Analysis of the laser dentistry market

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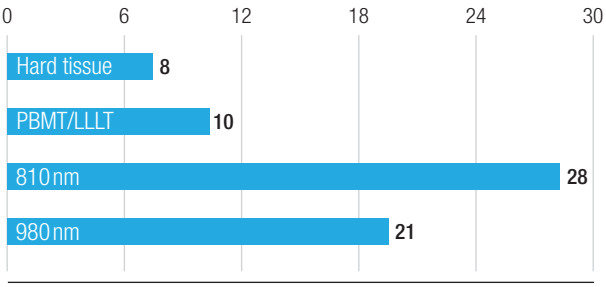

Fig. 1: Majority manufacturers of specific lasers. PBMT = photo-biomodulation; LLLT = low level laser therapy.

Laser dentistry is experiencing a boom time. Although the financial situation globally is constraining the market, laser companies—both big and small, yet all with unique corporate histories—continue to bring new devices to the market to support us and our patients, developing new technological implementations and therapeutic protocols, and surprising us with new wavelengths.

It is safe to say that the most prominent trade fair for dentistry is, of course, the International Dental Show (IDS), which is held every two years in Cologne in Germany. It is organised by the Gesellschaft zur Förderung der Dental-Industrie, the commercial enterprise of the Association of the German Dental Industry, and hosted by Koelnmesse. At the 2019 show, the vast exhibition area of 170,000 m^2 filled with the exhibition booths of manufacturers, importers, service providers, and associations and institutions directly related to products and systems for dental medicine and dental technologies attracted more than 160,000 visitors from 166 countries. The exhibitors included 2,327 companies from 64 countries. Naturally, these gargantuan numbers gave abundant opportunity for research and quantification, especially with regard to the laser dentistry industry. Walking 45 km over the course of 4.5 days, I managed to visit all the booths of the dental laser manufacturers and meet with their respective representatives, who were so kind as to complete specially developed questionnaires, through which I obtained a great deal of information. Hopefully, the following analysis will help laser dentists around the world gain a clear idea of what is offered by the companies, what technologies are available on the market, and which tools dentists can implement in their dental clinics. It must be noted that not all companies are present at IDS and that this analysis is restricted to those that attended this year's instalment of the dental event. The data was collected in cooperation with the representatives of each company and was subsequently

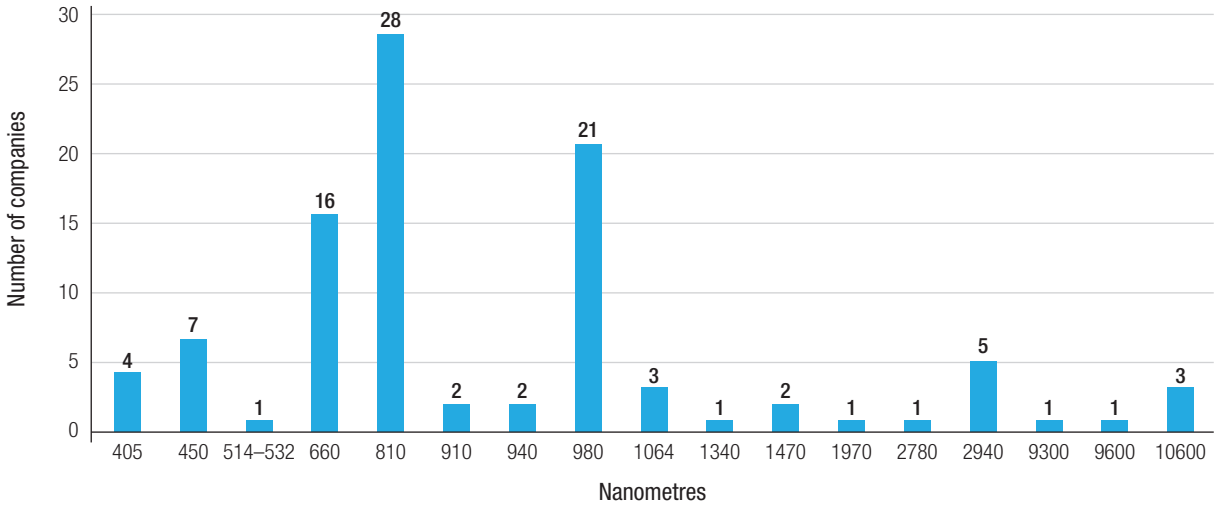

Fig. 2: Available wavelengths according to number of manufacturers. For some wavelengths, one dominant one was selected, but a range of ± 20 nm was included (e.g. 445–450–470 nm, 630–650–660–670 nm, 808–810 nm, 908–910 nm, 970–980 nm).

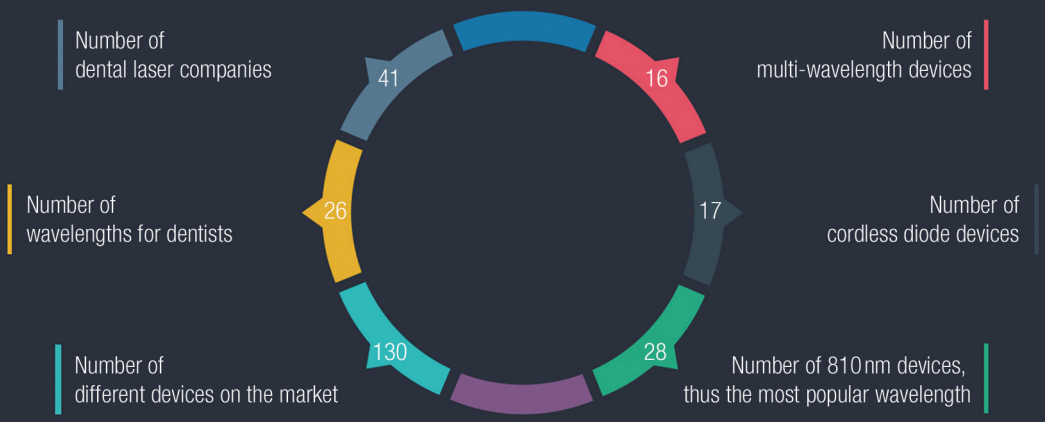

Fig. 3: Number of dental laser manufacturing companies present, dental laser wavelengths, devices overall, multi-wavelength devices, cordless diode devices and 810 nm devices.

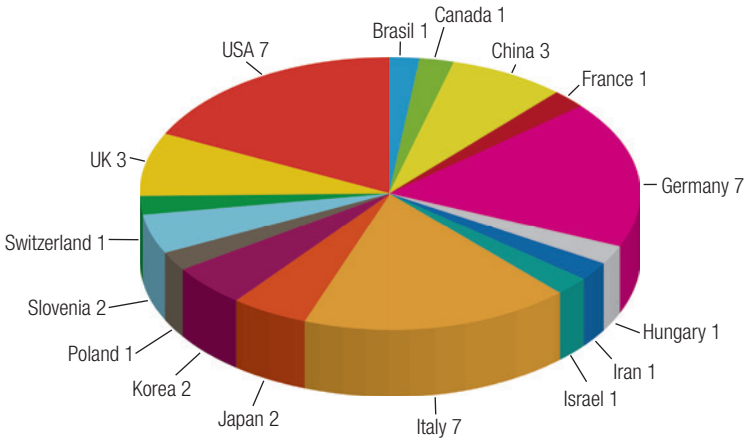

Fig. 4: Number of laser manufacturers by country.

double-checked against the information provided on the websites of the respective companies. However, there may be inadvertent errors or omissions.

Many different wavelengths have continued to appear on the market on an annual basis. Lasers of certain wavelengths are produced by numerous companies, whereas for others, there may be only one manufacturer. The most popular wavelengths in dental laser manufacturing are 810 nm (28 companies produce them) and 980 nm (21 manufacturers; Fig. 1). Lasers in the visible red light spectrum (630, 650, 660 and 670 nm), which are used in photo-biomodulation and photodynamic therapy, occupy the third place in this category, being produced by 16 companies (Fig. 2). Eight devices are available on the market for hard-tissue procedures with the four wavelengths of 2,780 nm (Er,Cr:YSGG), 2,940 nm (Er:YAG), and 9,300 nm and 9,600 nm (carbon dioxide; Fig. 1). Also, there are 11 dental systems which are used exclusively for photo-biomodulation and photodynamic therapy (Fig. 1).

In total, 41 dental laser manufacturing companies were present at IDS 2019, showcasing an overall portfolio of 130 different devices. Among those were 16 multi-wavelength devices and 17 cordless devices. The number of available wavelengths offered globally for dental applications comes to the astonishing number of 26. The 41 laser companies that were present during IDS 2019 come from 16 countries, mainly Germany, Italy and the USA. Each of these countries was represented by seven companies.

The 38th IDS ended after five intensive days during which practitioners and industry representatives met and interacted with one another in an unparalleled way. At the event, companies specialised in laser dentistry were present to a significant extent, highlighting that this discipline is a benchmark for future dentistry. With sophisticated state-of-the-art technology, a dental office can be transformed, the quality of care can be elevated, and dentists can offer their patients treatment options that are faster, more convenient and—in many cases—performed exclusively through the power of the biophysical interactions of laser light and human tissue. I would like to thank every company that so willingly shared its information with me. I am already looking forward to meeting the entire dental laser family again during the 39th IDS, which will be held from 9 to 13 March 2021.

about the author

Dr Dimitris Strakas completed his DDS at the Aristotle University of Thessaloniki in Greece in 2002 and his M.Sc. in Lasers in Dentistry at RWTH Aachen University in Germany in 2006. In 2017, he obtained his PhD from the Aristotle University of Thessaloniki, and in 2013, he founded the laser clinic department there. Since 2017, he has been a university scholar in the Department of Operative Dentistry of the same university. He runs a private laser dental clinic in Volos in Greece. In addition, he is the Secretary General of the International Society for Laser Dentistry.

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