Academy of Prosthodontics Annual Scientific Session
Naples, Florida | May 3 – 6, 2023

Program Speaker – Alireza Sadr

Title

State-of-the-Art Structural Adhesive Dentistry: Diagnosis and Management

Abstract

Dental bonding revolutionized the shape and content of clinical dentistry, presenting a durable minimally invasive alternative to the traditional approach. However, sealing is still considered a critical issue. Polymerization shrinkage stress still affects all kinds of bonded restorations. Our research methodology developed based on optical coherence tomography (OCT) presented a systematic approach to evaluate the bonded interface of resin composites and ceramics. We showed that in addition to debonding and marginal defects, the shrinkage stress of dental composites can induce and propagate tooth cracks; OCT is a unique tool for assessment of these defects and cracks both in vitro and clinically. Today, cracked tooth is a major concern in restoration of structurally compromised teeth, particularly those previously treated with the traditional dentistry. Biomimetic and adhesive reconstruction of a cracked tooth requires a structural approach, which relies on adhesion, mimics the properties of the natural tissues and presents a mechanism to mitigate the internal and external functional stresses.

Learning Objectives

1. Understand optical coherence tomography and its application in restorative dentistry
2. Learn about early diagnosis of cracks and management strategies using structural adhesive dentistry Novel bio-inspired crown design
3. Become familiar with the concept of stress distribution and reduction using restorative materials

Biography

Dr. Ali Sadr received his DDS degree from the National University of Iran (SBMU), and completed PhD with advanced training in operative dentistry in Tokyo Medical and Dental University, mentored by Prof. Junji Tagami in 2008. He has focused on advanced technology research, mainly dental adhesives and fiber-reinforced composites. He made major contribution to develop

optical coherence tomography (OCT) imaging for non-invasive diagnosis of caries and cracks. He is currently the director of operative dentistry at UW, while mentoring researchers and practicing dentistry. Dr. Sadr has published over 200 peer-reviewed articles with over 7500 scientific citations. He has presented lectures and workshops in over 20 countries. He received the UW Faculty Award for his operative dentistry training courses for 3 years in a row since 2019. In 2022, Dr. Sadr received the IADR Bayne Career Award recognizing his significant contribution to the science and application of dental materials research.