

# 30 1988 - 2018 YEARS OF ISLD / WFLD PEARL ANNIVERSARY LASER CONGRESS

## Congress Program

**I|S|L|D** International Society for Laser Dentistry



**27<sup>th</sup> DGL ANNUAL MEETING**

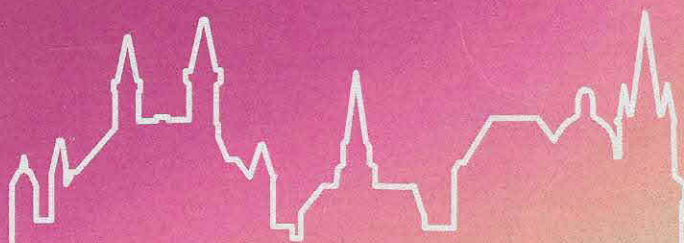


World Academy for Laser Education in Dentistry

**6<sup>th</sup> INTERNATIONAL WALED CONGRESS**



**LIGHT INSTRUMENTS**  
RISE ABOVE TECHNOLOGY  
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**16<sup>TH</sup> LASER DENTISTRY  
WORLD CONGRESS  
AACHEN**

THREE DECADES  
OF LASER INNOVATION  
**1-3 OCTOBER 2018**



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**Chemal Olgun**

### Dental Lasers - a game changer in plastic surgery

- 1)The objective of this case is to report a successful treatment in a case of great expectation with connective tissue graft and laser assisted procedure.
- 2)Our goal also is to observe the modifications that different laser wavelengths (940nm, 970nm, 2780nm) can bring to improve and change the outcome in periodontal plastic surgery like bacterial decontamination, biostimulation of the tissue and minimum discomfort for the patient. Our concept delivers one work flow, based on a objective case documentation and specific measurements and analysis of the aesthetic and functional
- 3)Diode lasers had an major impact on the homeostasis and healing of the donor site of the connective tissue graft without using any kind of membrane, trabecular defects were managed by utilizing the radial firing periodontal laser tip, as well the root surface was prepared with Er,Cr:YSGG laser
- 4)What makes this ideal is that the surgery, bacterial decontamination and biostimulation are completed in the same operation. The patient will leave knowing that, aside general healing and hygiene expectations, his or her day-to-day activities will not be as hindered and most important there is no need for antibiotics for this kind of healthy patients.

Chemal Olgun\*, Dumitru Ovidiu

**Christina Karanasiou**

### Effect of laser-assisted tooth bleaching on the surface morphology of restorative aesthetic composites

The objective of this study was to evaluate the effect of laser-assisted tooth bleaching on the surface microhardness and surface morphology of two aesthetic composites by using a diode laser system (980nm) and an Er,Cr:YSGG (2780nm) laser system. The study comprised of forty cylindrical specimens, made by utilizing Teflon molds. Two composite materials, namely a) Enamel Plus HRi (Micerium SpA) and b) Enamel Plus HRi Bio Function (Micerium SpA) were used. Twenty specimens were made for each material and randomly divided into four groups (n=5). Groups were assigned as follows: Group 1 (control) – No bleaching treatment. Group 2 – In-office bleaching treatment with a 40% hydrogen peroxide agent (Opalescence Boost PF 40%, Ultradent). Group 3 – Laser-assisted bleaching using a diode laser (980nm). Group 4 – Laser-assisted bleaching using an Er,Cr:YSGG (2780nm) laser system. Surface hardness was evaluated using Vickers method. Surface morphology was evaluated with SEM photomicrographs. The specimens' elemental composition was evaluated using energy dispersive X-ray spectroscopy (EDS). The statistical analysis revealed that even though lower microhardness values were observed for all bleached specimens in comparison to control specimens, there was no statistically significant reduction of enamel's surface microhardness for both composite materials. SEM observations revealed surface alterations after bleaching with and without laser irradiation. EDS analysis indicated that there were no changes in chemical composition after bleaching with both techniques. Consequently we can conclude that the replacement of composite restorations is not necessary, either after a 980nm diode or Er,Cr:YSGG laser-supported laser bleaching, nor after in-office bleaching.

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**Claudia B. Zamataro**

### Longevity of diode laser irradiation in dentine: an in vitro study

The efficacy of pulsed infrared lasers on clinical dentin wear sensitivity is well established in the Literature. This work aims to evaluate the effect of diode laser combined with fluoride products regarding the longevity of the sensibility treatment under the effect of the domestic use products. After Ethics Committee approval, 75 slabs of bovine root dentin measuring 8 mm<sup>2</sup>, were randomized into 5 groups (n=15): G1- untreated; G2- treated with acidulated phosphate fluoride (APF-gel, [F<sup>-</sup>]=1.23 %, pH=3.3 to 3.9); G3- irradiated with diode laser (980 nm, 2.5W, 5ms, 25Hz) using a coal paste as photoabsorber; G4- irradiated with diode laser (same conditions of G3) using a coal paste as photoabsorber + application of APF-gel and G5- application of APF-gel+ diode laser irradiation (same conditions of G3). All samples were submitted to an erosive and abrasive demineralization (Sprite Zero, pH=2.8, 90s, 4x/day), and remineralization (artificial saliva, pH=7.4) cycling for 10 days. Twice a day, slabs were brushed for 15s using a whitening dentifrice (Sensodyne True White, GSK, EUA). Slabs were evaluated by Optical Coherence Tomography (OCT) at the initial and 7th day of cycling. OCT measurements found a significant increase on dentin wear depth and area of lesions with the increase of cycling days. G1 and G2 had significant higher mineral loss compared to the other groups. G3, G4 and G5 showed no significant differences between them. Results suggested that the sensibility of the treatment with the diode laser has longevity despite the high abrasivity of dentifrice used in maintenance.

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