

New double-wavelength-laser— successful launch at IDS

An interview with Federico Pignatelli, Chairman and CEO Biolase Technology Inc.



Mr Pignatelli, Biolase is predominantly known to dentists as a manufacturer of dental lasers, but also develops lasers for other medical sectors. Which corporate tradition and which competences underline this high specialization in the medical laser technology?

Federico Pignatelli: Biolase is redefining surgery in dentistry and medicine. We have more than 140 issued patents and 143 patents pending in the field of dental and medical lasers of which approximately 70% are focused on our core Er,Cr:YSGG laser technology, which combines our patented laser energy at 2,780nm with water to precisely cut hard tissue, soft tissue and bone. In addition to dentistry, our YSGG technology has broad applications in ophthalmology, dermatology, orthopedics, and ENT. In 2011 you will see us begin expansion into these new markets starting with our YSGG laser and methodologies for treating presbyopia, a condition that affects more than 2.5 billion people worldwide. Our innovative R & D team combined with a senior management staff with many years of medical laser experience are the keys to us expanding into the medical laser sectors.

You have four different dental lasers in your range of products. Can you please explain, in short, for which indications which laser is suited best?

The iLase 940nm diode laser is a very convenient and affordable way to get started in laser dentistry. Completely wireless and handheld, it is perfect for troughing around crown preps to eliminate packing retraction cord, gingivectomies, treating periodontal pockets in a soft-tissue management program plus root canal decontamination. With 5 watts of power in pulse mode, it is capable of most soft tissue procedures.

The EzLase, Total Diode Solution performs all diode soft-tissue, hygiene procedures, endo and perio indications plus full-mouth teeth whitening and LLLT for biostimulation and pain relief. The EzLase features higher power and more pulse modes than the iLase for even greater control and patient comfort. Full-mouth teeth whitening takes less than 20 minutes. The EzLase is the only dental laser in the US with FDA clearance for temporary pain relief for TMD and other facial pain indications. We have developed a new deep tissue handpiece specifically for biostimulation and our doctors are seeing amazing results.

The WaterLase MD Turbo was a major breakthrough in all-tissue laser technology when it was introduced a few years ago. This laser is an ideal entry level all-tissue laser for pediatric and restorative dentistry including cavity preps of all classes. It is also FDA cleared for periodontal indications including subgingival calculus removal and new attachment procedures. For endodontic indications, it is clinically proven to disinfect root canals three times more effectively than using NaOCl when using our patented EndoLase™ radial firing tips.

The new dual wavelength WaterLase iPlus has advanced laser technology to its ultimate. The combination of the 2,780nm and 940nm wavelengths in a single unit provides maximum versatility for performing all dental laser indications. With 600mj per pulse and pulse repetition rates from 5 to 100Hz, this laser can cut hard-tissue as fast as a high-speed drill—or any other dental laser—without the pain or

creation of micro-fractures in healthy tooth structures the drill can cause. It also reduces the—risk of cross-contamination from dental burs that has been shown in recent studies. The intuitive, indications-based graphic interface makes operating the iPlus as quick and easy to learn as using a smart phone.

With the Er,Cr:YSGG laser with a wavelength of 2,780nm, Biolase has developed the Erbium laser further and owns the patent for this wavelength. What advantages does the Er,Cr:YSGG laser offer compared to a Er:YAG laser?

BIOLASE is one of the research pioneers in dental lasers. In our experiments with many kinds of lasers for over 20 years, we have found the Er,Cr:YSGG laser wavelength of 2,780nm to be the most efficient for cutting not only hard-tissue, but also soft-tissue and bone as well. And that's one feature of our company that also distinguishes us from everyone else. Rather than taking a readily available commercial laser, such as Er:YAG, and then asking doctors to use it, we took the opposite approach. We first learned which laser would be most applicable for dental procedures, regardless of commercial availability, and then worked to bring it to market. The result is a biological and therapeutic treatment that provides minimum trauma and superior healing. Our YSGG technology is also more efficient than the Er:YAG which allows us to generate high power and high hertz rates in a small package using a standard power outlet.

You may have also noticed that our diode wavelength of 940nm is different than the more traditional diode wavelengths of 810nm and 980nm. The reason we chose 940nm is very similar to our choice of Er,Cr:YSGG. From a laser physics standpoint, we considered it because it is on an absorption peak for hemoglobin and oxyhemoglobin with higher absorption in water than the 810nm. This provides an excellent balance of cutting and coagulation of all types of oral tissues. We then gave our clinical advisors unmarked multi-wavelength units to evaluate. Clinically, they all selected the 940nm over other the common diode wavelengths.

At the Midwinter Meeting in Chicago at the end of February, the presentation of the new Er,Cr:YSGG laser Waterlase iPlus was extremely successful. Which product features were received best?

Doctors were most impressed that the iPlus cuts hard-tissue as fast as a high-speed drill. Many of

them, including experienced laser dentists, couldn't believe it even after they tried it.

They also loved our new system interface. Rather than requiring the doctor to enter values for power, air and water spray, and pulses per second, the Waterlase iPlus simply asks doctors to select what indication they want to perform. The iPlus takes care of all the technical details of setting up the laser parameters and recommends the optimum tip and handpiece combination.

Doctors have been waiting for a powerful, yet simple laser to use. Now they finally have it with the Waterlase iPlus.

Are the reactions of the IDS visitors similar?

The reaction to the cutting speed and intuitive indications-based user interface of the iPlus at the IDS was similar to the Chicago Midwinter, but the international doctors and distributors really liked the new more flexible fiber delivery system with higher illumination and larger diameter tips and the ability to order an iPlus in custom colors, especially the red and the black versions.

Did you experience at the IDS that dentists and dental assistants have the need for more information regarding dental lasers?

Yes. Recent market research supports your observation that dentists and dental assistants need more information on all aspects of dental lasers. At Biolase we are working very hard to educate dentists and their staffs

on the wide range of indications that can be performed by diode and all-tissue lasers, how they can be integrated into the practice to generate a return on their investment, the amount of clinical training and support that is available to help them master laser dentistry and finally how much easier our new lasers are to learn and operate compared to lasers in the past.

What sales channels do you use for your products?

Internationally, we sell through a large network of distributors. We are currently selling in about 50 countries and in addition to Biolase-Europe in Floss, Germany, we are opening up company offices in China, India and South America to better support our dealers in these fast growing markets.

Mr Pignatelli, thank you very much!

“Doctors have been waiting for a powerful, yet simple laser to use.”