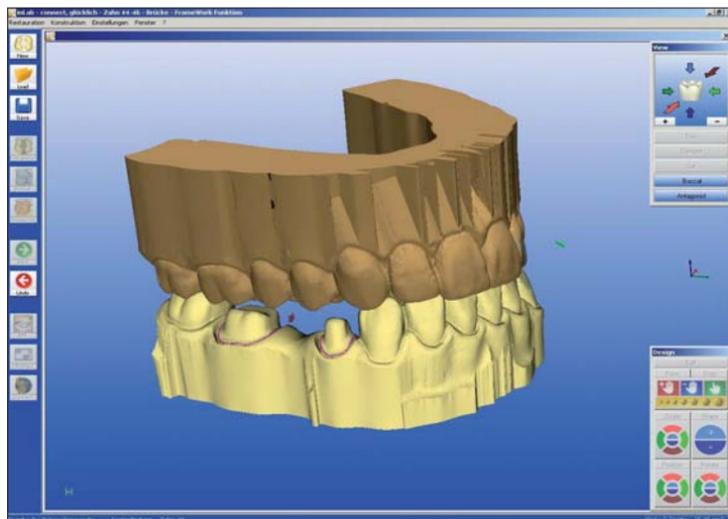


# CAD/CAM technology, the seed for a new kind of dentistry

By Prof. Albert Mehl, Switzerland



Progress in dentistry: digitally completed full arch model, computed with CEREC Connect software—the basis for the production of the model and the construction and milling of the framework (Image courtesy of Sirona).

Dental CAD/CAM technology has recently undergone enormous development. At the moment, it is the most innovative segment in dentistry and will again be the focal point of this year's International Dental Show (IDS), where plenty of manufacturers are going to showcase new systems and CAD/CAM solutions. While dental technology was the primary focus in the past, developers are now

also looking at the manner in which these technologies can be applied to the dental practice. Digital impressions play a key role in this process.

Manufacturers are currently making large investments in this technology and are thus able to constantly introduce new innovations. In this particular field—handheld systems for precise 3-D surface

measurements—dentistry is the forerunner of all other engineering sciences, a fact that acknowledges the pioneer achievement of these developments.

While there was a level of caution with regard to the accuracy of full jaw scans, new clinical studies and trials confirm that intra-oral, 3-D systems now produce results that are almost comparable to conventional impression methods. In addition, handling and integration into the practice workflow have been developed to such a degree that these systems can now be used for the treatment of dental patients.

Further examples are functional diagnostics with virtual articulators, implant treatment planning through the combination of DVT data and intra-oral scans that allow for chair-side production of surgical guides, as well as facial scans serving as a base for a secure prosthetic planning.

However, CAD/CAM technology is not limited to the fabrication of dental restorations. Computerised dentistry is now also influencing other fields in dentistry, such as diagnostics, 3-D assessment and digital

## CAD/CAM thrives at IDS

Dentists and dental technicians who visit the next International Dental Show in Cologne in Germany will have more dental CAD/CAM systems at their disposal. According to preliminary figures of the organiser Koelnmesse, the number of companies planning to showcase the latest technology in this field has increased by almost 50 per cent. The last show in 2009 only saw 89 companies exhibiting CAD/CAM related products.

Digital processes are increasingly determining the day-to-day work in dental practices and laboratories due to increasing demand for dental prosthetic devices in most Western markets. In addition, prices for high-value materials like zirconia and ceramics have fallen signifi-

cantly over the last two years. A 2010 report by the Canadian Millennium Research Group predicted the global dental CAD/CAM market to grow strongly through 2014 despite the economic challenges that dentists have to face because of the recession.

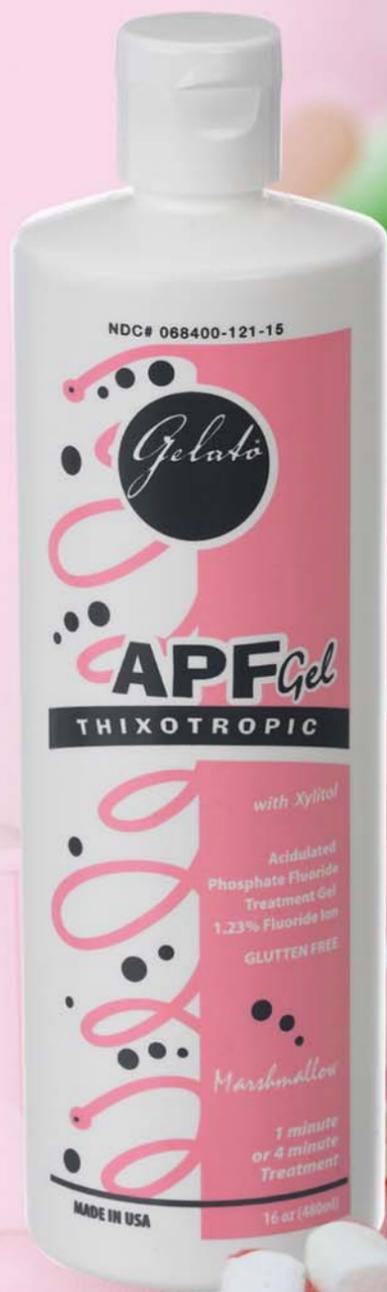
Prof. Albert Mehl, currently Guest Professor at the Centre for Dentistry and Oral Medicine at the University of Zürich, sees many advantages in the new technology. "The enormous potential of digital scanning has been recognised by the industry and thus is currently in heavy development," he told *today international*. "As soon as quality and practicability have been demonstrated within clinical environments, amortisation will no longer be an issue." ◀◀

storage. Owing to these developments, complex approaches have become simplified and can better be integrated into the daily practice—all for the benefit of the patient. As a result of these new developments, which offer completely new opportunities for the daily workflow of the dental practice, dentists will have to become acquainted with these new technologies. Only well-educated den-

tists and dental technicians are able to assess the differences between the available systems and technologies. Just as studying material science enables confident handling of different materials, the basics of computerised dentistry must find their way into the dental curriculum.

The upcoming IDS will prove that the time is ripe! ◀◀

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