

4th International Heraeus Dental Symposium

Passion for Dentistry - Technology for Today and Tomorrow

“Passion for Dentistry - Technology for Today and Tomorrow” was the theme of the recently completed 4th International Heraeus Dental Symposium held by Heraeus Kulzer, worldwide leader in dental esthetics, October 27-30, 2011 at the Scottsdale Center for Dentistry in Scottsdale, Arizona, USA. A total of 68 prominent dentists, laboratory owners and researchers attended the event, with participants from the US, Brazil, Canada, Colombia, Germany and Mexico. The regular symposium featured 14 presentations about the latest products and practices concerning composites, adhesives, desensitizers and facial rejuvenation, as well as the use of social media in dentistry.

The symposium was chaired by Jacinthe Paquette, DDS, of Newport Beach, California, and Professor Marcos Vargas, DDS, MS of the University of Iowa. “Our company has a 160-year history of developing innovative materials and technologies,” said Dr. Marianne Gräfin Schmettow, Head of Scientific Relations & Communication International for Heraeus Kulzer GmbH in Hanau, Germany. “For us to ensure that our innovations are laser-focused on meeting the needs of dentists and their patients, it is essential that we maintain a rich and open dialogue with the world’s leading dental practitioners and researchers. And that is precisely the goal of our regular International Heraeus Dental Symposiums.”

Low shrinkage stress and exceptional mechanical strength combined in Venus Diamond- “Clinical Relevance and Measurement of the Contraction Stress Generation in Photopolymerizing Dental Composites.” was a presentation held by Jack L. Ferracane, PhD., Professor and Chair at Oregon Health & Science University.

Dr. Ferracane explained that light curing of dental composites tends to produce a volumetric contraction that generates significant stress of the tooth-restoration bond. This stress may compromise the adhesion and sealing of dental composite restorations. Jack Ferracane reviewed several studies that measured contraction stress for various dental composite brands using different testing systems.

His key conclusions:

- Contraction stresses are inevitable with current dental composites, producing stress on adhesively bonded interfaces.
- Contraction stress is affected by composite formulation, and increases with increased shrinkage, stiffness and curing rates, as well as in more confined cavity geometries.
- The magnitude of measured contraction stresses is dependent upon the testing system.
- Venus Diamond has shown one of the lowest stress magnitudes in different tests.

In one study co-authored by Dr. Ferracane, Venus Diamond, which is based on a new cross-linked polymer matrix, recorded the lowest stress among five composite brands tested at both 40s and 300s of curing light exposure.

“Venus Diamond shows a unique combination of low shrinkage stress and exceptional mechanical strength which are key factors for durable restorations.” commented Dr. Janine Schweppe, Scientific Affairs Manager Restoratives & Impressions International.

Venus Diamond has a highly pronounced color blending potential

Color adaptation was the topic of a lecture by Rade Paravina, DDS, MS, PhD, from the University of Texas Dental Branch at Houston, USA.

According to Dr. Paravina, the term “chameleon effect” refers to the perception that color differences between esthetic dental materials and hard dental tissues are smaller when the materials are viewed side-by-side than would be expected when viewed in isolation.

“Color marks the border between esthetic and non-esthetic”, stated Professor Rade Paravina from the “Blending effects are also material and shade dependent. The blending increases with the decrease of restoration size, the decrease of initial color difference and the increase of translucency.”

A study reported by Dr. Paravina clearly demonstrated that the majority of resin composites exhibited color adjustment potential, with the most pronounced color blending potential recorded for Venus Diamond. Dr. Paravina concluded that because of huge differences in color adjustment potential among materials and the possible influence on esthetic outcome, it would be beneficial to quantify the color adjustment potential of resin composites both scientifically and clinically.

Does the future lie in biomimetical mineralization?

One of the more provocative presentations was given by Dr. Susanne Busch of Heraeus' R&D team in Germany regarding the concept of biomimetical mineralization. According to this concept, dentine and enamel surfaces may be overgrown by a dense layer of enamel-like mineral comprising components that are primarily of biological origin or parts of natural mineralization, such as calcium, phosphate, fluoride and proteins. As a result, Dr. Busch explained, it may soon be possible to prevent early tooth decay by mineralization of apatite.

Outside-the-Box Thinking Regarding Facial Rejuvenation and Social Media

In a presentation entitled “A Wal-Mart Frame Around a Picasso Smile?”, Warren Roberts, DMD, from Vancouver, Canada, challenged dentists to pay attention to not only the patient’s teeth, but to his or her face and neck when performing a “smile makeover.” By focusing solely on intraoral esthetic perfection, Dr. Roberts argued, dentists are merely creating “tooth makeovers” rather than true “smile makeovers.” He discussed how botox, lasers and fillers can be used to achieve facial rejuvenation by enhancing peri-oral lines, folds and lip position. The result is much more effective smile design than would be the case if only the teeth were esthetically enhanced.

Rather than enhancing smiles, a presentation by Kaleim Manji, MBA, Director of Spear Education Center, Scottsdale, Arizona focused on enhancing the ability of dental practices to communicate with current and prospective patients. In a presentation entitled “Is Social Media a Fad?”, the answer suggested by Mr. Manji was an emphatic “No!” Manji colorfully and compellingly provided surprising facts and stimulating illustrations of how dental practices are increasingly using social media like Twitter, YouTube and especially Facebook, as cost-effective means of patient communications. For example, Manji pointed out that Facebook is rapidly becoming a major factor in online advertising, and that more and more dental practices are experimenting with this advertising medium.

International speakers from all over the Americas and from Germany

Further honored speakers at the symposium were from the US: Lee Ann Brady, DMD; Gary DeWood, DDS, MS; Brian LeSage, DDS, FAACD; and Marcos Vargas, DDS, MS. From Mexico came Daniel Adler, DDS and Alejandro Treviño, DDS; from Brazil: Luis Antonio Felipe, DDS, MS; Marcelo Giannini, DDS, MS, PhD and Walter Miranda, DDS, MS, PhD; and from Germany Claus-Peter Ernst, DDS, PhD.



4th international Heraeus Dental Symposium draws 86 distinguished dental leaders to Scottsdale, Arizona.



Jack Ferracane, MS, PhD, USA



Daniel Adler, DDS, Mexico, and Warren Roberts, DMD, USA



Dr. Susanne Busch, Germany



Kaleim Manji, MBA, USA

Heraeus

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