



Edition: 1st Edition 2021
pages: 232
Images: 534
Cover: Hardcover, 21,6 x 28 cm
ISBN: 978-1-64724-051-6
Published: June 2021

Quintessence Publishing Company, Ltd.

📍 Grafton Road
KT3 3AB New Malden, Surrey
United Kingdom

☎ +44 (0)20 8949 6087

📠 +44 (0)20 8336 1484

✉ info@quintpub.co.uk

🌐 <https://www.quintessence-publishing.com/gbr/en>

Book information

Editor: Panayi, Nearchos C.
Title: Customized Orthodontic Appliances
Subtitle: Theory, Design, Application
Short text:

Since its recognition as the first specialty of dentistry, the practice of orthodontics has been influenced by the development of new materials, techniques, bracket designs and prescriptions, appliances, and software. However, never before has there been as revolutionary a change as digitization. Digitization and automation are transforming the entire landscape of how orthodontics is practiced, and the consequence is the “do it yourself” concept. With the technology available today with intraoral scanning, CBCT imaging, and CAD software, we can create the virtual patient and manipulate dental models virtually. Not only does this enable better and more precise treatment planning, but it also facilitates better communication with the patient. Perhaps most exciting is that it permits in-house designing and printing of the majority of orthodontic appliances. This book describes the current digital technology that is used in orthodontics, including volume and surface scanning, 3D printing, CAD software, and artificial intelligence, before delving into a “design it yourself” guide presenting the application of this technology in all aspects of orthodontic treatment. It describes all the necessary technologic ingredients to be used in a self-sufficient digital orthodontic clinic, and it focuses on the in-house design and production of tailor-made appliances by digitally diagnosing and evaluating the virtual patient and then creating an individualized treatment plan. Now you can design your own expanders, retainers, clear aligners, brackets, indirect bonding trays, and even wires with a wire-bending robot. It is incredible what technology has to offer; we just have to have the courage to learn and experiment with it. For the benefit of our patients, the challenge is laid.

Contents

Chapter 1. Introduction
Rafi Romano

3D Technology in Orthodontics

Chapter 2. CBCT in Orthodontics
Apostolos I. Tsolakis, Christos Angelopoulos, Nearchos C. Panayi, Kostas Tsiklakis
Chapter 3. Surface Scanning
George Michelinakis
Chapter 4. Additive Manufacturing
Nearchos C. Panayi, Gkiazouris Ioannis, Spyridonas Efstathiou
Chapter 5. Orthodontic Office Digital Workflow
Moshe Davidovitch, Nearchos C. Panayi

3D Applications in Orthodontics

Chapter 6. In-House Custom Appliance Design
Nearchos C. Panayi, Apostolos I. Tsolakis
Chapter 7. Custom Appliance Design with the Laboratory
Santiago Isaza, Stefano Negrini
Chapter 8. In-House Customized Orthodontic Brackets: UBrackets Software
Nearchos C. Panayi
Chapter 9. In-House Customized Lingual Orthodontic Appliances
Chris Riolo
Chapter 10. In-House Clear Aligners
Nearchos C. Panayi, Mavrikis Manolis, Evangelos Akli
Chapter 11. In-House Digital Indirect Bonding

Nearchos C. Panayi, Moshe Davidovitch, Riccardo Nucera

Chapter 12. In-House Orthognathic Surgical Splints

Federico Hernández Alfaro, Adaia Valls Ontañón

The Future of Orthodontics

Chapter 13. In-House Orthodontic Archwire-Bending Robots

Alfredo Gilbert

Chapter 14. Artificial Intelligence and Machine Learning in Orthodontics

Rosalia Leonardi, Cristina Grippaudo, Silvia Allegrini, Ambrosina Michelotti

Contributors

Evangelos Akli • Federico Hernández Alfaro • Silvia Allegrini • Christos Angelopoulos •
Moshe Davidovitch • Spyridonas Efstathiou • Alfredo Gilbert • Ioannis Gkiazouris •
Cristina Grippaudo • Santiago Isaza • Rosalia Leonardi • Manolis Mavrikis • George
Michelinakis • Ambrosina Michelotti • Stefano Negrini • Riccardo Nucera • Adaia Valls
Ontañón • Nearchos C. Panayi • Chris Riolo • Rafi Romano • Kostas Tsiklakis •
Apostolos I. Tsolakis

Categories: [Orthodontics](#)