

Preface

Model-based fault diagnosis is a vital field in the research and engineering domains. In the past years since the publication of this book, new diagnostic methods and successful applications have been reported. During this time, I have also received many mails with constructive remarks and valuable comments on this book, and enjoyed interesting and helpful discussions with students and colleagues during classes, at conferences and workshops. All these motivated me to work on a new edition.

The second edition retains the original structure of the book. Recent results on the robust residual generation issues and case studies have been added. Chapter 14 has been extended to include additional fault identification schemes. In a new chapter, fault diagnosis in feedback control systems and fault-tolerant control architectures are addressed. Thanks to the received remarks and comments, numerous revisions have been made.

A part of this book serves as a textbook for a Master course on *Fault Diagnosis and Fault Tolerant Systems*, which is offered in the Department of Electrical Engineering and Information Technology at the University of Duisburg-Essen. It is recommended to include Chaps. 1–3, 5, 7 (partly), 9, 10, 12–15 (partly) in this edition for such a Master course. It is worth mentioning that this book is so structured that it can also be used as a self-study book for engineers in the application fields of automatic control.

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