Tissue preservative dentistry in a league of its own

In a rarely occurring combination, we have managed to get no less than 7 members of The Bio-Emulation Group to speak in Oslo. The event will take place the 7th-8th of September 2018, with a networking dinner at restaurant “Festningen” on the night of the 7th. The Bio-Emulation Group is one of the most exquisite groups concerning tissue preservative dentistry, and it is extremely rare to have so many members of the group gathered at once. Therefore, it is a unique opportunity to get a thorough overview of the entire bio-emulation way of thinking and techniques. The following lecturers will speak at Bio-Emulation Symposium:

Dr. Panagiotis Bazos // The Spectrum and Applications of Cross Polarized Imaging // Page 4

Dental technician Sascha Hein // “eLABor aid®” – a New Dawn in Shade Matching! // Page 5

Dr. Stephane Browet & Dr. David Gerdolle // Cracks: Breaking the Code without Falling Apart // Page 6

Dr. Stephane Browet // Magnification: Fashion, Fiction or Passion? // Page 7

Dr. Gianfranco Politano // New Concepts in Real Adhesive Preparation // Page 8

Dr. Javier Tapia Guadix // The Single Central Challenge: Emulating Nature with Composite or Ceramic // Page 9

Dr. David Gerdolle & Dr. Lucas Zago Naves // The SEM Project – From Macro to Micro to Nano // Page 10

About the speakers

Dr. David Gerdolle

Dr. David Gerdolle gratuated from the Dental University of Nancy in 1993. Since then, he has achieved a number of Postgraduate Diplomas from the Universities of Paris and Gothenburg in Oral and Osteo-articular Biology, Implantology, Prosthodontics, and Adhesive Dentistry. David has been member of the teaching staff of the University of Nancy between 1993 and 2005, and he has been running a private practice in Vevey-Montreux since 2006. His practice is dedicated to conservative and minimal invasive dentistry. David is currently directing a Postgraduate Certificate at the University of Paris and is also involved in research programs on resin composites in the University of Nancy. He lectures in seminars and congresses worldwide, and he also makes hands-on courses and performs live demonstrations on patients in the field of adhesive and minimally invasive dentistry. As an author or a co-author, David has published widely in scientific national and international journals on this topic.

Dr. Gianfranco Politano

Dr. Gianfranco Politano finished dental school at Modena University, in the north of Italy. In 2011, he founded the Bio-Emulation group together with Panaghiotis Bazos and Gianfranco Politano. He is an active member of S.I.D.O.C.: Italian Society of Conservative Dentistry as well as “warm gutta-percha study club”. He has been invited to several universities around the world to speak about his layering technique and his studies about optical behavior of natural dental tissues. He collaborates with different universities for researches about adhesive restorative techniques and biomechanics behavior of the tooth. He also collaborates with KUL University, Belgium, with Prof. M. Peumans and Prof. B. Van Meerbeek about different studies on bio_mechanical behavior of the tooth and new shapes of prepara-
tions for indirect adhesive restoration. He is a reviewer for different journals of adhesive dentistry. He is an international lecturer and he has published several articles about direct and indirect adhesive restorations.
Dr. Panagiotis Bazos
Dr. Panos Bazos received his DDS from the University of Southern California School of Dentistry in 2000. He served as an Assistant Professor at the Herman Ostrow School of Dentistry of USC, Division of Primary Oral Health, Los Angeles, CA. from 2005-2007, mentoring undergraduate dental students in the disciplines of Dental Morphology and Restorative Dentistry. Upon returning to Europe, he maintained a private practice limited to esthetic and restorative dentistry in Athens, Greece. In 2011, he founded the Bio-Emulation Group which constitutes a global think tank that promotes excellence in dental restorative techniques. In 2016, he completed his postgraduate specialist degree (MClinDent) in Orthodontics and Dentofacial Orthopaedics at the University of Edinburgh, Scotland and has qualified with the Royal Colleges of Surgeons of Edinburgh (MOrth RCS Edin).

Dr. Stephane Browet
Dr. Stephane Browet finished dental school at the Free University of Brussels in 1995. He there then followed the Post Graduate Program Aesthetic Dentistry. From 1999 on, he has taught rubberdam techniques and adhesive dentistry. He combines nationally and internationally teaching in rubberdam isolation, microscope dentistry, posterior and anterior composites, as well as indirect restorations with a private practice focused on microscope aided restorative dentistry. From 2002 until 2005, he was active in the Scientific Board Conservative Dentistry at the Institute for Continued Education of the Society of Flemisch dentists. He is also a past board member of the Belgian Academy of Esthetic Dentistry, a past board member and member of the Academy of Microscope Dentistry, a member of the European Society of Microscope Dentistry, and an active member of the Bio-Emulation Group.

Dr. Lucas Zago Naves
Dr. Lucas Zago Naves graduated in Dentistry at the Federal University of Uberlândia in 2006. As an undergraduate, he was involved with several scientific studies and has to date published numerous papers in recognized scientific journals like Journal of Dental Research, Journal of Dentistry, Archives of Oral Biology, Microscopy Research, and Technique among others. In 2007, he started his Master’s degree at State University of Campinas (FOP-UNICAMP), one of the centers of excellence in dental science in Brazil. In 2009, he joined the PhD course, completed it in 2011, and immediately after enrolled as a postdoctoral fellow researcher at the same institution. In the period 2011-2013, he became a resident in Prosthodontics and eventually received the title of specialist. Nowadays, Lucas Naves has a private office dedicated to biomimetic and minimal invasive dentistry at his hometown, Uberlândia, Brazil. Lucas is also a professor at Pitagoras University at Uberlândia where he teaches Dental Morphology and Dental Histology. Lucas is also a Bio-Emulation member and works in worldwide collaboration with clinicians, researchers, and dental technicians.

Dental technician Sascha Hein
Dental technician Sascha Hein commenced his training in dental technology in Germany where he graduated in 1997. Subsequently, he worked in several dental laboratories in Europe and the United Arab Emirates. In 2001, he completed further studies in dental ceramics under Masahiro Kuwata in Tokyo, Japan. In 2004/2005, he attended Master School in Freiburg, Germany where he graduated top of his school and won silver in the annual Kanter Award Competition which awards Germany’s top three Master students. In 2007, Sascha Hein was inducted into the international Oral Design group by founder Willi Geller. Since 2011, he has served as an editorial board member of the German Quintessence of Dental Technology. In 2012, he was inducted into the Bio-Emulation group which constitutes a global think tank that promotes excellence in dental restorative techniques. In 2016, he completed his postgraduate specialist degree (MClindent) in Orthodontics and Dentofacial Orthopaedics at the University of Edinburgh, Scotland and has qualified with the Royal Colleges of Surgeons of Edinburgh (MOrth RCS Edin).

Dr. Javier Tapia Guadix
Dr. Javier Tapia Guadix finished dental school at the European University of Madrid in 2003. He then worked as an associate professor in the prosthetics department during 2004. In 2005, he started his career as a professional computer graphics artist with focus on illustration, animation, and application development. He founded the company Juice - Dental Media Design for this purpose. He received the Collegiate Merit Award by the Spanish College of Dentists from the 1st Region in 2005 for his collaboration in the commission of new technologies. In 2011, he founded the Bio-Emulation group together with Panagiotis Bazos and Gianfranco Politano. He actively collaborates with several universities across Europe and is member of GC Restorative Advisory Board. Dr. Javier Tapia Guadix works in his private practice in Madrid which is focused on restorative dentistry and aesthetics. He is an international lecturer who has participated in more than 200 congresses, hands-on courses, and live courses. He has published several articles in restorative dentistry, dental photography, and computers in dentistry.

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The Spectrum and Applications of Cross Polarized Imaging

Over the last decade, there has been a profound interest in newer photographic illumination techniques aimed at increasing the accuracy and objectivity of dental diagnostic ability, shade evaluation, and laboratory communication.

In order to minimize the user-dependent errors in the clinical practice, it is necessary to develop reproducible imaging modalities and objective image analysis methods. Reflective cross polarized light photography mitigates unwanted specular reflections and hot spots in addition to spectral highlights which obscure the fine details of hard and soft dental structures whilst providing a high contrast/hyper-saturated dental image to be objectively analyzed. This imaging technique which is non-contact and non-invasive is used to enhance the visibility when assessing dental images and has many translation applications.

You will learn:

• To distinct between reflective and transmissive cross polarized imaging modalities.
• To expand upon the spectrum of applications of cross polarization.
• To understand the direct benefits of cross polarization imaging in the clinical and technical realms.

Rasmus Bartholin of Copenhagen made the first written reports about Icelandic spar in 1669. His report showed that Iceland spar bent light two different amounts, creating two different images. This seemed to break Snell’s law.

Dr. Panagiotis Bazos
Consistent shade matching of indirect restorations with natural dentition remains a great challenge even for the most experienced of experts. Numerous factors which take adverse effect on the clinical outcome have long been identified. They include operator dependency (subjective shade selection and evaluation), insufficient shade guide coverage of the range of natural tooth shades as well as considerable inconsistencies among manufacturers’ shading regimes. The eLABor_aid® system was developed to combat these limitations by enabling objective shade communication using cross polarized dental photography in conjunction with a new and innovative digital work flow that will allow the dental ceramist to formulate an individual shade recipe and to measure its accuracy with the help of a digital try-in of the build-up prior to firing. Learn about the future of shade management: capture, calibrate, and create!

You will learn:

• About traditional shade communication using visual assessment and what the pros and cons are.
• To understand metamerism and its origin.
• To use a digital single lens camera (DSLR) for objective shade quantification and communication without the use of shade guides.
• About practical realization of layered, indirect restorations and clinical examples.
• About clinical applications of the eLABor_aid® protocol for bleaching control.
A totally interactive dialogue between two practitioners about early diagnosis, diagnostic tools, treatment strategy, protocols, and plan B. Clinical situations with both success and failure will help to develop a step by step approach. Flowchart galore and decision-making revisited.

You will learn:

- To recognize early signs of structural cracks.
- To increase predictability of proposed treatments.
- To control damage and limit collateral damage.
- To address different types of cracks.
- To remove all the obstacles that get in the way of good patient communication.
Dentistry is one of the most demanding professions known today. The practitioner needs both knowledge, understanding, and skills in what are often difficult treatments. How can magnification help? What types of magnification do we have today? What are the advantages and disadvantages? Is there a relation to quality? What are the real challenges of working with magnification? Is magnification alone enough? This presentation offers a different view on what we know and do every day.

It will be an interactive dialogue with the participants allowing for a real understanding of what is crucial in our everyday practice. A quiz will make learning fun.

You will learn:

• The real importance of magnification.
• To transform small things into big differences.
• To increase your clinical performance by enhancing your decision making.
• To choose the right magnification for you needs.
New Concepts in Real Adhesive Preparation

Restoration of large defects in the posterior region with a direct composite restoration is possible, although this is not an easy task for the dentist. The most durable, minimal invasive restoration of posterior teeth with large defects is the indirect bonded partial lithium disilicate glass ceramic restoration (onlay, partial crown). During this presentation, the new concepts of indirect partial bonded restorations in the posterior region will be discussed going from preparation – immediate dentin sealing, material selection and cementation.

You will learn:

- How to think in an adhesive way during preparation for adhesive partial prosthodontics treatment plans.
- How to perform a real adhesive preparation in a simple and clinically effective way.
- How to define limits of adhesive treatment plans.
- How to build a high-quality and long-lasting hybrid layer.
The Single Central Challenge: Emulating Nature with Composite or Ceramic

Aesthetic restorations that involve one single upper central incisor represent a great challenge for both dentists and technicians. To achieve optimal results with the minimum number of try-in tests or repetitions, it is necessary to perform a systematic and exhaustive shade analysis. Advanced photographic techniques need to be used for this task, including different kinds of illumination and precise calibration of RAW files.

Restoration material and technique selection depend on diverse factors such as the age of the patient, extension of the restoration, shade complexity, operator skills and the aesthetic requirements on the long term. Today, both composite and ceramic represent valid options for restoring such cases, but a clear shade selection strategy must, however, be defined for both materials. Ultimately, a successful treatment will always be the outcome of good communication with the patient and a perfect teamwork between the dentist and technician.

You will learn:

- The aspects to consider regarding material selection for single central restorations.
- Advanced photographic techniques for accurate shade analysis.
- Shade selection strategies for both composite and ceramic.
- Step by step on single central restorations with composite and ceramic.
The SEM Project
- From Macro to Micro to Nano

This project is joint force mission where Lucas and David had been working in a collaborative mode. In one hand, we have Lucas’ large experience in Microscopy, Fractography, Failure Analysis and more than 40 published papers in recognized scientific journals, on the other hand, we have David Gerdolle’s skillful practice dedicated to clinical details that paint the picture of excellence in adhesive dentistry. This project aims to give light to very small issues and structures and its relationship to clinical success or clinical failure. Several approaches and tools used in engineering, forensic sciences and applied materials science are being gathered together, modified and used to critical analyzing the performance of clinical procedures in dentistry, aiming to magnify daily actions the dentist operates every day at his office. It is science meeting practice from a completely new way, not standardizing situations, or procedures, just magnifying it and trying to understand the reasons behind its outcomes.

You will learn:

- To understand the demands of adhesive dentistry.
- To highlight with SEM what our eyes do not see in the daily routine adhesive dentistry or why “seeing is believing” is not a cliche.
- To experiment the synergy between isolation and magnification.
- To keep an flexible mind even within strict protocols.
- To enjoy our work and to take the best care of our patients.
# Program

## Friday 7 September 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08.15-09.00</td>
<td>Registration incl. a light breakfast</td>
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<tr>
<td>09.00-09.15</td>
<td>Welcome by Peter L. Gerdes, DentaNet</td>
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<tr>
<td>09.15-10.45</td>
<td>Dr. Panagiotis Bazos: The Spectrum and Applications of Cross Polarized Imaging</td>
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<td>10.45-11.15</td>
<td>Break</td>
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<td>11.15-12.45</td>
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<td>Lunch</td>
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<td>13.45-15.00</td>
<td>Dr. Stephane Browet &amp; Dr. David Gerdolle: Cracks: Breaking the Code without Falling Apart – Part 1</td>
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<tr>
<td>15.00-15.15</td>
<td>Break</td>
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<tr>
<td>15.15-16.30</td>
<td>Dr. Stephane Browet &amp; Dr. David Gerdolle: Cracks: Breaking the Code without Falling Apart – Part 2</td>
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<tr>
<td>16.30-16.45</td>
<td>End of day one</td>
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<tr>
<td>16.45-18.00</td>
<td>Networking event – Exhibition, drinks, and snacks</td>
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<td>18.30-00.00</td>
<td>Gala Dinner</td>
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## Saturday 8 September 2018

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<tr>
<td>16.45-17.00</td>
<td>End of Bio-Emulation Symposium</td>
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# Fees

**Bio-Emulation Symposium**  
7 – 8 September 2018

<table>
<thead>
<tr>
<th>Before 25 March</th>
<th>5,995 NOK</th>
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<tr>
<td>Before 29 April</td>
<td>6,995 NOK</td>
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<tr>
<td>Before 10 June</td>
<td>7,995 NOK</td>
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<td>After 10 June</td>
<td>9,995 NOK</td>
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**DentaNet members get a discount of 10% on the delegate fee.**

**Hygienists, dental nurses, and technicians get a discount of 50% on the delegate fee.**

**Networking dinner at restaurant “Festningen”**  
Friday 8 September 2018

1,350 NOK  
*Incl. wine, coffee, avec., and transportation.*

*You are welcome to bring your spouse to the dinner. The same fee applies.*

**Venue**  
Thon Hotel Vika Atrium  
Munkedamsveien 45  
0250 Oslo

**Hotel room**  
Single room: 1,395 NOK per night  
Double room: 1,695 NOK per night  
*Incl. breakfast.*

Hotel rooms can be booked until 10 June 2018.

**Sign up at www.dentanet.dk**
Dear Scandinavian friends. The Bio-Emulation group was born out of deep respect and passion for the biomimetic approach in restorative dentistry. The group’s aim is not only to spread the good news about adhesive restorative dentistry and our ability to mimic enamel, dentin and the DEJ with adhesive and dental materials, but also to facilitate the clinician’s and dental technician’s work by providing extraordinary tools such as the polar_eyes and eLab method for color matching. I am sure that many more developments from the group will impact the future of restorative dentistry. Science and education are the main avenues through which our colleagues can access this knowledge. For sure, those who attend a Bio-Emulation lecture will have their senses rejuvenated by what they are going to see! Stay “Bio-bonded”, always. By the way, see you the 24th-25th of May 2019 in Scandinavia!

Dr. Pascal Magne,
Bio-Emulation Mentor