LETTER TO EDITOR

Zolar Photon Plus: Laser Dentistry

Laser is an acronym for "light amplification by stimulated emission of radiation." The application of lasers is almost in every field of human endeavor from medicine, science, and technology to business and entertainment over the past few years. The basic units or quanta of light are called photons. The common principles on which all lasers work is the generation of monochromatic, coherent and collimated radiation by a suitable laser medium in an optical resonator.

In today's world where dentistry has become a part of one's life, laser treatment has come with a new advancement, called as "Zolar Photon Plus." It is a versatile dental diode laser with 980 nm diode and great equipment that can be handled easily. This device consists of a handpiece, optics, band, zooming light, and transportation bag. It is portable and easy to use with simple, touchscreen controls.[1-3]

LASER TISSUE INTERACTION

- Crystals of enamel
- Melanin pigment
- Water molecules.

CLASSIFICATION[4,5]

- According to tissue laser
  - Hard tissue laser
  - Soft tissue laser.
- According to tissue contact
  - Contact
  - Non-contact.
- According to emission mode
  - Continuous
  - Pulse.

1. Technical Information
   - Wavelength: 980 nm
   - Weight: <2 kg
   - Dimensions: 205 Ω 130 Ω.
2. Settings
   - Manual (power, timer, and mode)
   - More than 20 preset procedures and multiple customized programs
   - 3 Levels of aiming beam intensity.
3. Modes
   - Continuous or Pulse mode
   - Hertz rate in pulsed mode: 1-5000Hz
   - Duty Cycle: Adjustable
   - Pulse Duration: 0.01 ms to 9.9s
   - Pulse Interval: 0.01 ms to 9.
4. Power requirements
   - AC100-240V 50/60Hz
   - Wireless Pedal-1.5V.
5. Complies with
   - IEC 60601-1
   - IEC 60601-2-22
   - IEC 60825-1
   - IEC 60601-1-2.
6. Warranty period
   - 3 years for the laser
   - 1 year for the battery
   - 6 months for the handpiece.

APPLICATIONS OF ZOLAR SOFT TISSUE DIODE LASERS

1. Endodontics (As in case of pulpectomy)
2. Hypersensitivity/root sensitivity
3. Bleaching (photoactivation) [5 Watt+]
4. Soft tissue lesions (herpes simplex: TIME: 45 s; gets treated within 1 week)
5. Gingival curettage (0.8 WP; time: 3–4 s)
6. Open flap debridement (1 WP)
7. 2nd stage implant surgery (1.2 WC)
8. Frenectomy (1.0 WP)
9. Unerupting tooth (0.9 WC)
10. Crown lengthening
11. Peri-implantitis (0.8 WC)
12. Carpal tunnel syndrome
13. Nerve regeneration
14. Cancer therapy

15. Operculectomy
16. Vestibuloplasty
17. Sinusitis
18. Sports injury
19. Warts removal
20. Diabetic foot
21. Excision of removal of granulation tissue
22. Fibroma removal
23. Gingivoplasty
24. Hemostasis and coagulation
25. Incision and drainage of abscess
26. Leukoplakia
27. Oral papillectomies
28. Gingival bleeding index.

ACCESSORIES

1. Cleaver
2. 10W open/closed mouthpiece
3. 3W open/closed mouthpiece
4. Stripper
5. 3W permanent handpiece
6. 10W permanent handpiece
7. Disposable tips
8. Cutting fiber
9. Cutting fiber kit
10. Metal handpiece.

PHOTON 3 WATT DENTAL DIODE LASER: BEST FEATURES

1. The small size makes it easy to store and carry: The photon 3-watt dental diode laser is quite small, and this makes it very easy to carry around, enhancing portability. True portability and affordable cost features make it the best dental diode laser available in the market.
2. Pre-set procedures and customized programs: Photon 3 watt dental diode laser is certified by Food and Drug Administration (FDA), Health Canada (MDL), and European standards offers 21 adjustable/customizable programs. An adjustable aiming beam adds to the various amazing features of this product.
3. Large LCD and battery: It is a good idea to have a large LCD display as it helps smooth functioning. To ensure the security of your settings the device has digital password protection. It is perfect for minor and major surgeries with a super long lasting battery that is easy to recharge. These features make the product highly usable and convenient.
4. Wireless foot pedal and disposable tips: The wireless foot pedal is not only convenient but also very comfortable. Furthermore, disposable tips make the dental diode lasers extremely safe. With these features photon, the dental diode laser is ready to become the top diode laser available for dentists for all dental procedures and soft tissue treatments.[6]

PHOTON PLUS 10W SOFT TISSUE DENTAL LASER

The photon plus 10W immaculate dental lasers with 980 nm diode versatility and complete portability has built-in tutorials and the best multi-lingual interface. The large LCD touchscreen for ease of navigation and a menu containing several programs that are both pre-set and customizable makes the new photon plus dental diode laser unparalleled. It is perfect for tooth whitening or bleaching without any menace or cross infection.

PHOTON PLUS 10W SOFT TISSUE DENTAL LASER: BEST FEATURES

1. Multilingual interface and portable power module: The photon series of lasers is FDA approve; feature a multilingual interface that makes it acceptable to a large number of audiences. The portable power module is also a boon as it can work wireless 3.5–4 h with battery backup making usage a whole lot easier.
2. High-level security features: Needless to say, password protected feature, provides great security to the users of this product. As a product from a company of great repute 3 years warranty is a worthy feature. These features provide added benefits to the dentists as these world-class products of superior usability as the top diode laser.
3. Gentle and comfortable: Photon plus 10W laser is designed keeping the customers in mind, so these lasers are extremely gentle and comfortable. This is good for the dentists as well because pleased customers mean more good will and more business.
4. Dental laser: It provides faster healing and no pain than the conventional dental procedure
5. Touch interface and wireless foot pedal: Great touch interface and wireless foot pedal advanced feature of photon plus laser makes it one of the most wanted laser products in the market.
6. Powerful applications: The photon plus laser is a surgical dental device, intended to use for excision, incision, coagulation, removal of fibroma, granulation tissue, soft tissue crown lengthening, canker sores, bleaching, tooth decay, discolorations, and oral soft tissue dental procedures.

ADVANTAGES OF USING ZOLAR SOFT TISSUE DIODE LASERS

Soft tissue diode lasers offer advantages to both dental professionals and patients.

For Dentists and Hygienists

Soft tissue diode lasers not only give dental practitioners the ability to precisely complete routine dental procedures performed in general practice but also many advanced dental procedures they previously would have referred to dental specialists.

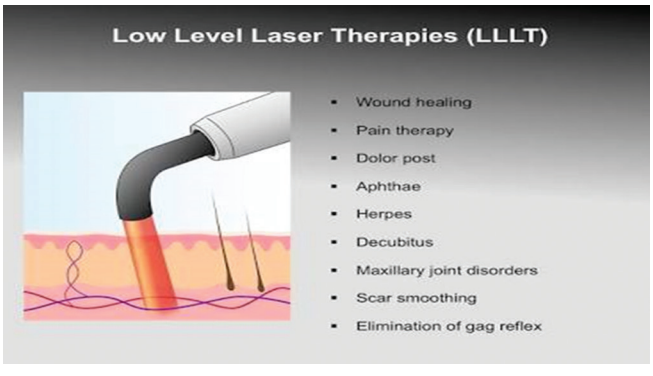
Soft tissue diode lasers are particularly useful for gingivectomies to facilitate caries removal and enhance a smile's esthetics in a minimally invasive way.

When used to create a trough around prepared teeth, these soft tissue diode lasers also can improve the quality of daily impression taking, resulting in impressions that are cleaner and more accurate.

For Patients

Soft tissue diode lasers use an energy wavelength of 810–980 nm, a level proven to demonstrate a high affinity for soft tissue laser in dentistry. Soft tissue diode lasers also demonstrate photothermal effects to ablate, or cut and seal, soft tissue through vaporization. As a result, patients tend to experience far less post-operative discomfort, as well as significantly less collateral damage to otherwise healthy surrounding tissue areas.

Soft tissue diode lasers also have the ability to achieve simultaneous cutting and coagulation. This advancement in dental laser technology provides immediate hemostasis with far less tissue charging and a reduction of bacteria that lessens the incidence of post-procedure bacterial and viral infection.[7]



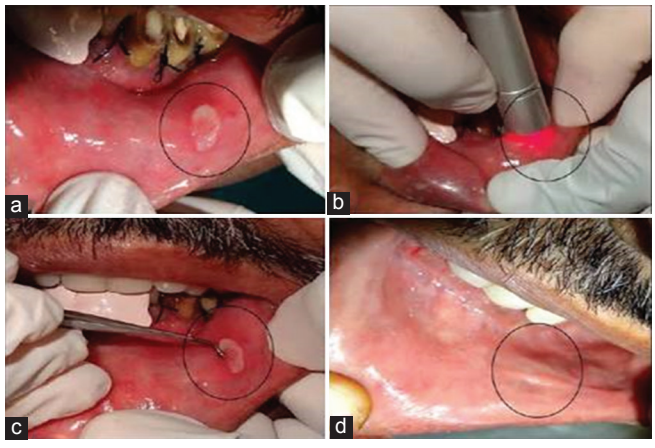
LOW LEVEL LASER THERAPY (LLLT)

- Biostimulation or photostimulation
- Photodynamic.

It is a form of alternative medicine that applies low-level lasers or light emitting diodes to the surfaces or orifices of the body. It emits no heat, sound, or vibration.

Effects of LLLT

1. Reduction of inflammation, it can occur within hours days.
2. Pain relief, for example, pain associated with TMD or neuropathic pain.
3. Accelerated tissue regeneration: LLLT stimulates cell proliferation of fibroblasts, keratinocytes.



Management of minor aphthae on the lower left labial mucosa with the help of LLLT

Management of ankyloglossia with the help of LLLT

CONTRAINDICATIONS

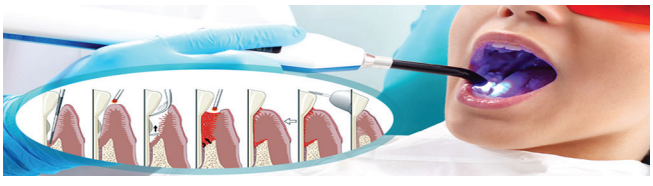
1. Eyes: Do not aim laser beams into the eyes and must wear appropriate safety spectacles.
2. Cancer: It should not be treated over the site of any known carcinoma or secondary metastasis unless the patient is undergoing chemo. When LLLT can be used to reduce side effects such as mucositis.
3. Pregnancy: Do not treat directly over the developing fetus.
4. Epileptics: Be aware that low frequency pulsed visible light (<30 Hz) might trigger a seizure in photosensitive, epileptic patients.[8]

REASONS TO CONSIDER ZOLAR'S PHOTON SOFT TISSUE DIODE LASER TO YOUR PRACTICE

1. Gentler treatments: The photon works on patients and causes little-to-no-pain, depending on the patient. The laser works with minimal discomfort

and bleeding producing very few incisions requiring stitches which make the photon optimal for dentists who frequently work on sensitive patients. The Photon's laser also helps with post-operative healing and decreases inflammation and patient recovery time. In addition, the pain-reducing nature of the photon greatly limits the need for anesthetics.

2. It's versatile: The laser reportedly can be used for a variety of operations, including removal of diseased, infected, inflamed, and necrosed soft tissue within the periodontal pocket; laser periodontal; laser soft tissue curettage; removal of edematous tissue; sulcular debridement; and dental intraoral soft tissue general, oral maxillaofacial and cosmetic surgery.
3. User-friendly: The photon features a touch-screen monitor, reportedly providing easy navigation. It is password protected, meaning a key is not needed for operation. The hand-piece is flexible and easy-to-use, and the photon comes with bendable disposable tips for easy maneuverability during procedures.
4. Added plus: The photon also features a foot pedal control for easy, hands-free operation.



LASER SAFETY IN DENTAL PRACTICE

The surgical lasers currently used in dentistry generally fall in class 4 category which is considered the most hazardous group of lasers. The types of hazards that may be encountered within the clinical practice of dentistry may be grouped:

1. Ocular hazards: Injury to the eye can occur either by direct emission from the laser or by reflection from a mirror-like surface.
2. Tissue hazards: Temperature elevation of 21°C above normal body temperature can produce destruction by denaturation of cellular enzymes and structural proteins which interrupt basic metabolic processes.
3. Environmental hazards: These secondary hazards belong to a group of potential laser hazards referred to as non-beam hazards. Most surgical lasers used in dentistry are capable of producing smoke, toxic gases, and chemicals.
4. Combustion hazards: Flammable solids, liquids, and gases used within the surgical setting can be easily ignited if exposed to the laser beam.
5. Electrical hazards: Because class 4 surgical lasers often use very high currents and voltage power supplies, electrical hazards can be in the form of electric shock, fire, or explosion.

***Keeping in mind these points, safety precautions should be taken while using laser equipment for dental practice.

It has been generally noticed that people now days change their mobiles after every 2 years (example: Apple iphone7 costs Rs.42,999) and the cars like BMW costs about 34.50 lakhs, instead of which they can invest their money in buying Zolar Photon plus for their clinics which costs around Rs.2,30,000 to Rs.9,84,286. Those dentists using laser treatment for their patients are earning Rs.30,000 in 45 s as compared to those who are still unaware of this device.

If the dentists start using this Zolar Photon plus then for sure "Your patients will be walking out of your clinic with that white smile they are looking for."[9,10]

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