

Dr. Isabelle Denry

Title

Sturm und Drang: into Zirconia's Unknown

Abstract:

Due to its ease of machining in the green state and outstanding mechanical properties, yttria stabilized zirconia (Y-TZP) has become a ceramic of choice for dental applications. The recent introduction of full contour zirconia restorations as well as dental abutments and implants has further extended its clinical use. While it is well established that Y-TZP is susceptible to low temperature degradation (LTD) in a humid environment, there are questions regarding the clinical relevance of LTD in the oral environment. We will review this important question, explore the role of the various phases on optical properties and mechanical performance of full contour zirconia ceramics, and assess current clinical perspectives on zirconia dental implants.

Learning Objectives

1. Understanding the relevance of low temperature degradation on the long term performance of zirconia ceramics
2. Understanding the role of the cubic phase on optical and mechanical properties of full contour zirconia ceramics
3. Review clinical perspectives on zirconia dental implants

Biography

ISABELLE DENRY, DDS, PhD

Isabelle Denry received her DDS and her PhD from the University of Paris, France. After 20 years at the Ohio State University College of Dentistry, she recently moved to the University of Iowa, where she is a Professor in the Department of Prosthodontics and UI Institute for Dental Research. Dr. Denry has written numerous research and review articles on ceramics for dental applications and is a reviewer for many dental and engineering journals. Her research has been supported by Federal funds for nearly twenty-five years and she has been granted four US Patents. Her latest work has extended to the field of biomedical engineering, development of resorbable bioceramics for bone replacement and biomedical applications of zirconia ceramics.