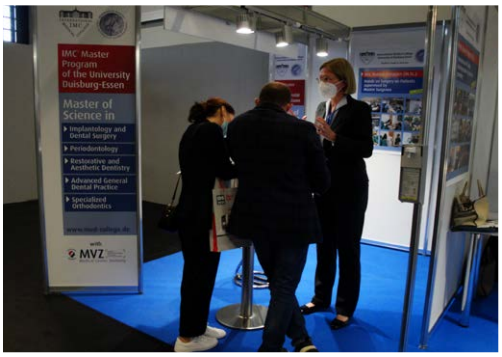
This second issue of the OREC Panorama is nearly completely dedicated to the **International Dental Show** widely known just as **IDS**. This fair in the heart of Cologne in Germany has been one of the most important events in dental profession for years. The original date in march was postponed to September and now it should be a „sign“, a „signal“ a „re-start“. Rairly has an event been so symbolically



charged. Also the International Medical College (IMC) and its OREC team were present on this fair, to present our Master Courses as well as the concept of continued education on the OREC platform. Besides we had the possibility to stroll around and pick up the newest trends in different areas of dental treatment. Some interesting news from this excursion and some general impressions we will share with our readers today.

Dental fair in Corona times

And how was now this „re-start“ of the dental world?
A nice sunny September was greeting exhibitors and guests and a touch of trade fair feeling was over the city. Security check-in with 3G concept in combination with tickets exclusively sold online was the basis for entrance. The hygiene concept of the IDS organizers worked well. The room concept was adapted accordingly. The aisles were spacious, most of the stands were airy and the number of visitors was limited to 20,000 per trade show day. All those who remembered the busy days of former IDS might have been a bit disappointed. But definitely a big advantage was the lower background noise. After a somewhat hesitant start to the trade show, the flow of visitors got better and better.

Of course there were also painful gaps on the exhibitor side. Big companies such as Straumann and Dentsply Sirona were not at all presented at this fair.
In summary, it was an IDS „light,“ according to some visitors and exhibitors. Mark Stephen Pace - chairman of the board of the German Dental Industry Association (VDDI) - in his opening speech saw it that way: „With this signal, we want to show the world, it goes on, there is also optimism and we don‘t bury our heads in the sand and wait until it‘s over.“ But at the end of the fair it was even more enthusiatic: „Optimism has returned to the international dental family. We had intensive discussions with interested visitors, and most of them came to make subsequent investment decisions. Many of the decision-makers deliberately made their deals at the trade show. We can send the signal to the outside world: The German dental industry is moving forward. We offer solutions in a difficult time. The exhibitors I spoke to were all happy to be at IDS. And I am convinced that they will benefit from market changes in the wake of IDS! That‘s how it works in business, after all: anyone who was present in the exhibition halls certainly took an entrepreneurial risk in the run-up, but it‘s all the more gratifying to be able to chalk up well-deserved success for themselves in the end and gain market share.“
For Oliver Frese, Managing Director of Koelnmesse, IDS 2021 also clearly illustrated the spirit of optimism in the industry: „All exhibitors and visitors were clearly delighted to once again be able to cultivate contacts directly on site, to experience products live, and to deepen personal encounters at the numerous networking events at the end of the trade fair day. That‘s why IDS 2021 plays a very prominent role in the relaunch of the industry, and of course in the relaunch of the trade show industry as a whole. Moreover, IDS 2021 was the first IDS to be hybrid. That means that on the one hand there was the physical meeting place, here in Cologne in the exhibition halls, and in addition to that there was the digital platform IDSconnect with additional opportunities for presentations and networking, which was very well received.“
IDS had once again shown that it is the world‘s leading trade fair for the international dental industry: More than 23,000 trade visitors from 114 countries came to IDS 2021 to find out about the range of products and services offered by 830 exhibiting companies from 59 countries. Especially against the background of limited travel opportunities in many regions of the world, IDS once again convinced with its strong international appeal. 72 percent of exhibitors came from abroad, as did 57 percent of visitors - from Europe, especially Italy, France and the Netherlands, to Eastern Europe, the Middle East and overseas.

IDS goes digital

Completely new was also the hybrid concept of this show - a combination of online and physical meetings mediated by the **IDSconnect platform**, which was supposed to build an interactive digital bridge to the analog trade show and back.
At IDSconnect, 77 exhibitors from 16 countries were featured daily with 88 contributions and a broadcast time of 1,310 minutes. The general event program such as the awarding of several Prizes was also streamed live via the platform.

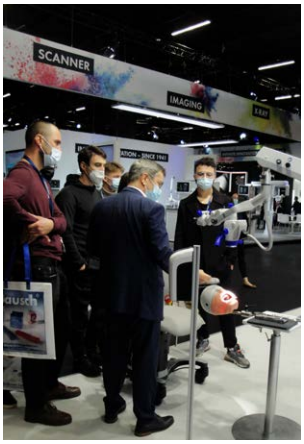
And how was the feedback?
Yes, it was possible to watch videos and live programs from different places. In theory it was also possible to chat with others. But a look at participant lists for the respective sessions showed, the rush for the digital offerings was not very big. At the trade show itself, the usual program points were missing instead, which were shifted to the digital formats this time for security and distance reasons.
Unfortunately, IDSconnect did not work together with the conference App and meeting requests had to be sent and accepted by e-mail, which was a bit inconvenient. There is some room for improvement...
However, a useful feature was the scan option of the digital contact details instead of exchanging analogue business cards.

Last but not least, one big benefit of this hybrid event is that all digitally posted lectures, shows and presentations are still available „on demand“ afterwards.

In conclusion: Seeing what‘s going on, getting in touch with people digitally but in real time, spontaneously making new contacts - that‘s what could and should have been a goal of the IDSconnect, but it turned out to be rather difficult. However, to find out about exhibitors and their products, it was certainly a useful addition to the normal trade fair events, but could by no means replace them. And if we are honest: After the long time without personal contacts, getting together on site was a real highlight.

Overall trends

Digitalization



There is no doubt - digital workflows will be a central part of future dentistry. No wonder that at nearly every corner oral scanner or complete digital solutions were offered.

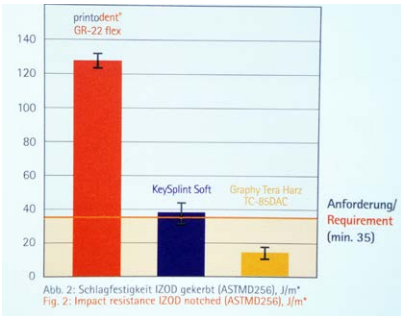
This starts right at conventional dental units such as the XO FLOW unit with workflow guidance, built-in computer, network connection and other new digital features. (Find out more at **www.xo-care.com**.)

Several companies presented their solutions for a complete workflow from oral scan to final dentures via CAD/CAM applications applying classical milling or 3D printing.
One of the big players in this market, who was present at the IDS and also celebrated its 50th anniversairy, is clearly Planmeca - one of the world‘s largest private manufacturer of dental products. Planmeca set new standards in traditional dentistry with new innovations leading to the world‘s first direct digital panoramic imaging unit as well as the pioneering all-in-one software concept so that dental professionals could access all important information through a single user interface. The user can chose among several devices according to patient needs. Another benefit lies in comparatively low radiation doses, that can be adjusted depending on actual requirements. Here, the company is particularly proud of its algorithm expertise eliminating also the effects of patient movement.

Another complete solution was presented by the vhf Camfacture AG. With its new Z4, this company has developed a machine with which you can reliably mill and grind in ultra-HD in the micrometer range. Intuitive operation meets comfort and speed and fits seamlessly into your workflows. It is important that the systems such as the intoral scanner, design software and milling machine are perfectly coordinated. The digital workflow thus enables fast and pleasant treatment in just one session. After a brief introduction, the Z4 can be operated by any member of staff. It requires only a power connection and does not need any external compressed air or water supply.

However, also mixed analog-digital workflows differentiate themselves. So standard solutions might be as that dental technicians design a crown on the basis of an intraoral scan and send the data to the practice so that the dentist can utilize his own equipment. Consequently, it is not surprising that more than 30 companies were presenting their 3D printers. Up to now, the strengths of 3D printing have mainly been played out in the production of models or bite splints. Today, veneers or gingival masks are also manufactured using the additive process on the basis of an intraoral scan. In addition, denture bases and teeth are printed and then bonded together to form a complete full-arch or complete denture. Mock-ups made of try-in resins can also be printed, as can fixed restorations, long-term temporaries and even materials for permanent dentures might be result of continuous research .

So, of course a series of companies selling printable materials were demonstrating their newest developments at the IDS.
Also in the field of materials for classical splint therapy development is going on: Printodent presented its brandnew

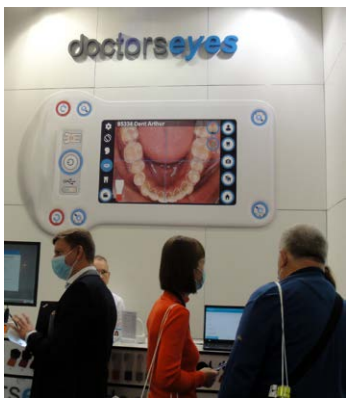


GR-22 flex with thermomemory effect, optimized for additive manufacturing. This material has outstanding properties in particular for impact strength as well as elongation at break. the innovative splint materials is thus ideally suited to compensate for small inaccuracies during impression taking or intraoral scans.

In the case of permanent dentures, however, the classic materials are likely to be still preferred. In the case of ceramics, materials with high strength are being trimmed to make them more translucent and thus more esthetic and, conversely, translucent materials are being further developed in the direction of stronger and thus more broadly indicated. Hence a wide range of zirconium oxide, lithium disilicate, lithium silicate-based and other ceramics was presented at IDS for different indications. Even applications to print zirconia based materials were presented. However more clinical evidence will be needed here, before traditional solutions will be replaced.

Smaller or bigger innovations from industry

Equipment



Dental Photography

Small but great benefit: Dentaleyepad calls themselves the (R)Evolution of the dental photography. Here we find a camera equipped with a “dental photo assistant”: It has never been so easy to make perfect dental recordings. Each tooth is displayed in over size and every detail is exactly identifiable and in focus. Thanks to the workflow concept, the camera knows which shots have to be taken, focuses at the right spot, zooms in and mirrors the images independently. This saves time and rework. Immediately after recording, the images are automatically transferred to their local practice server without intervention. Additionally, all pictures are stored directly in correct template position. A manual and respective tutorials are directly stored on the device. See more at https://dentaleyepad.de

Doctorseyes

also presents a new innovative generation of dental mirrors. With their ultrabright coating, they enable almost 100% reflection over the entire range of the visible color spectrum for the first time. Special mirrors are available for buccal and lingual images as well as for occlusal overviews. The mirrors are supplied with a removable silicone handle and both the mirror as well as the handle are autoclavable. (Find more at www.doctorseyes.de)

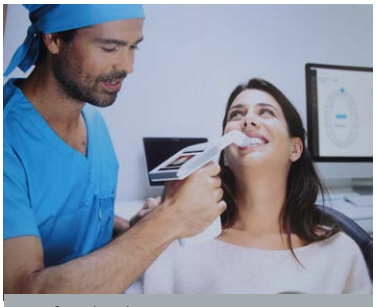


Image from brochure

Handheld Devices

Rayplicker handy by Borea (see more at borea-dental.com) is a new tool to perform a simple, reliable and completely reproducible quality shade-taking, determining the brightness, saturation, chromaticity and translucency of a tooth. Its desgined for dentists and dental laboraties to record and communicate on aethetic parameters without subjective interpretations.

The trend to smaller devices is also seen for x-ray devices such as the portable x-ray system by the Korean company ecoTRON (www.ecotron.co.kr). This CE certified handheld system might have an added value when fast control is needed. It is easy and simple to use, with 1.5 kg so lightweight that it's easy to operate with only one hand. Further it can be easily charged by placing the device on a cradle and provides superior & high resolution of 0.3 mm. Radiation is directed only forward.

High reliability, ergonomic design, comfort and high degree of flexibility are provided by the dental diagnostic microscope CALIPSO MD-500 (www.scaner.ua/en/calipso/). All lenses and prisms are made of high quality glass manufactured by Schott (Germany). The powerful light-emitting diodes (LED) provides a spectrum close to natural light, and a high level of illumination with superior contrast and sharpness reaching a brightness of more than 60000 lux with perfect uniformity across the entire field of view. The Tripod is floor-resistant, self-directed with rubberized wheels equipped with braking system but is available for mounting at a ceiling or wall, too. An orange light filter prevents premature photopolymerization, or in green it enhances the contrast of blood vessels. Instead of the regular video the microscope can be equipped with optical adapters for connecting cameras and camcorders and is thus ideally suited to demonstrate clinical details for education purposes. Further, mobile phones with SOVA (Special On View Application) installed can be used for video recording. Personal data obtained through the SOVA program is in no way received, processed or stored by the Scanner Company, as declared in the Privacy Policy in the SOVA mobile phone camera visual display program.

Implantology

In particular for implant related products the absence of the big players was obvious. Nevertheless, a series of smaller enterprises and new companies presented their newest developments.

So Neoss, founded only in 2000, promoted particularly the NeossProActive® EdgeImplant with its revolutionary drilling protocol requiring only 1-2 step, resulting in excellent primary stability, equal or even better than premium market leaders.

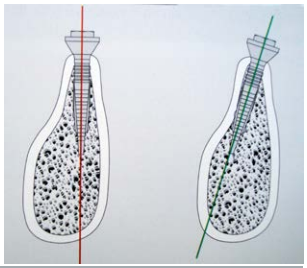
Geass and iRES give life to IESS GROUP

The union of those two solid businesses will provide operational synergies. iRES will bring in its high quality Swiss production with its recognised hybrid implant, while GEASS will contribute its patented SYNTHEGRA laser surface.

OSSTEM claims to become the world´s best dental implant company and presented a collection of new implants, membranes and bone grafts besides their concept of whole Digital Lab Analog Workflow or newest generation of 3D printers.

The new SOI surface based on a coating with substance K shall provide ultra-hydrophilic surfaces, protecing against carbon contamination and consequently leading to enhanced initial bone formation shortening healing time by 35%.

Piezoimplants


Different possible implant axes for use of piezoimplants (image from brochure

It is well known, that immediately after the loss of one or more teeth, resorption of the alveolar ridge begins. It varies from patient to patient, but always leads to a vertical, and especially horizontal, reduction of the alveolar ridge. Thus, a patient's alveolar ridge may soon become too narrow for the placement of a standard implant. In addition, rotary instruments tend to remove more of the thin vestibular cortical bone than of the more resistant lingual cortical bone. As a result, the effective implant axis may shift vestibularly. This poses a significant problem, especially in the esthetic zone.

Therefore, if the bone width is insufficient, placement of a conventional implant with a usual diameter is not advisable, unless bone augmentation is performed beforehand or at implant placement. Although short implants offer a solution for reduced alveolar bone height, they are not a good match for patients with long-lost teeth and narrow alveolar ridges.

Alternatively, blade implants have been used in the past, but their osseointegration has proven to be insufficient. The reason for the lack of success could be overheating of the bone during preparation or the design and surface of the implants themselves, which make it difficult to achieve the required primary and secondary stability. Also, fractures might be an issue. In the traditional placement of blade implants, the bone walls were opened in a wedge shape, whereby the implant might lose a lot of primary stability and can leave a gap at the implant shoulder. Lateral micromovements could subsequently prevent successful osseointegration. Accordingly, different regenerative techniques for bone augmentation have been developed in re-

cent years. However, these procedures are associated with additional effort, higher costs and additional stress for the patient. Regardless of the size of the implant to be placed, the anatomical shape of the narrow alveolar ridge suggests the choice of an implant whose shape corresponds to that of the alveolar ridge.

This consideration, together with the possibility of giving the implant site any shape based on the piezochirguric method, led to the development of the so-called piezo implants, mainly by Prof. Vercellotti and Dr. Rebaudi within Rex Implants LLC.
Although such implants are quite delicate with only 1.8 mm at shoulder height, they prove to be as resistant as a conventional screw implant in mechanical tests (background from company). The latest development of such implants feature a rectangular cross-section as well as an exclusive wedge shape. Piezoimplants are inserted between the lingual and vestibular cortices without damaging them. This drastically reduces the risk of vestibular dehiscence or peri-implantitis. Another advantage of a Rex Piezoimplant is that they exert moderate lateral pressure on the cortical bone, which in turn strengthens the cortical bone according to Wolff's law.
The implant site is prepared with a few piezo-surgery instruments, possibly in conjunction with special magnetically driven osteotomes. For the correct preparation of the implant site, a clinical protocol has been developed that uses cutting and control instruments alternately. The implant is inserted into the implant bed by calibrated pressure waves of the electromagnetic surgical hammer (press fit).

In addition, the REX TL1.8 piezo implants for example, combines innovative intraosseous design with a standard prosthetic connection (4.1 mm external hex) for subsequent restoration with standard implant-prosthetic means. The implants are available in 4 lengths (9, 11, 13 and 15 mm). Promotion action with reduced prices for different sets is available on request by end of this year (check German brochure wih respective offers).

Implant pretreatment

Sandblasted and acid etched implants are meanwhile most preferred dental implant types due to their improved osseointegration. Still for most renown SLA surfaces produced by Straumann, hydrophilic surface modification (SLAactive) is still superior to standard SLA implants for the first healing time of 2 to 4 weeks after surgery (Lang et al. 2011). However, even if the surfaces are initially hydrophilic, the phenomenon of aging leads to the formation of hydrocarbons on the surface titanium due to carbon contamination from the atmosphere if no protecting measures are taken (Hori et al. 2009)

DENTIS - a company from South Korea might provide an interesting option both for regenerating aged implants or to improve wettability for any implant type - providing a hydrophilic implant prior to the surgery.
When the implant surface is irradiated with ultraviolet (UV) light, organic substances such as hydrocarbons are removed and the surface becomes extremely hydrophilic. To meet this demand, DENTIS has developed a new implant UV irradiator called SQUVA working with a wavelength of 172 nm (https://dentisusa.com/squva/) which is able to treat implant of any manufacturer, both bone- or tissue-level implants, within a time span of only 10 s (price: $8.500).

To reduce the risk of cross-contamination, SQUVA can be operated using a motion sensor and voice guidance, but it also has a 5 in. LCD touch panel that is intuitive to use. In addition, it is equipped with a special filter and an ozone sensor to minimise microscopic amounts of ozone that may be generated during the UV irradiation process, protecting the user.

Miscelleanous

Mobile dental units

The population in Europe and other regions is getting older and older. Accordingly, many patients are becoming more immobile with age. There are also many rural areas where running a dental practice is not economical. In such cases, the use of a mobile dental unit could be a viable solution.
The company Van Venrooy from Netherlands presented at this IDS some special vehicles of various sizes. Their vehicles are fully autonomous. It is therefore not necessary to connect extra cables and hoses. All supplies (for gas, water and electricity) are integrated in the vehicle. Practice and equipment meet all official KNMT infection prevention guidelines and ISO-9001 standardization for the healthcare sector.

A similar German solution can be obtained from WAS, too.

Not really new, but interesting for dentists who want to perform **research projects in Germany** could be **a grant** of the „Forschungsgemeinschaft Dental“ (FDG). One condition is that the research has to be conducted at a German University.
Research projects at German universities with practical, application-oriented problems within the framework of dental research and/or with high technological potential, which achieve a publishable result or interim result within the funding period, can be funded on application as a complete or self-contained sub-project within a longer-term overall project. A foreign visiting scientist in this sense is a dentist with foreign citizenship and with a degree from a foreign university. The FGD grants as funding a personnel cost subsidy with a flat-rate of € 18,000 for the research project with a duration of maximum 12 months, reimbursement of equipment, furnishing and material costs upon presentation of receipts up to a maximum amount of € 2,000 as well as reimbursement of travel expenses for the guest scientist‘s journey from his/her home town or his/her return journey and for costs for a travel of the visiting scientist for the purpose of presenting the results at a scientific congress upon proof. An approval of funding by the FGD will be granted to the same foreign visiting scientist for a maximum of two research projects (funded projects). Complete application documents must be received by the FGD by **31 October 31** or **31 March** of each year. Application details can be found at: https://www.fgdental.de/

Save the date

In view of the slight improvements with Covid-19 pandemic more and more events will be performed in „real world“
but a few events will still be performed on a virtual basis.

- DenTech 2021 - **The 25th International Exhibition and Symposium on Dental equipment Technology and Products** was postponed. It will be held in the Shanghai World Expo Exhibition and Convention Center from **3 - 6 November 2021**. For more information: www.dentech.com.cn/en-us
- “Welcome back ... we miss you” is also the slogan of the **Greater New York Dental Meeting (GNYDM)** with meetings dates from **26 November - 1 December 2021**, and exhibitions from **28 November - 1 December 2021**. Notice: The meeting is a fully vaccinated event; proof of vaccination is required to attend. No exceptions. Find more information at: www.gnydm.com
- Since its inception in 1996 and with a vision to be the leading provider of evidence-based continuous dental education to the dental community at large, **AEEDC Dubai** has been bringing the very best minds and brands to the stage and floor. Next year from **1 - 3 February 2022** it will take place once again in Dubai. Find more information at: www.index.ae/events/aeedc-dubai/
- For all dentists speaking German:
41st International Symposium for oral and maxillofacial surgeons, dentists and orthodontists, will be helt once again in presence from **5 to 11 February 2022**, for more information: www.stanton-kongress.de
- **IDEM 2022** will return in person in Singapore from **8 - 10 April 2022** at a new venue, Marina Bay Sands, Singapore. IDEM 2022 expects to welcome over 500 exhibiting companies and over 9,000 participants over the course of 3 days. Attendees can look forward to a seamless and compact event experience from the point of arrival. For more information: www.idem-singapore.com
- The Congress Organising Committee invites to the 21st **World Congress on Dental Traumatology (WCDT 2022)**, the most important conference on dental traumatology. WCDT 2022 will take place at the Lisbon Congress Centre, Lisbon, Portugal, **11 – 14 May 2022**, with pre-congress courses to be held on 11 May 2022.

The OREC platform offers a variety of „pure“ virtual events providing close contact with the referents in course of the events as well as continued discussions in specific chat rooms. On the website you will find the course program for 2021, shown here again in the table presented below. To book a course log in to **MyOREC** and choose the course of interest. The new program with a set of new lectures to be held in 2022 will be available in November.

OREC Online-LIve-Events

Topic	Date
Preimplants surgery: Advantages of the calvaria bone grafts in major maxillofacial defects	15 October 12 pm - 1 pm
Implant Prosthetic Rehabilitation in the Head and Neck area	29 October 12 pm - 1 pm
Case presentation of challenging implants prosthodontics	19 November 12 pm - 1 pm
Facial Rejuvenation	3 December 12 pm - 1 pm

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