

**IPS e.max<sup>®</sup>**

# SPECIAL EDITION

IPS e.max<sup>®</sup> Ceram



*Oliver Brix*

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**ivoclar**  
**vivadent**<sup>®</sup>  
passion vision innovation

# Innovation emerges from experience, ...

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... which, when exchanged, creates knowledge.

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## Power Dentin and Power Incisal materials ...

In order to reproduce the appearance of natural teeth and their structure with respect to the tooth colour, it is important to achieve the correct brightness value and depth. This is still one of the most difficult tasks in the production of dental restorations.

The balance between opacity, depth and colour must be selected in such a way that the shade remains consistent, irrespective of changes in lighting. In addition, the layering concept must be reproducible and manageable with the least possible materials.

The IPS e.max® Ceram Power Dentin and Power Incisal materials, which we helped to design, comprise exactly these characteristics: Shade matching capability and a well-matched brightness value. They are the ideal addition to the IPS e.max Ceram range.

This Special Edition contains a few interesting examples of how IPS e.max Power Dentin und Power Incisal materials can be used.



... with a perfect level of brightness



Brightness comparison: Layered example with IPS e.max® Ceram Dentin and Incisal



Layered example with IPS e.max® Ceram Power Dentin and Power Incisal

## Selection enamel and effect materials ...

The IPS e.max Ceram Selection Materials consist of 12 Special Enamel and Effect materials, which were created in collaboration with August Bruguera (Spain), Gérald Ubassy (France), Marie Witt and myself. Our aim was to use our years of experience with IPS e.max Ceram to create new, specially shaded materials, which ideally complement the IPS e.max Ceram Impulse range and bring the creativity and joy of fabricating an individual ceramic build-up back into the laboratory.

The IPS e.max Selection materials:

### Special Enamel

Shaded Enamel materials



### Light Reflector

Light-reflecting Effect materials



### Light Absorber

Light-absorbing Effect materials



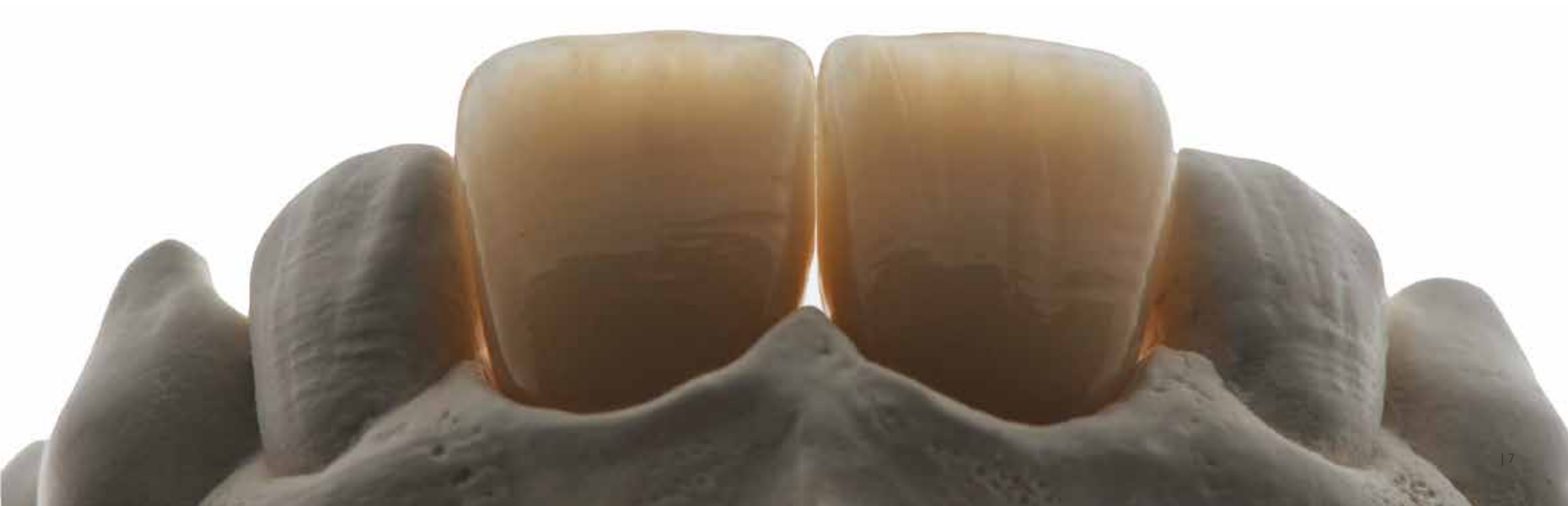
IPS e.max Ceram Selection shades by Oliver Brix and Marie Witt:



- **Aqua** is an intensive enamel material which enhances the translucent bluish effect along the incisal margins.
- **Citrine, honey, apricot** and **quartz** can be used to adjust the colour saturation and chroma and to accentuate the incisal area.



... with impressive light-optical properties



# Patient case #1 Step by step

Prepared tooth situation



Crown preparation on tooth 11, discoloured tooth



## Selecting the tooth shade and the brightness



The shade selection is performed on tooth 21 using four shade samples for comparison. Tooth 11 with a temporary restoration.



Polarizing filter images are recommended for assessing the level of brightness and its progression.

## Visualization of internal characteristics and determination of the dentin material



The internal characteristics can be visualized by increasing the contrast in the polarizing filter image.



A clear definition of the dentin material to be used is determined through the polarizing filter image with four shade samples. The basic shade is A1, however the cervical area has more chroma.

## Model situation and framework structure



Model situation



IPS e.max® Press MO (Medium Opacity) coping in shade MO 0 after the wash bake and characterization with IPS Ivocolor shades

The MO 0 ingot is ideally suited for creating substantial brightness from the depths. Surface modification using IPS Ivocolor Shades allows any target shade to be achieved with reliable brightness.

## Build-up of the dentin core



In order to stabilize the interdental brightness, Deep Dentin is applied proximally.

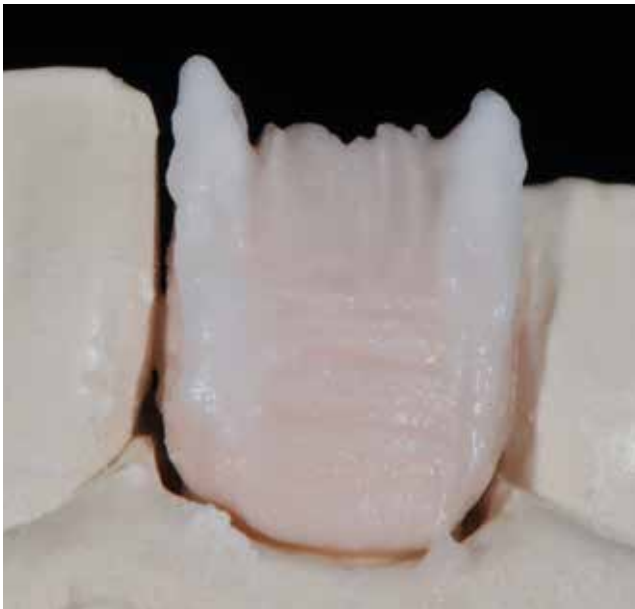


To create a natural transition of the cervical shade to the gingiva, apply Power Dentin + Opal Effect 5 and/or Power Dentin + Mamelon Light + Gingiva 4.



The dentin build-up is carried out with Power Dentin. The incisal third is made up of normal Dentin. This creates a gradual progression within the dentin.

## Build-up of the incisal plate



First, the boundaries of the incisal plate are built-up at the proximal edges with Power Incisal 2.



This is followed by the application of stripes using Power Incisal 2 and Transpa Incisal 2 to complete the incisal plate.



By filling-in with the Effect material Opal Effect 4, accents of brightness can be integrated.

## Cut-back technique



The result after the first dentin bake



Next, incisal and proximal grinding adjustments are made (cut-back). This procedure allows colour effects and translucency to be selectively adjusted.



Enlarged image of the reduced areas



## Completion and intermediate bake



The cut-back areas are supplemented with Special Enamel aqua to enhance the bluish translucent effect.



Now the mamelons are completed using Mamelon yellow-orange + Occlusal Dentin orange. A vertical band is created in the incisal third using Special Enamel quartz.



Result after the intermediate bake: The low end temperature of the new firing parameters means the ceramic sinters perfectly without having to alter the first bake. This procedure allows precise colour accents to be placed.

## Internal shade bake



To imitate a whitish discolouration in the enamel, an internal shade bake is carried out with IPS Ivocolor Essence white + 50% Impulse Opal Effect 4. Cracks in the enamel can also be delicately applied at this point.



Result after the internal shade bake

## Build-up of the enamel coat



The individual application of the enamel coat is carried out using Special Enamel honey and Transpa Incisal 2 + Opal Effect 1.



The incisal third is completed with alternating layers using the new Selection Enamel materials. For an overview of the Selection Enamel materials see page 6.



Finished build-up

## Completion



The result after the second dentin bake



After the glaze bake with IPS Ivocolor



The finished crown after polishing

## Result



A detailed view of the inserted crown with particular focus on the surface structure

# Patient case #2



Implant restoration 21 with screw-retained, individualized and fluorescent zirconium oxide abutment



The polarizing filter image shows a perfect match between shade and brightness.



Inserted, full veneered IPS e.max® Press crown (LT ingot)



# Patient case #3



Restoration 13–23 (teeth 13, 12, 23: IPS e.max® Ceram veneers on refractory dies, teeth 11–22: full veneered ZrO<sub>2</sub> bridge)



The polarizing filter image shows a perfect match between shade and brightness.

# Patient case #4



Restoration 14–24: teeth 14 and 24 – monolithic IPS e.max® Press crowns (Multi ingot), teeth 13 and 23 – IPS e.max® Ceram veneers on refractory dies, teeth 12–22 – full veneered IPS e.max® Press crowns (MO 0 ingot), tooth 21 – implant crown with zirconium oxide framework



