact, human teeth are the masticatory organ and therefore subjected to friction and wear functionally every day under a complex oral environment and loading condition. What makes human teeth adequate to serve for a lifetime in the mouth with complex physical and chemical processes has been a puzzle, which initially motivated us to get through the work presented in this book focusing on dental wear. Dental wear is one of the most important parts of and also on the leading edge of biotribology. However, the benefit of its achievements is far beyond the recent studies. The accumulation of the scientific knowledge about human teeth can provide invaluable insights into the developments of advanced dental materials, oral practices, archaeology and also stimulate the bionic design by transferring the antiwear properties of human teeth into engineering antiwear systems. I believe in next decades that more researchers will be involved and will usher in significant progress in dental wear research.

The present book is a research snapshot of my group in the last a few decades together with a summary of the literature. I am grateful to the contribution to the work from my postdoctorate, Dr. Hong Li. Additionally, I would like to express my appreciation for the valuable help from some graduate students: Dan Yang, Mao-Yu Shi, Ming Wen, and Shan-Shan Gao, in collecting documents and preparing the figures. In addition, this book is deeply indebted to the National Natural Science Foundation of China for its financial aid.

I hope that the information presented in the book will be of interest to clinical dentists, engineering tribologists, and materials researchers. I also hope that readers of this book may, if they are not doing so already, be stimulated to work in this fascinating field.

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Dental Biotribology

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