

All-ceramic restorations drive aesthetics in dentistry

Digitalised workflows will create new business opportunities for dental laboratories worldwide

■ Digital technologies have been in the focus of researchers and developers in the industry alike for many years. Now they are beginning to increasingly shape the daily routines in dental practices and laboratories including aesthetic dentistry procedures. Once being a subspecialty, the field of aesthetic dentistry has made significant progress due to

the introduction of new technologies such as electronic colourimetric systems and digital methods for producing highly accurate intraoral moulds.

In particular, the diverse methods of CAD/CAM-supported design in dental restorations—especially with the use of zirconium high-strength

ceramics—and layered or pressed ceramic veneers are now providing excellent solutions for patients that not only ask for highly functional but also aesthetic dental prosthetics. This applies especially to the precise forming of ceramic or metallic foundations for crowns and bridges, as well as to implant prostheses and associated ceramic or plastic veneers.

“Aesthetics in dentistry have continued to gain importance in recent years, as more patients ask their dentist how their teeth can be restored to both functional and aesthetic perfection,” explains Dr. Martin Rickert, Managing Board Chairman of the Association of German Dental Manufacturers (VDDI). He adds that in order to meet this strong demand for



(DTI/Photo Koelnmesse, Germany)

high-tech dental care more efficiently, users can now rely not only on conventional but also digital methods that make CAD/CAM-supported ceramic veneer techniques possible.

Among the latest versions of digital workflow are all-ceramics mono-block processes using CAD/CAM methods to make anatomically complete restorations from advanced materials like lithium disilicate or zirconium dioxide ceramics. Modern CAD/CAM veneering systems that allow to create a restoration with all anatomical details inside a virtual space and subdivides it into two partial data records are currently provided by the dental industry. One of these datasets is used for the fabrication of the foundation from zirconium dioxide while the other is used to mill the pre-sintered veneer ceramic. This veneer can then be attached on top of the foundation, coloured and sintered.

Similar methods can also be applied to lithium disilicate ceramics, a material primarily used for the production of single and multi-unit dental restorations.

In addition to a comprehensive presentation of high-tech in dentistry, the International Dental Show will also provide a comprehensive overview of conventional technologies that continue to be useful in dental prosthetics. These include treatment methods using ceramics, precious metals or NEM alloys in their veneers—either processed in layer or in laminated forms. Simultaneously, plastics technology has also made progress in the development of aesthetically pleasing veneers. Innovative composite materials provide unprecedented abrasion resistance as well as the required colour fidelity for the creation of high-quality structural designs.

“Professional visitors from dentist's practices and dental laboratories can look forward to the International Dental Show, the world's largest trade fair for dental medicine and dental technology in Cologne from 22 to 26 March, 2011, as an excellent opportunity for gathering information from the exhibiting companies' specialists, other experts and experienced users about the whole spectrum of aesthetic dentistry and especially the latest CAD/CAM methods for making perfect ceramic veneers and substructures,” concludes Dr Markus Heibach, CEO of the VDDI. ◀

(Source: Koelnmesse/Edited by Daniel Zimmermann, today international)

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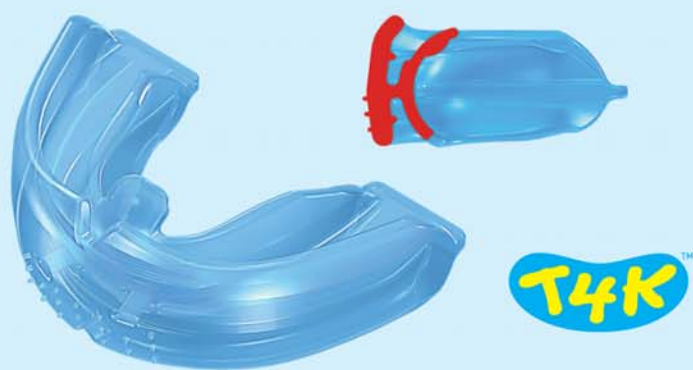
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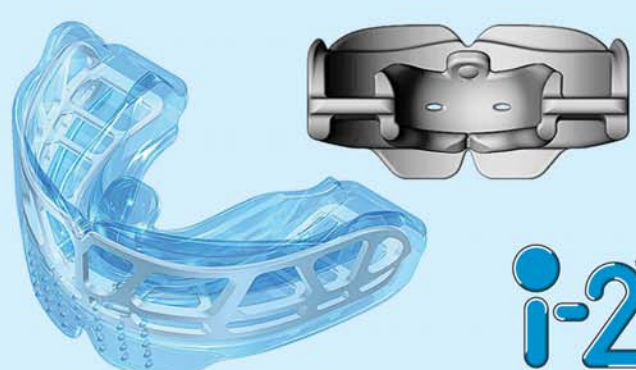
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