2

26

37

47

57

78

95

QUINTESSENCE OF DENTAL TECHNOLOGY

EDITOR-IN-CHIEF Editorial: Sillas Duarte, Jr, DDS, MS, PhD The Digital Disruption in Dentistry Associate Professor and Chair Sillas Duarte, Jr, DDS, MS, PhD Division of Restorative Sciences Herman Ostrow School of Dentistry University of Southern California Novel Guidelines for Bonded Ceramic Veneers: Los Angeles, California Part 1. Is Tooth Preparation Truly Necessary? **ASSOCIATE EDITORS** Victor Clavijo, DDS, MS, PhD/Neimar Sartori, DDS, MS, PhD/ Jin-Ho Phark, DMD, Dr Med Dent/Sillas Duarte, Jr, DDS, MS, PhD4 Jin-Ho Phark, DDS, Dr Med Dent University of Southern California Los Angeles, California **BIOMATERIALS UPDATE** Neimar Sartori, DDS, MS, PhD Bonding to Silica-Based Glass-Ceramics: A Review of Current University of Southern California Los Angeles, California Techniques and Novel Self-Etching Ceramic Primers Jin-Ho Phark, DMD, Dr Med Dent/Neimar Sartori, DDS, MS, PhD/ **QDT 2016 SECTION CHAIRS** Sillas Duarte, Jr, DDS, MS, PhD Gerard J. Chiche. DDS Augusta, Georgia Oswaldo Scopin de Andrade, DDS, Analog Protocol for Obtaining the Ideal Soft Tissue Support and MS, PhD Contour in Anterior Implant Restorations São Paulo, Brazil Eric Van Dooren, DDS/Cristiano Soares, CDT/Leonardo Bocabella, CDT/ Willy Clavijo, CDT/Victor Clavijo, DDS, MS, PhD **EDITORIAL REVIEW BOARD** Pinhas Adar, CDT, MDT Atlanta, Georgia SKYN Concept: A Digital Workflow for Full-Mouth Rehabilitation Naoki Aiba, CDT Florin Cofar, DDS/Cyril Gaillard, DDS/Ioana Popp, CDT/Christophe Hue, CDT Monterey, California Amir Avishai, PhD Cleveland, Ohio Minimally Invasive Full-Mouth Rehabilitation for Dental Erosion Markus B. Blatz, DMD, PhD Masayuki Okawa, DDS Philadelphia, Pennsylvania Ana Carolina Botta, DDS, MS, PhD Stony Brook, New York STATE OF THE ART Shiro Kamachi, DMD Esthetic Rehabilitation of a Patient with Severely Worn and Boston, Massachusetts Compromised Dentition Avishai Sadan, DMD Somkiat Aimplee, DDS, MSc, FACP/Aram Torosian, MDC, CDT/ Los Angeles, California Sergio R. Arias, DDS, MS/Alvaro Blasi, DDS, CDT/Sung Bin Im, MDC, CDT, BS/ Thomas J. Salinas, DDS Gerard Chiche, DDS Rochester, Minnesota Eric Van Dooren, DDS Antwerp, Belgium Tooth Preparation and Ceramic Layering Guidelines for Fabiana Varjão, DDS, MS, PhD Bonded Porcelain Restorations in Different Challenging Situations Los Angeles, California Jon Gurrea, DDS/August Bruguera, MDT

Cover photo by Naoki Aiba.

Luana C. Wright, DDS, MS, PhD Fort Lauderdale, Florida Aki Yoshida, CDT Weston, Massachusetts

The Challenging Anterior Transition Zone: Details for Creating an Esthetic Result Victor Clavijo, DDS, MS, PhD/Paulo Fernando Mesquita de Carvalho, DDS, Leonardo Bocabella, CDT	111 MS/
Biologic Esthetics by Gingival Framework Design: Part 3. Gingival Framework Design Procedures Yuji Tsuzuki, RDT	129
3D Printed Complete Dentures Tae Hyung Kim, DDS/Fabiana Varjão, DDS, MS, PhD	141
MASTERPIECE The Challenge of a Natural-Appearing Fixed/Removable Implant-Supported Dental Prosthesis Michael Bergler, MDT/Stephen J. Chu, DMD, MSD, CDT	150
BIOMATERIALS UPDATE Wear of CAD/CAM Materials Nathaniel Lawson, DMD, PhD/John O. Burgess, DDS	162
DENTSCAPE TM : Tri-Axis Portrait Posing Naoki Aiba, CDT, Oral Design	170
Implant-Supported Full-Arch Zirconia Fixed Dental Prostheses for t Rehabilitation of a Patient with a Failing Dentition Jack Goldberg, DDS, MS/Arman Torbati, DDS, FACP/Alexandre Amir Aalam Winston Chee, DDS, FACP	
Ultrasonic Devices for Minimally Invasive Periodontal Surgery and Restorative Dentistry Ivan Contreras Molina, DDS, MSc, PhD/Gildardo Contreras Molina, DDS/ Claudia Angela Maziero Volpato, DDS, MS, PhD/Sascha A. Jovanovic, DDS Kyle Stanley, DDS	197 , MS/
A Minimally Invasive Restorative Approach for Treatment of Gingival Impingement Nikolaos Perakis, DDS/Giuseppe Mignani/Francesca Zicari, DDS, MS, PhD	209

PUBLISHER

H.W. Haase

EXECUTIVE VICE-PRESIDENT

William G. Hartman

JOURNAL DIRECTOR

Lori A. Bateman

PRODUCTION

Sue Robinson

ADVERTISING/EDITORIAL/ SUBSCRIPTION OFFICE

Quintessence Publishing Co, Inc 4350 Chandler Drive Hanover Park, Illinois 60133 Phone: (630) 736-3600 Toll-free: (800) 621-0387 Fax: (630) 736-3633 E-mail: service@quintbook.com Website: http://www.quintpub.com

QDT is published once a year by Quintessence Publishing Co, Inc, 4350 Chandler Drive, Hanover Park, Illinois, 60133. Price per copy: \$132.

MANUSCRIPT SUBMISSION

QDT publishes original articles covering dental laboratory techniques and methods. For submission information, contact Lori Bateman (lbateman@quintbook.com).

Copyright © 2016 by Quintessence Publishing Co, Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information and retrieval system, without permission in writing from the publisher. The publisher assumes no responsibility for unsolicited manuscripts. All opinions are those of the authors. Reprints of articles published in QDT can be obtained from the authors.

Permission to photocopy items solely for internal or personal use and for the internal or personal use of specific clients is granted by Quintessence Publishing Co, Inc, for libraries and other users registered with the Copyright Clearance Center (CCC) provided the appropriate fee is paid directly to CCC (www.copyright.com).

Printed in China ISSN 1060-1341 / ISBN 978-0-86715-723-9

ERRATA

The tooth displayed on the cover of QDT 2014, fabricated by Masaaki Honda (spelled incorrectly in the issue) et al, was made in acrylic, not ceramic as stated.