# Table of Contents

Foreword ............................................................................................................................................. xix

Preface ................................................................................................................................................ xxii

Acknowledgment .............................................................................................................................xxviii

## Volume I

### Section 1

#### Evolution of the T-Scan Technology

**Chapter 1**
History of the T-Scan System Development from 1984 to the Present Day.............................. 1

*Robert B. Kerstein, DMD, Former Clinical Professor at Tufts University School of Dental Medicine, USA & Private Dental Practice Limited to Prosthodontics and Computerized Occlusal Analysis, USA*

**Chapter 2**
The Limitations of Traditional Non-Digital Occlusal Indicators When Compared to the T-Scan Computerized Occlusal Analysis Technology ..............................................................................36

*Sarah Qadeer, BDS, MSD, Thammasat University, Rangsit Campus, Thailand*

**Chapter 3**
Precision and Reliability of the T-Scan III System: Analyzing Occlusion and the Resultant Timing and Distribution of Forces in the Dental Arch .................................................................65

*Bernd Koos, University Medical Center Schleswig-Holstein, Germany*

### Section 2

#### The T-Scan 8 System

**Chapter 4**
T-Scan 8 Recording Dynamics, System Features, and Clinician User Skills ...............................95

*Robert B. Kerstein, DMD, Former Clinical Professor at Tufts University School of Dental Medicine, USA & Private Dental Practice Limited to Prosthodontics and Computerized Occlusal Analysis, USA*

*Robert Anselmi, McGill University, Canada*
Section 3
Clinical Use Technologies That Complement the T-Scan System in Daily Dental Practice

Chapter 5
Adding Technology to Diagnostic Methods ................................................................. 153
   John C. Radke, BM, MBA, BioResearch Associates, USA

Chapter 6
Joint Vibration Analysis (JVA) ..................................................................................... 215
   Ray M. Becker, DDS, FAGD, International Certifying and Interpretation Instructor of the
   Total BioPAK System, Private Practice, USA

Chapter 7
Employing T-Scan Synchronized with Electromyography to Treat Chronic Occluso-Muscle
Disorder ............................................................................................................................. 269
   Robert B. Kerstein, DMD, Former Clinical Professor at Tufts University School of Dental
   Medicine, USA & Private Dental Practice Limited to Prosthodontics and Computerized
   Occlusal Analysis, USA

Section 4
Occlusal Trauma and Computerized Occlusal Analysis

Chapter 8
Occlusal Considerations in the Hypersensitive Dentition ............................................ 358
   Nick Yiannios, DDS, Private Practice, USA

Chapter 9
Detecting and Quantifying Cervical Dentin Hypersensitivity Using Air Indexing Combined with
the T-Scan System ............................................................................................................ 429
   Thomas A. Coleman, DDS, Private Practice, USA

Chapter 10
The Management of Advanced Tooth Wear Using the T-Scan/BioEMG Synchronization
Module .............................................................................................................................. 467
   Teresa Sierpińska, Medical University of Bialystok, Poland

Volume II

Section 5
The Clinical Applications of Computerized Occlusal Analysis

Chapter 11
Orthodontic T-Scan Applications ................................................................................ 523
   Julia Cohen-Levy, DDS, MS, PhD, Private Practice, France
Chapter 12
Digitalized Implant Occlusion with the T-Scan System .........................................................562
   Jinhwan Kim, DDS, MS, PhD, Seoul National University, South Korea & OneDay Dental
   Clinic, South Korea & Theodental Ltd., South Korea

Chapter 13
Computerized Occlusal Analysis in Occlusal Splint Therapy ..............................................602
   Roger Solow, DDS, The Pankey Institute, USA

Chapter 14
Centric Relation Records and T-Scan Occlusal Analysis of Centric Relation Prematurities ....649
   Roger Solow, DDS, The Pankey Institute, USA

Chapter 15
T-Scan as a Patient Education Tool .........................................................................................672
   John R. Droter, DDS, The Pankey Institute, USA

Chapter 16
T-Scan Case Finishing Applications in Aesthetic Dentistry Assisted by the iTero Digital
   Impression System: A Case Report .........................................................................................705
   Christopher J. Stevens, DDS, Private Practice, USA

Chapter 17
Transcutaneous Electrical Nerve Stimulation (TENS) Combined with the T-Scan System:
   A Case Report .........................................................................................................................744
   Curtis Westersund, DDS, ICCMO, Canada

Chapter 18
Periodontal Treatment and Computerized Occlusal Analysis ..............................................791
   Nicolas Cohen, DDS, MS, PhD, Private Practice, France & University of Paris, France

Section 6
New Occlusal Concepts Based on Computerized Occlusal Analysis

Chapter 19
Digital Occlusal Force Distribution Patterns (DOFDPs): Theory and Clinical Consequences....830
   Robert C. Supple, DMD, Private Practice, USA

Chapter 20
Force Finishing in Dental Medicine: A Simplified Approach to Occlusal Harmony ..............905
   Sushil Koirala, Thammasat University, Thailand & Vedic Institute of Smile Aesthetics
   (VISA), Nepal

Compilation of References ........................................................................................................xxx

About the Contributors ........................................................................................................lxxxv

Index .........................................................................................................................................xcii