

# das dental

English edition

# labor

DIE GANZE WELT DER MODERNEN ZAHNTECHNIK

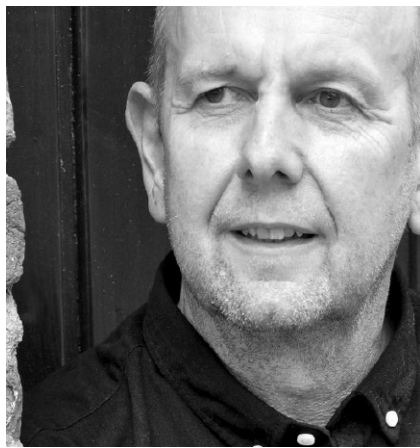
- A zirconium oxide of the very latest generation



# A zirconium oxide of the very latest generation

The best dental technicians have already taken their place on the podium at the Annual Conference of the Association of Dental Technology, the ADT. As had Werner Gotsch in 2022. Wolfgang Weisser interviewed him. The two colleagues got to know each other many years ago and met regularly at various events. Wolfgang Weisser was also a guest at many of Werner Gotsch's workshops. Numerous specialist articles for dental labor were the result. Wolfgang Weisser particularly remembers a visit to Werner Gotsch together with Dr. Angelika Schaller – and afterwards, they met for dinner with Alexander Herrmann, meanwhile a famous chef on TV. Now Werner Gotsch opened his dental treasure trove for us.

**dl:** Dear Werner Gotsch, we've heard very little from you for the last ten years or so. You have made yourself very scarce publicly in the dental world. Why?



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**Werner Gotsch:** Yes, I completely agree with you. I am often asked this question among people I have had the pleasure of accompanying in their professional development and further training. Friendships often develop that go far beyond our professional commitment. Well, my everyday life changed fundamentally ten years ago. Two little feet entered my life, which are quickly – unfortunately far too quickly – getting bigger and today respond to my annoying plea for more order in the room succinctly with a quote from Albert Einstein: “Brilliant people are rarely orderly, orderly people are rarely brilliant!” Recently, I have been observing the new developments in our profession from a

slightly more distant, yet still very attentive perspective.

My view of dental prosthetics has changed significantly, and so has my way of working with these wonderful new high-performance ceramics – and that is exactly what I would like to focus on in my presentation at the ADT.

**dl:** Can you tell us a little bit more?

**Werner Gotsch:** Sure, would love to. As I get to know many of the patients I care for personally, either in the respective dental practices or in my laboratory, I have always been surprised at how little our profession is perceived by the public, if at all. Fortunately, I made the acquaintance of Dr. Johanna von Luckwald by pure chance. She holds a doctorate in social sciences with a focus on economics and consulting. She has been working as a professional process

facilitator for over 20 years and supports companies, universities and individuals on their success and career path across numerous sectors. As her field of activity includes a few, but very renowned dental practices throughout Germany, she has also gained experience within our industry. I had an in-depth conversation with her. I will be bringing the most important insights for our profession with me to the ADT in Nürtingen – dental prosthetics viewed neutrally, from the outside and from a distance. And I would prefer not to reveal any more at this point. As our profession is all about custom-made products, the choice of material is at least as important as a good business strategy. Always on the lookout for improvements and with great curiosity, I was one of the first practical users given the opportunity to work with the new zirconia line from Dentaureum.

**dl: When did you first become aware of Dentaureum as a ceramic manufacturer?**

**Werner Gotsch:** I can tell you exactly: At the market launch of ceraMotion. A wonderful PR campaign with colored ceraMotion teeth complemented the launch. When Dentaureum launched ceraMotion one Touch, the first paste ceramic, in 2016, I was certainly one of the early users, as no other manufacturer had a comparable product. This new paste ceramic was simply perfect for my ACD, Additional Crown Design ceramic concept. It was the ideal complement to my way of working. With the new zirconia lines, Dentaureum has now closed a gap and launched a complete ceramic world. As a user, one immediately notices that all components harmonize and are perfectly matched.

**dl: Can you briefly explain your approach and the corresponding selection of the framework structures used?**

**Werner Gotsch:** Compared to the early days of all-ceramic framework structures, we now enjoy almost paradisiacal conditions when it comes to aesthetics due to the translucent high-performance ceramics. As the materials are available in a wide variety of shades, translucencies and strengths, it is simply a matter of selecting the best option for the individual patient. However, in my initial experience, there was no right or wrong here - rather, many roads lead to Rome.

**dl: Specifically: which criteria do you apply today when selecting blanks for your patient cases?**

**Werner Gotsch:** This is a snapshot, especially when you are familiarizing yourself with a completely new zirconia line. My approach is subject to a constant optimization process, but I exploit the full range of materials made available to me by the industry to be successful in the market. Some photos give you a small insight into my daily work procedures and the first trials with ceraMotion zirconia. I deliberately chose very small restorations to be able to better assess the performance of the ceramic components. For the first patient case, I opted for ceraMotion Z Hybrid as the framework structure. The core tooth shade was an A3.

**dl: Why did you choose this particular material for this patient case?**

**Werner Gotsch:** Do you want an honest answer? It's just between us



Preparation



(laughs) ... out of sheer curiosity! ceraMotion Hybrid zirconia is a two-layer zirconium oxide with different strengths (1020 Mpa to 1300 Mpa) and varies in translucency between 44 and 47 percent in five layers. The material is ideal for veneering, but also very well suited for monolithic restorations. A zirconium oxide of the very latest generation!

For the next patient case, two all-ceramic partial crowns on 11 and 21, I would have used high-strength glass-ceramics based on experience. Due to the enormous transparency of this group of materials, the shade of the prepared tooth stumps plays an important role and can also have a negative effect on the shade of our restorations. For this reason, the next work was created with ceraMotion Z HT Multishade. Deliberately with HT Multishade to support the incisal effect in the incisal area.

A detail from my lab work: Characteristics are created with ceraMotion One Touch for intermediate firing, my „creative painting“, as I like to call it. Modifiers are then applied in another firing and the tooth shape is completed.



The finished work, temporarily inserted



Incisal close-up

**dl:** Can you give us some insights into your working methods in this specific case?

**Werner Gotsch:** Of course. First, the patient's case is photographed; the dentist uses the diagnostic models and the images to create his concept. Usually I become involved from the preliminary planning stage onwards. The working procedure is absolutely identical for all my dentists. For me, the best possible approach to compensate for any color deviations in this case is not a highly translucent pressed ceramic, but the more dense-looking new Multishade zirconia.

**dl:** And also the same procedure again in this case?

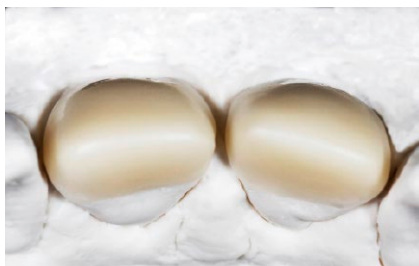
**Werner Gotsch:** Yes, we always follow the same protocol, if you will. First the diagnostic models, and then photos to discuss the case in question.



The initial situation: Profoundly filled and discolored middle incisors and a partially fractured 21 due to a fall



The zirconia frameworks on the model



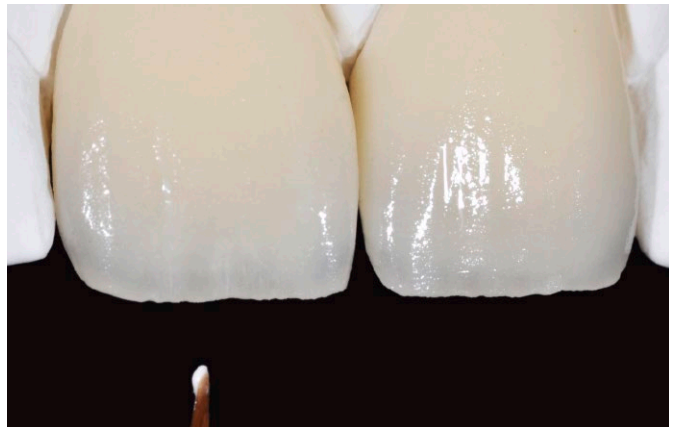
The Multishade frameworks from incisal (ceraMotion Z, Dentaaurum)



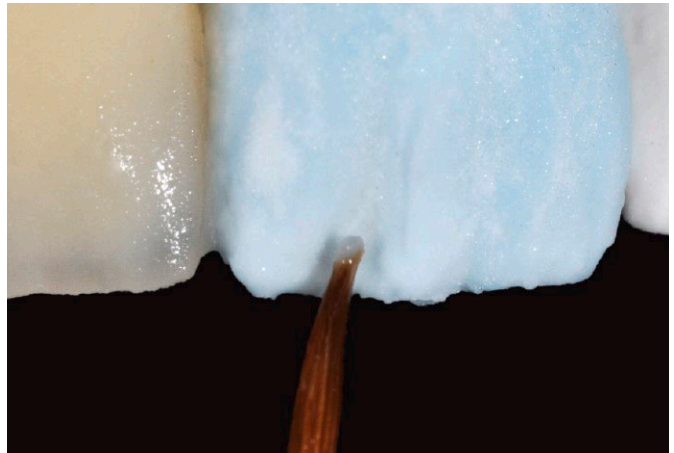
Frameworks in situ



After the first firing: Dentin incisal layering as a base



The appropriate characteristics to bring our restoration to life are applied with ceraMotion one Touch pastes and fixed with an intermediate firing



The tooth shape is completed with incisal and transparent materials (ceraMotion Zr, Dentaurum)



The finished work. In this patient case, the problem was not so much designing the shade, but reconstructing a good tooth shape.

This is not always necessary, but I only want to show your readers exceptional cases.

**dl:** On which criteria do you base your choice of material?

**Werner Gotsch:** For this patient case, where only a very small and transient amount of enamel had to be reproduced, I opted for the single-shade cera-Motion HT version.

**dl:** What do you do in the case of a discolored tooth stump? Are all-ceramics even indicated?

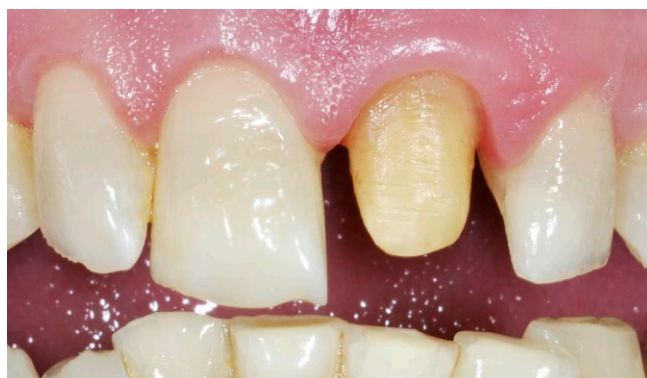
**Werner Gotsch:** That depends on the specific case. One has to see how dark the stump color is and decide flexibly. With metal-ceramic restorations, the problem is always limited to the transition area between the crown



The initial situation: Tooth 21 built up too wide and much too short with composite. The patient was referred to Dr. Triebel's practice. To eliminate this aesthetic handicap and to satisfy the patient's desire for a harmonious position and tooth shape, the dentist decided to restore tooth 21 with an all-ceramic crown. If a single anterior tooth needs to be replaced, my top priority as a dental technician is always to take the natural anterior tooth 11 as a blueprint and copy it as closely as possible. On 11, the tooth shape was subsequently optimized distally with composite.



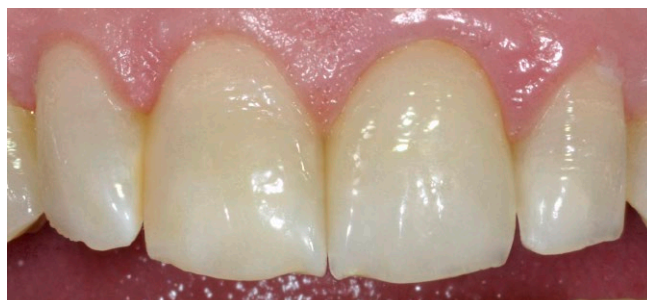
Diagnostic model from palatal



The prepared tooth stump 21



If necessary, the frameworks are reworked by hand to achieve a perfect working basis. In the case of veneers, a reduced tooth shape should always be aimed for.



The finished restoration in the mouth



and the tooth structure. But here, too, dentists naturally prefer to use all-ceramics. For the last case I am presenting, we opted for ceraMotion HT white as the framework structure.

There are two variants here: The translucent variant with 43 percent for the individual staining technique and the slightly less translucent variant with 39 percent. This is more suited to dark and discolored tooth stumps, as is required for our next case.

**dl:** What is decisive for the success of a restoration?

The prepared tooth stump: The advantage is that such dark teeth are usually devitalized, and the dentist can grind them at a maximum. If the framework can be made just two tenths of a millimeter thicker, this already has a very positive effect on the tooth shade. And another little tip: I apply a thin layer of what I call a wash dentin from the same shade group, but more intense, to this intense white to create a sort of primer. For example, if A3 is to be achieved, this primer is applied in a thin layer of A3.5.



The ceraMotion HT White framework in situ

The integrated restoration – a convincing solution with ceraMotion HT White despite the very dark subsurface





**Werner Gotsch:** It is never the exchangeable production technologies that make a laboratory successful, but always our colleagues, who shape our profession with their personality and their skills, which unfortunately often receives too little attention. The materials we process have a major impact on our commercial success, which is why I am constantly trying to improve and optimize my own work procedures. All the cases I have presented can hardly be solved economically due to the great

effort that is often associated with individual anterior teeth. ceraMotion and its various components passed this “stress test” with an „excellent“ rating.

My thanks go to Dentaureum, because without the industry there is no innovation, and to the entire practice team Dr. Triebel, Claus and Serena Triebel and Michelle Reimann from Selb in Upper Franconia. And finally, I would like to borrow a quote from Albert Einstein: “Nothing happens until something moves”. ■

## Dentaureum Ceramics...

... is one of the few companies worldwide with specialized knowledge in the development and manufacture of dental ceramics. The specialists from Angers in France have more than 30 years of experience in manufacturing glass ceramics and pastes. Since 1994, Dentaureum Ceramics is part of the German Dentaureum group of companies.

A specialist in dental ceramics, Dentaureum Ceramics is a pioneer in the fields of development and manufacture of glass ceramics without feldspar. Dentaureum Ceramics purposefully foregoes using feldspar, a natural product of varying composition. This ensures that each ceramic lot can be reproduced to meet the same high quality standard.

„Our teams consist of materials scientists, engineers specializing in biomaterials and dental technicians. They are

constantly looking for new developments that are important for the dental market, both in the medium and the long-term, irrespective of whether these come from Industry 4.0 or from the area of raw materials. Technologies and materials are developing all the time, calling for innovations. We are working hard to develop high-quality materials for digital ceramic restorations“, Dr. François Lelièvre, CEO of Dentaureum Ceramics, explains.

The latest findings in materials science from cooperations with international universities and external dental laboratories are included in the manufacture of their products. In the field of digital technologies, Dentaureum Ceramics is currently investigating new production methods for the manufacture of ceramic blanks and recovery in various forms.