

FOREWORD

Murilo Calgaro

EXCLUSIVE INTERVIEW

Prof. Angelo Putignano

„Follow your dream”

CASE REPORT

**Mastering the single central
shade matching with Matisse
software**

MARAT AWDALJAN MDT

CLINICAL REPORT

Dentogingival rehabilitation

CAMILA MAIA

FERNANDO PASTOR

JUVENAL SOUZA NETO

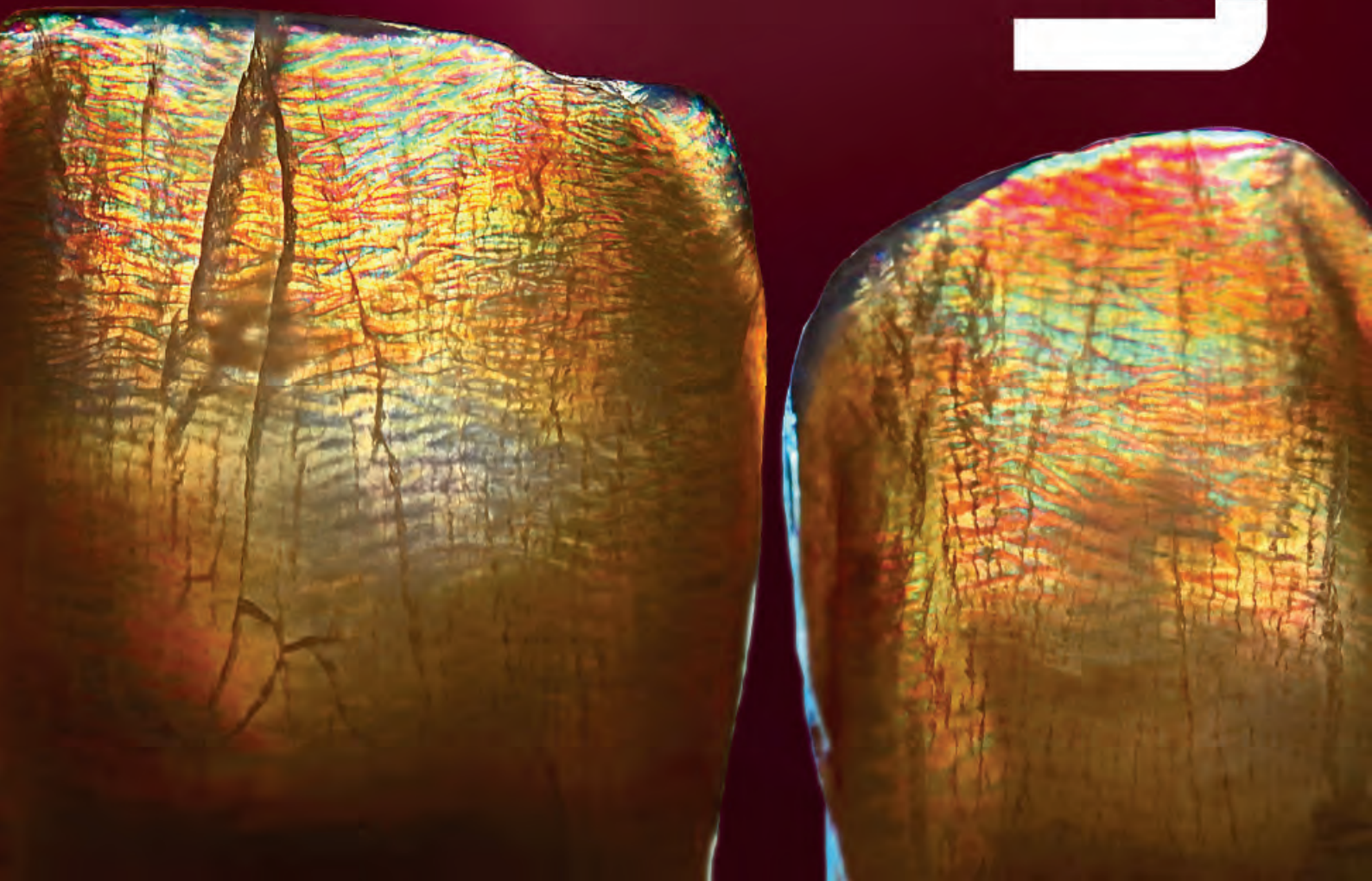
LABLINE ACADEMY

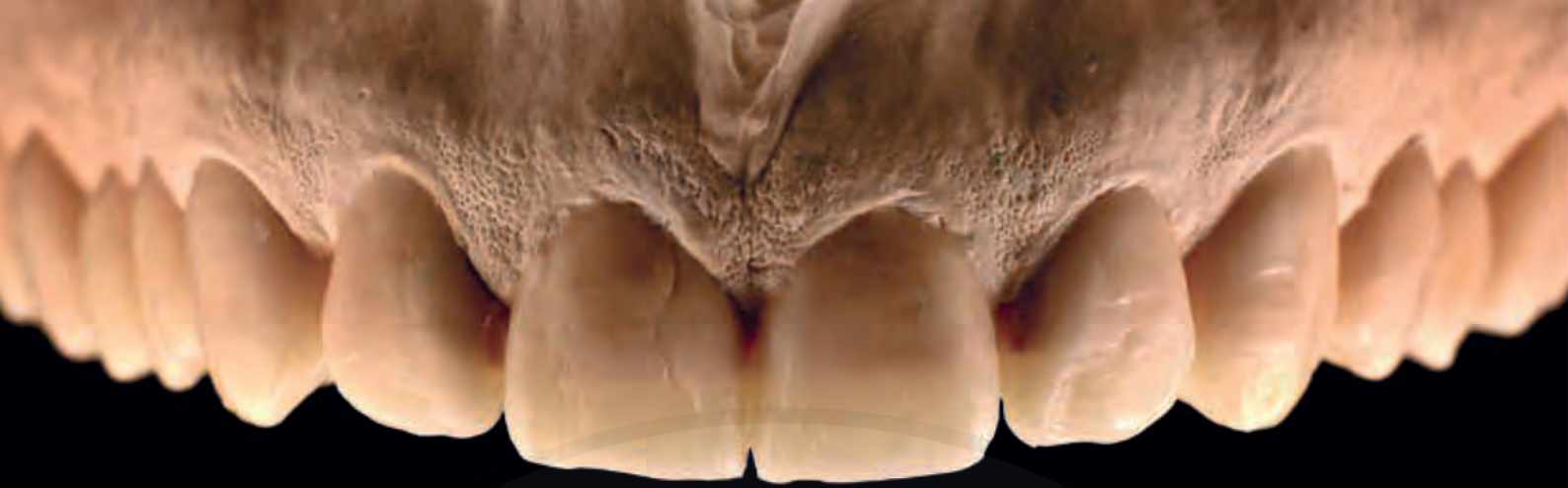
**It's a long way to the top if you
wanna Rock'n'roll!**

HANS-JÜRGEN JOIT

lablineTM

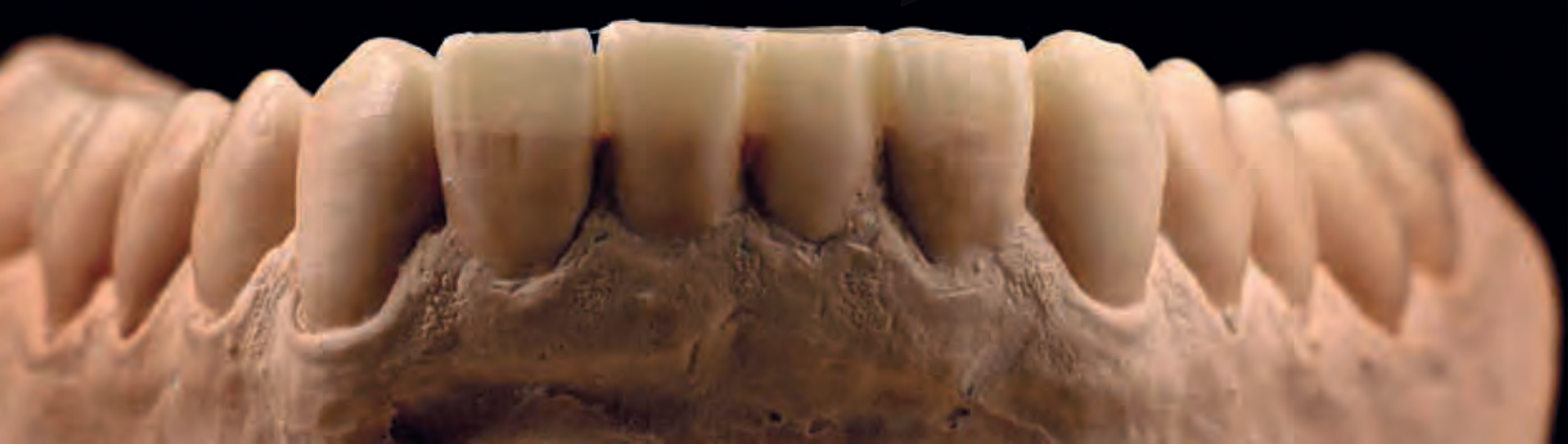
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IT'S A LONG WAY TO THE TOP IF YOU WANNA ROCK'N'ROLL!

HANS-JÜRGEN JOIT

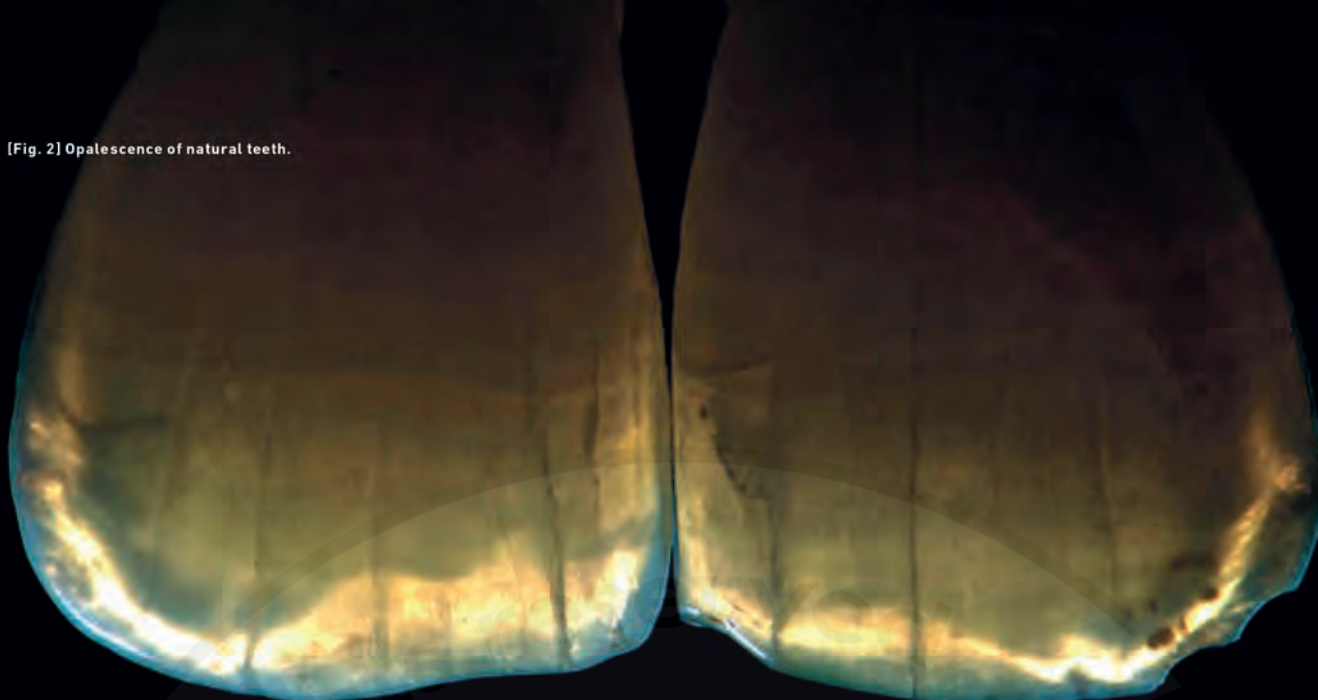


Being a top player is always a result of many hours of experience, training and practice. As dental technicians, we used to work with some different materials in the pre-digital era, our daily work was focused on dealing with just a few different ceramic strategies in ceramic work. Posteriors were often treated with gold restorations. Being a dental technician today means you have to deal with more digital features and some more different materials [Fig. 1]. Did times really change? I guess not too much. There are still some guys who do clean work and good morphology and a lot who just do their job. Material strategies had a big change by the invention of lithium disilicate, which, for the first time, brought nice esthetic features together with material strength.

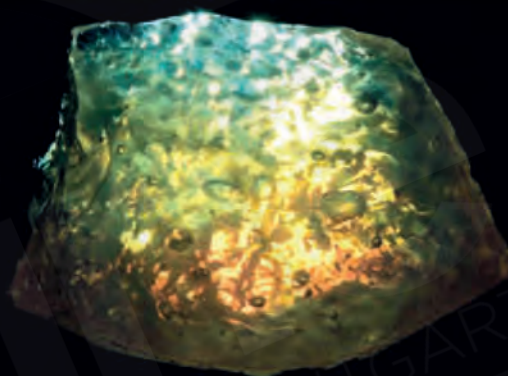


[Fig. 1] Nowadays the dental technician has to deal with a lot of different challenges.

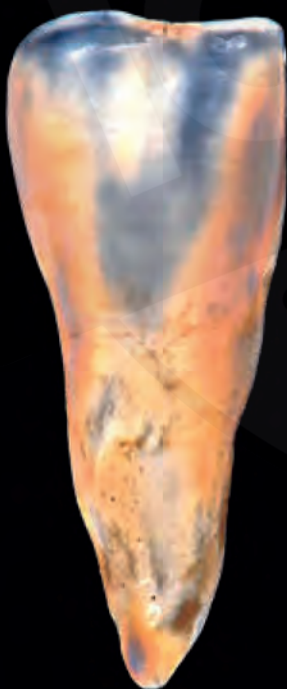
[Fig. 2] Opalescence of natural teeth.



Besides the morphologic qualities, there is one more incredible feature of the Celtra line, it makes natural teeth beautiful and special with opalescence [Fig. 2]. Some of our dental porcelains used to have a nice opalescence [Fig. 3].



[Fig. 3] Porcelain opal frit.



[Fig. 4] The optical power of Celtra Press.

As a technical consultant for companies in the dental industry such as Elephant Dental, DeguDent and Dentsply Sirona, I participated in the development of Celtra quite early. The first pressing material I had on my table, was not yet colored, but we immediately saw the incredible optical power accompanied by the extremely fine particle structure. I pressed a Celtra shell by the size of 0,5 to 0,6 millimeters, just stained it a little, and took this incredible shot with a cross polar filter [Fig.4].



Fig. 5

At the same time, we started the launch of Celtra Duo, which is the chairside variation of Celtra so far. It also has this fine structure and is very easy to grind and polish, which is a great feature for the intraoral use [Figs. 5 to 7]. Because of the chairside use, we did not have a layering porcelain for Celtra Duo, this was planned for the pressable Celtra. For some testing and for some showcases, I was able to layer it with the old Duceram LFC correction porcelain - the results were incredible [Figs. 8 to 10]!



Fig. 6



Fig. 7

[Figs. 5-7] Finest particle structure allows an easy workflow in grinding and polishing.



Fig. 8

[Fig. 8] Layering test on early Celtra Duo.



Fig. 9



Fig. 10

[Figs. 9-10] Celtra Duo restorations in perfect light balance.

I played a lot with the material to figure out its optical power, and I have to say: I could not wait for Celtra Press!

Figure 11 shows a crown in Celtra Duo Lt A2, just polished and fixed on a natural root with preparation. See how the crown becomes natural - it is still monolithic even without stain!



Fig. 11

[Fig. 11] Celtra LT A2 just polished, fixed on a natural root.

I also made different variations of posterior inlays and partial crowns on a showcase [Figs. 12 and 13]. At that time, I was not satisfied with the morphologic results too much, therefore I had to correct it by layering.

I was expecting the press material to be able to integrate my own version of morphology. During a visit in my Guru Klaus Mütterthies' lab, he gave me a piece of a human bone I found in a drawer - the last bone from Grenzweg... I prepared some crowns and did a little one-bake layering/glaze bake combination and the result also was so good [Figs. 14 to 17]!

Fig. 12



Fig. 13



Fig. 14



Fig. 15



Fig. 16



[Figs. 12-13] Producing showcases for manuals and brochures. The light transport is unbelievable!

[Fig. 14] Celtra Duo correction/Glaze bake.

[Fig. 15] A great feature: the firing pad.

[Fig. 16 and 17] „The last bone from Grenzweg“, out of the drawer of Klaus Mütterthies' working bench.

Fig. 17





[Fig. 18] „Let there be light“: the new language of picturing all ceramics.

Back in the 90s, my friend Claude Sieber defined dental photography. Anything we see today, he used to do analog back in the days. At a 1998 course in Claude's house, he showed us pictures with a white background, which turned out to be a more or less average technique of the opinion leaders around the first years of the second millennium. Being the dance leader who had to take the first pictures for the Celtra image campaign, I thought to myself: it might be a meaningful way of expression, to show the incredible, balanced translucency and depth of Celtra by taking pictures with a flash from the back with models made of clear resin, so the material would look like hovering free without manipulating it by software [Fig. 18].



Kai Pfeiffer - Product Manager for Celtra.



The following months and years were filled with lots of tests and mailings. I would do each anterior case in emax or cercon with Celtra Press at the same time, I would compare the features, send photos back to Kai Pfeiffer, the product manager and Marcus Vollmann, the head of Celtra development unit at Dentsply Sirona. We discussed, we changed, we tried and we discussed again for about one and a half years and I still did not have the finished version of my material on the table.

But we drew closer. I had some nice versions of Celtra Press to prepare the advertisement.

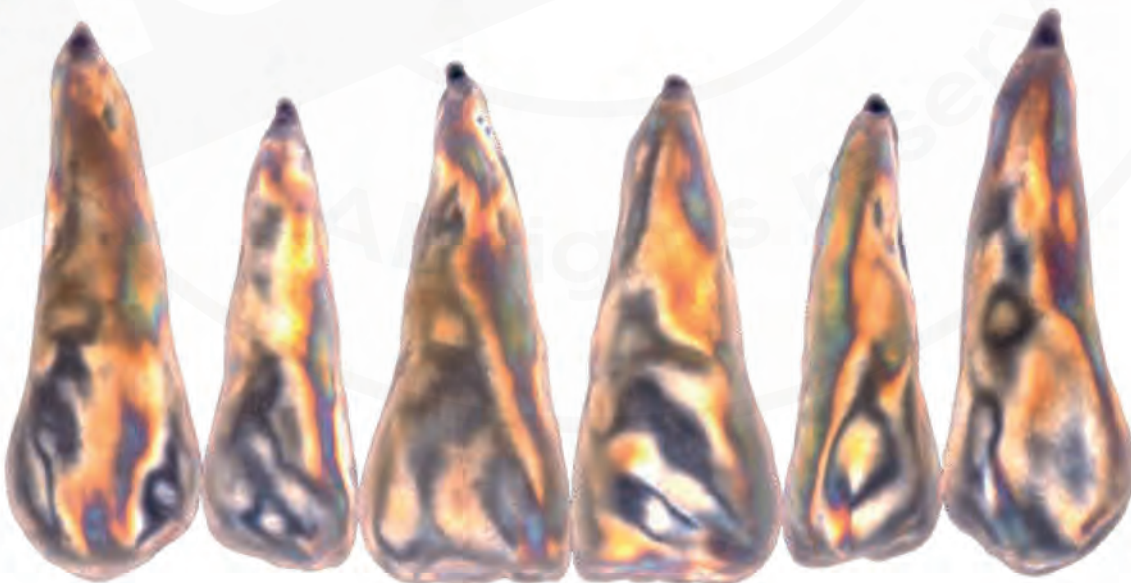
See those six Celtra Press shells, about 0,5 to 0,6 millimeters of thickness, just placed in the window with sunlight shining through [Fig. 19]. It catches the sun, doesn't it? **Figure 20** shows the same shells through a cross polar filter. See the incredible optical power!

Fig. 19



[Fig. 19] Six Celtra shells in the sunlight.

Fig. 20



[Fig. 20] The same six shells photographed with a polar filter.

Fig. 21



[Fig. 21] Comparison - Upper and middle: Celtra LT and MT. Lowest: the old lithium disilicate.

Later, I had a case to do in average lithium disilicate. I compared the average stuff to Celtra Press in a polar filter photo. [Fig.21]. The lowest is average material, the middle and upper are Celtra Press MT and LT.

While I was doing a veneer case on investment, I had the chance to do a parallel experiment: two Celtra Duo veneers, layered in five minutes with just Opal Blue from the Duceram LFC. I did not care about the form, because this was not the final work. I just tried in a quick shot. Look at the result [Figs. 22 to 24]. For the first time, I saw artificial material that looked like tooth material. I was crazy

about receiving the finished Celtra Press! We went ahead producing pictures for the brochure.

US technician Carlos Montaner had the idea to press some flower to visualize the pressing abilities of Celtra, so I finally pressed this beautiful orchid [Fig. 25]. See how detailed everything came out...



Fig. 22



Fig. 23



Fig. 24

[Fig. 22 to 24] SideKick attempt: Try-in of two Celtra Duo veneers with LFC opal B.

[Fig. 25] Pressing abilities with the orchid experience.



The more I worked with the material, the more I found out: in many cases you do not need too much of layering. These two 3-unit bridges are a wax modellation, slightly reduced in the incisal [Fig. 26]. The flowability makes an easy pressing

with just one sprue [Fig. 27]. After divesting and fitting on the model, little parts of the incisal area were internally stained and fixed with a low bake on C 750° [Figs. 28 and 29]. Incisal correction powder [Fig. 30] and a little workout [Fig.31].

Fig. 26



[Fig. 26] Wax modellation of two 3-unit bridges.

Fig. 27



[Fig. 27] Three units pressed with one sprue.

Fig. 28



Fig. 29



[Figs. 28 and 29] The bridges after pressing with homeopathic incisal internal staining.

Fig. 30



[Fig. 30] Layering with just one correction powder.

Fig. 31



[Fig. 31] A little workout after firing.



Fig. 32

One more incredible feature of this system: if you use the universal glaze of this system in the right consistency [Fig. 32], it is possible to create a surface structure you will never be able to grind and there is just one bake needed whether on Celtra, emax or zirconia. This was pre-Miyo and it still works fine. The result of semi-monolithic work [Figs. 33 to 35]: two beautiful 3-unit bridges with perfect opacity and saturation. The universal colors in combination with the glaze allow us to create the perfect illusion in color and surface [Figs. 36 to 39].

[Fig. 32] The Celtra glaze is able to create a lifelike surface structure.



Fig. 33



Fig. 34



Fig. 35

[Figs. 33 to 35] The beauty of Celtra Press. Semi-monolithic in perfect balance.



Fig. 36



Fig. 37



Fig. 38

[Fig. 36] A very nice color range of universal stains.



Fig. 39

[Figs. 37 to 39] Monolithic staining sometimes looks like nature.

After we had worked on Celtra Press for a long time, I was able to make our very first final restoration for a patient's situation: one upper molar [Fig.40]. Everything is perfect: fit, opacity, surface and it chews very well, like the patient said. The following months I was able to try out more and more cases, but Celtra Press was still not launched. My focus for the base material was a perfect balance of opacity and saturation. In most of the cases, we still use dentin colors like A1, A2 and so on for color communication. So in my opinion, the body area needed a perfect fit. The single central veneer we see in Figures 41 and 42 has just a little incisal layering, the body area is just stained.



[Fig. 40] The first ever inserted Celtra Press onlay!



[Fig. 41] My focus was always on a perfect balance of opacity and saturation. Single veneer.

One of my dentist clients wanted a temporary Maryland bridge for an old lady pre-implantation. I decided to make two one-winged Celtra units [Figs. 43 to 46]. When he finished his treatment, he called me back and told me, that both he and his patient liked the Celtra pieces so much that they decided to keep them as definitive prosthetics, which made us proud.



[Figs. 43 to 46] Two „temporary“ definitive fixed Maryland bridges.

Figures 47 and 48 show a beautiful single central, with just a little layering and some staining. Now our first complete upper anterior case was about to be completed. Still, there were just a few layering powders available, so the layering was not complex, but the main feature - the body area showed a perfect balance again [Figs.49 to 51].



[Figs. 47 and 48] An early case of Celtra Press, mostly stained, a little layering.



[Fig. 49] The initial situation of our first complete upper anterior with the new material.

[Fig. 50] Preparation.



[Fig. 51] Six crowns pressed in LT A2, layered just with a few powders.

One dentist had his office just around the corner. He was running a little lab in his practice and he wanted me to do a course for his technicians. Some time before he had put a crown in a patient's mouth which was, let's say ...not really perfect [Fig.52]. What had happened? His technicians used lithium disilicate in translucency HT. First mistake. Remember, stable body color. Second mistake: they chose the ingot in the final value, which is not right, working with glass ceramics. It is possible to get this material darker, but not possible to make it brighter. Third mistake: the crown turned out greyish, so the doctor decided to use an intensive chroma color like A3. It turned orange, but much too dark. Of course, all „A twos“ are different [Fig. 53]. In the past, I tried to figure out a safe processing system for average lithium disilicate by trying to bring it to the same looks as felspar porcelain on investment [Figs. 54 and 55], but I could not make it. The color and translucency range of the different HT, MT and LTs was too chaotic. We are lucky to be able to work with a linear, well-balanced system now.

Back to our case: it is easy to darken glass, but difficult to raise the value, so we choose the brightest part of the tooth for our ingot, which in this case is A1 [Figs. 56 and 57]. LT A1. I did some measurements with the @LAB greycard for better understanding and I found that still, material thickness is the key to success. At a thickness of 0,6 mm, the Celtra bleach frame is influenced by the value of the darker stump material [Fig. 58], but at a thickness from 0,9 to 1,2 mm, there is not much difference in luminosity (L) left [Figs. 59 and 60]. However, the dentist prepared the situation again, and it was only three days before we did the try-in, so the gingiva was not in a perfect condition [Fig.61], but my crown was [Fig.62].



[Fig. 52] The initial situation of a case for an „in-office course“.



[Fig. 53] „All A2s are equal. Some are more equal“.



[Figs. 54 and 55] Trial and error. How to make an imbalanced system conceptional?



[Figs. 56 and 57] Take care of the light. It is easier to make glass ceramics darker. Always look for the brightest spot.



[Fig. 58] The value of the darker stump gives a lot of influence on the luminosity of the 0,6 mm Celtra frame.

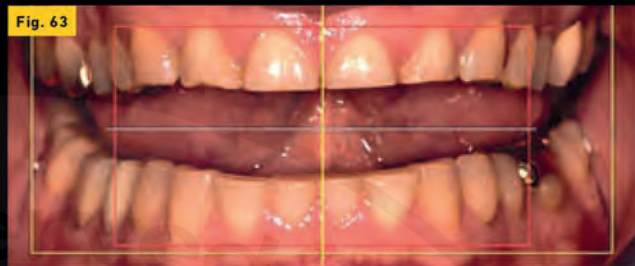
[Figs. 59 and 60] From 0,9 to 1,2 mm the influence is less.



[Fig. 61] Try-in of the layered Celtra Crown.

[Fig. 62] Three days post-prep the gingiva is not yet in best condition. My crown is.

We were working on the brochure, Celtra was not launched yet, so I urgently needed a nice case for advertising, therefore I was very happy when this patient showed up: a middle-aged male with top gingiva conditions, but his teeth were milled down [Figs. 63 to 68]. We captured the initial situation in a higher position in the articulator and my colleague Moritz Pohlig did a very nice complete waxup [Figs. 69 to 72].



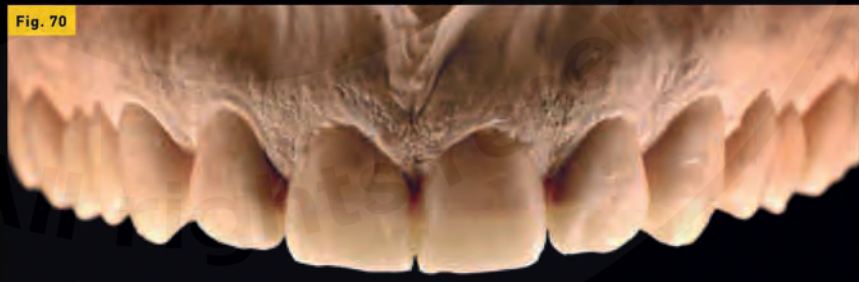
[Fig. 63] Levels and lines.



[Figs. 64 to 66] Initial situation: this patient has lost some substance.



[Figs. 67 and 68] The vertical dimension seems too low, but the gingiva is still in good condition and there are a lot of teeth left.



[Figs. 69 and 72] Initial modellation in higher position by Moritz Pohlig.



Fig. 73

[Fig. 73] The segmented tray by Joit.

To help the dentist to fix the mockup in the patient's mouth, I created the „segmented tray by Joit“ **[Fig. 73]**. The dentist will be able to bring the waxup situation into the patient's mouth by pressing on the thumb through. After hardening of the temporary material, he will be able to remove the top, which keeps the sides together **[Fig. 74]**, remove the sides **[Figs. 75 and 76]** and easily remove a thin putty form **[Fig. 77]**. The resin will stay in position and working is relaxed as it should be.

After the patient used the mockup for a few weeks, he wanted to finish the restoration **[Figs. 79 to 81]**.



Fig. 74

[Fig. 74] Remove the top...



Fig. 75

[Fig. 75] Remove the sides...



Fig. 76

[Fig. 76] Remove the sides...



Fig. 77

[Fig. 77] Remove a very thin putty form.



Fig. 78

[Fig. 78] The single components.



Fig. 79



Fig. 80



Fig. 81

[Figs. 79 to 81] After wearing the mockup for some weeks, the patient was ready to finish his case.

After the dentist did some partial and some crown preparations, we scanned the models for the construction of 32 units crowns, veneers, partial crowns and no-prep restorations [Figs. 82 and 83]. The prep situation was matched with the initial modellation [Figs. 84 to 87]. We did little corrections to adapt the waxup to the preparation and to keep the material thickness [Fig.88] for the milling of 32 units in wax. After pressing 32 units in Celtra, we devested all with the Effegi Brega Atlantis Rack [Fig. 89], which is a very quick and comfortable water devested, and we were able to clean the remaining investment with the sandblaster [Fig. 90].



[Figs. 82 and 83] The preparation model after scanning.

[Figs. 84 and 86] The initial waxup was matched with the preparation.

[Fig. 87] Partially, the veneers are very thin and in other parts thick and compact.

[Fig. 88] The construction had to be adapted on the preparation.



[Fig. 89] Devested with the Atlantis Rack.



[Fig. 90] After water divesting there is a little investment for sandblasting left.

The initial fit within the Celtra system by just using the investment like it is written in the manual, is incredible [Fig. 91]. The material structure is so fine that it is possible to adapt the preparation line with a rubber wheel to create a perfect fit.

[Figs. 92 and 93] The Celtra Press units on the models. The restoration was made mostly by staining, I just added a little Celtra Ceram layering porcelain here and there. It is not possible to see a line between stained and layered areas because the veneering porcelain fits perfectly on the base material.

16 full and partial cemented Celtra Press units in the upper [Fig.94].

32 units after pressing and finishing with partial minimum touchup layering [Fig.95].



Fig. 91

[Fig. 91] Incredible initial fit after pressing with the Celtra system.



Fig. 92



Fig. 93

[Figs. 92 and 93] The Celtra units on the models, ready to deliver.

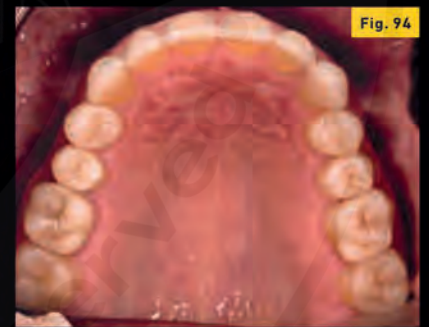


Fig. 94

[Fig. 94] Inserted. Partial crowns, veneers and no-prep units.



Fig. 95

[Fig. 95] 32 Units after finishing.

Figures 96 to 98 show the situation intraorally after cementing. Though the value of the patient's situation was A3,5 to A4, we used Celtra MT A2 ingots to create a more friendly appearance. Partially, the material

thickness is about 0,4 mm, but you can hardly see a parting line between natural and artificial material. The surface is nice and the patient's character is highlighted. Everybody was very satisfied with this result.



[Fig. 96] Celtra Press, stained with a little touchup layering in some areas.



[Fig. 97] With Polar Eyes you cannot see much of a difference.



[Fig. 98] Pictured with a bouncer, the surface appears.

Like we described in the last case, we mostly start working on patients' situations with a waxup. Usually, we create a prep navigation around these waxups as you can see in Figures 99 and 100. The dentist is able to do a perfect preparation within these putty negatives. Usually, we will do a scan of the waxup, a scan of the cutting model and a scan of the gingiva model, and then match them all together to work with all the information we have [Figs. 101 to 104]. After milling the construction in wax, we decide how extended our layering will be from case to case, depending on the material [Fig. 105].

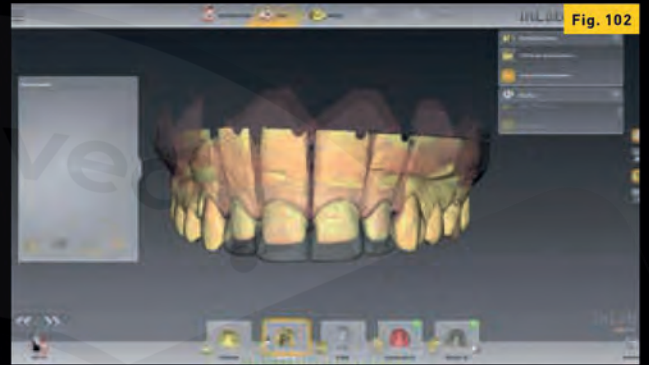
To bring dental restorations to a high end, it is important to produce a tooth-like surface structure. If our crowns are too glossy, they might look artificial. If the surface structure is too strong, they do not look like teeth at all. The miracle of creating natural looking restorations is described with just one word: balance. In this case, we finished the surface with Poliresin by Hinrichs Dental [Fig. 106]. You can see the perfect value and color balance in the polar filter picture [Fig. 107] and the perfect balance of the surface on the bouncer photography. Everything is perfect and that is how it should be.



[Fig. 99] The base of a successful treatment is planning.



[Fig. 100] Prep navigation for an anterior restoration.



[Figs. 101 to 104] Waxup, cutting model and gingiva model are matched to use all the information we have for the construction.



[Fig. 105] Reduced Celtra Ceram layering on Celtra Press MT.

[Fig. 106] Very important: Poliresin finish.



[Fig. 107] Polar Eyes photography.

[Fig. 108] In perfect balance. Surface, color, function. It all fits!



MDT HANS-JÜRGEN JOIT

- 1988: exam at Roger Negele in Duisburg
- 1989: he returned to dental technology, after excursions into the goldsmith's art, music and the fair construction.
- 1999: Admission to the studio Dieter Bölte, gnathology and casting technology specialist
- 2001: external master examination in Düsseldorf
- 2002: self-employment under the name Linie Düsseldorf Dental, head of the E.max temple Düsseldorf
- Since 2005 consultant for functional aesthetic concepts for the following companies: DeguDent, Dentsply Implants, Schütz, Elephant Dental.
- Further education by worldrenowned professionals such as Klaus Mütterthies, Claude Sieber, Enrico Steger, Willi Geller, Thilo Vock, Uli Werder, Peter Lerch, Christian Berg, Jürg Stuck, Gérald Ubassy, Andreas Nolte, Michael Brüscher, Wolfgang Weisser, Michael Seitz, Michel Magne etc.
- Numerous publications in various dental magazines, see at www.learningbyburning.com
- Lectures internationally in Seoul University / Korea, Sokcho City Dental College / Korea, Dentsply World Symposium, Lab Summit / Allgaeu, Interna of DGÄZ / Westerbürg, Dental Technology Working Group, Dental Technology Conference St. Moritz, Simply Dental Technology by Jürg Stuck, Digital Dentistry Fachkongress, Dentsplysirona World Orlando etc.

