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Femtosecond laser handpiece for ophthalmic surgery

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The aim is to provide a surgical hand-piece using femtosecond technology for perforating/cutting ocular tissue for ophthalmic surgery with a flexible, compact, safe and robust self-cleaning performance. The solutions include use of a preferable switchable fs-laser source from an automated ophthalmic surgical laser system to this manual hand-piece, use of special Kagome - photonic crystal fiber delivery system and use of a very small sized disposable handpiece adapter with focusing and laser self-cleaning exit window with additional fluid flow channels. Possible claims include: Switchable automated and manual ophthalmic surgical fs-laser apparatus; kagome fiber coupled compact, disposable and self-cleaning surgical hand-piece; and procedure for manual, traction free, perforating/cutting ophthalmic surgery. The invention is related to a device and a procedure which enables to treat certain eye diseases in human eyes with help of a surgical handpiece, which delivers an ultra-short pulse laser beam for surgery. The hand held device is capable of delivering ultra-short pulsed laser energy in the femtosecond and picosecond range directly to the ocular tissue like retina, lens (cataract) and sclera.

Biography

Santosh Dyanmote is a Medical graduate of Odessa State Medical University, Ukraine, completed his Post-graduate Specialization in Ophthalmology with subspeciality in Vitreo Retinal Surgery from Kyiv Medical Academy, Ukraine. He is a Consultant in Ophthalmological Clinic of Professor Sergienko in Vinnitsa, Ukraine. He was a Trainer in Phacoemulsification Surgery for Cataract in Makkah Eye Hospital, Khartoum Sudan, National Institute of Ophthalmology, Kaduna Nigeria, Visiting Consultant at International Speciality Hospital, Tripoli, Libya and Visitor Consultant at Multispeciality Ophthalmology Centre in Abidjan, Ivory Coast.

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