

Deployment of a 410 nm Diode Laser Prototype

First experiences with the “blue diode”

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Based on their market launch in 1995 within the scope of the IDS in Cologne, the diode lasers in dentistry experienced a development, which is to be described as “more than turbulent”; with the result that today diode lasers are the most represented laser technology in dental offices and are used with great success primarily for soft tissue cuts and peri-implantitis and periodontitis therapy.

_Diode lasers currently available on the market significantly differ technically; a large number of so-called “entry-level lasers”, which normally feature a low output power and are operated primarily in cw mode but attract with a lower price, basically represent Development Stage I of the diode lasers since their basic research one and a half decades ago.

In direct contrast is a small number of so-called “high-tech diode lasers”, normally more than twice as expensive as entry-level devices but instead equipped with digital or high-power pulse technology instead and definitely higher power ratings, which in the context of dental surgery is reflected in significantly im-

proved cutting results. Between them, there is a small group of medium-class diode lasers pulsed up to 10,000 Hz. In terms of pricing they are exactly positioned between the two “extremes”.

The option to apply in dentistry other wavelengths than the 810 and 980 nm used to date, has caused in the past many authors to point out that from a pure technical standpoint it is possible to develop almost any number of hard diode laser wavelengths. The device introduced in this article represents the result of those considerations. Its basic uses in dentistry need further testing and clarification:

This is a hard diode laser device, produced by an

Fig. 1_ 410 nm Diode laser prototype.

Fig. 2_ Experimental Setup for Soft Tissue Surgery.



Fig. 1



Fig. 2