



Edition: 1st Edition 2019  
pages: 256  
Images: 390  
Cover: Hardcover, 21 x 28 cm  
ISBN: 978-1-78698-026-7  
Stock No.: BL083  
Published: December 2018

**Quintessence Publishing Company, Inc.**

 411 North Raddant Road  
Batavia  
Illinois IL 60510  
United States of America

 +1 (0)630 / 736-3600

 +1 (0)630 / 736-3633

 [contact@quintbook.com](mailto:contact@quintbook.com)

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

## Book information

**Authors:** Irfan Ahmad / Fahad Al-Harbi  
**Title:** 3D Printing in Dentistry 2019/2020

**Short text:**

**A digital impression**  
**A virtual design**  
**A 3D-printed restoration**  
**A bioprinted bone scaffold**  
**The future of dentistry is here!**

Exciting, innovative and unimaginable - 3D printing offers all this and more...

Thirty years ago, the invention by Charles Hull of SLA (stereolithographic apparatus), or 3D printing, began a revolution in the way dentistry is practised today and will be in the future. Furthermore, 3D printing is not limited to dentistry; its impact is already being felt in many diverse industries, from aerospace to food processing. The paradigm shift from subtractive to additive manufacturing is gathering momentum and delivering products with microprecision and functionality, while at the same time reducing the carbon footprint. 3D printing is a technology that cannot be ignored. However, as with any new technology, the accompanying technophobic inertia is unavoidable. The purpose of this book is to ease the pain, infuse enthusiasm, and help the profession to take a dip, or even a plunge, into uncharted waters.

Backed by scientific credence, *3D Printing in Dentistry 2019/2020* takes the reader on a journey to demystify the latest trends in digital dentistry; not only 3D printing, but the entire digital dental workflow, including intra-oral scanners, 3D printers, 3D materials, and CAD/CAM processes. The text, accompanied by numerous high-quality full-colour illustrations, furnishes the reader with information about the evolution of 3D printing and simplifies the complex technology behind it, relating it to daily dental practice. In the first section, the fundamental concepts of several revolutionary breakthroughs are discussed, while the second section presents clinical case studies that apply 3D printing in a variety of dental modalities and disciplines. However, as with so much technology that promises the world, a degree of caution is required. While the virtues of 3D printing are extolled, its limitations are also critiqued.

To summarise, *3D Printing in Dentistry 2019/2020* is an original and enticing book describing the state of the art of 3D printing in dentistry today. The book is also a "stem cell" for the incredible possibilities that lie ahead.

**Contents:**

**Section 1 - Basic Concepts**

**Chapter 1. Historical Perspective and Technology**

- Historical Perspective
- Technology of 3D Printing

**Chapter 2. Intra-oral Digital Acquisition**

- 3D Surface Imaging Technologies
- Intra-Oral Scanners (IOS)
- Commercial IOS

**Chapter 3. Other Digital Acquisition Methods**

- Extra-oral Scanners (EOS)
- Intra-oral Scanners (IOS) vs. Extra-oral Scanners (EOS)
- Facial Scanning
- Cone Beam Computed Tomography (CBCT)

**Chapter 4. Computer-aided Design (CAD)**

- Real World to a Digital World
- CAD Software
- 3D File Formats

#### **Chapter 5. Dental CAD**

- Generic CAD (G-CAD) Software
- Dedicated Dental CAD (D-CAD) Software

#### **Chapter 6. Printers and Materials**

- Rationale for 3D Printing
- 3D Printers for Dentistry
- Materials for 3D Printing

#### **Chapter 7. Dental Applications and Digital Workflow**

- Dental Applications
- Digital Workflow

#### **Section 2 - Clinical Case Studies**

#### **Chapter 8. Surgical**

- Implant Treatment Planning
- Surgical Template (Guide) for an Implant-supported Crown
- Surgical Template (Guide) for an Implant-supported Over-denture

#### **Chapter 9. Orthodontics**

- Mild Spacing
- Imbrication

#### **Chapter 10. Prosthodontics**

- Maxillary Central Incisor Crown
- Mandibular Molar Crown
- Maxillary Central Incisor Crowns
- Maxillary FPD

#### **Chapter 11. Smile Design**

- Tenets of Smile Design
- Virtual Smile Design
- Rehabilitating Pink and White Aesthetics

#### **Chapter 12. Restorative**

- Class IV Cavities
- Class IV Direct RBC Restoration

**Categories:** General Dentistry, Dental Technology, Digital dentistry