



**International College of Prosthodontists**  
**19<sup>th</sup> Biennial Scientific Session - VIRTUAL - September 22 – 25, 2021**

**Program Speaker – Hyeonjong Lee**

**Title**

Stress-Optimized Occlusal Design for Implant Restorations by Digital Analysis

**Abstract**

The prosthesis loading force is an essential factor for dental implant survival. Even if adequate osseointegration of the dental implant has been achieved, if the occlusal forces are not correctly distributed, lateral torque can be generated, causing high stress on surrounding tissues. The stress value of implant prostheses could be different whether the direction of load is vertical or oblique, affected by the shape of the occlusal surface. When an implant-supported prosthesis is designed with a dental computer-aided design (CAD) software program, the average vectors from each occlusal contact point can be visualized. If the visualized vector generates lateral torque, the occlusal surface design can be modified before finalizing the design. In this lecture, the automated vector analysis (AVA) was described to enable visualization of the occlusal vector to improve prosthesis design, optimizing occlusal forces. And, the effect of AVA was verified through various finite element analyses.

**Biography**

Hyeonjong Lee is a clinical assistant professor at prosthodontics, Dental College, Yonsei University in South Korea. He graduated from Kyung Hee University, with DMD in 2008. After graduation, he had trained in the prosthodontic program and acquired the national board of prosthodontics in Korea. Then, he had performed various studies regarding digital dentistry and computational stress analysis as a clinical instructor at Kyung Hee University, and he acquired MSD, PhD degrees in prosthodontics. After that, he worked as a scholar at the University of Geneva, and he also worked at the Pusan National University as an assistant professor. He is currently working at Yonsei University in Seoul and studying various projects of digital dentistry.