Development of High-Precision Femtosecond Laser Technology for Ophthalmic Surgery

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ABSTRACT

Photodisruption of biological tissue generated by femtosecond laser pulses can be used for high-precision micro-surgery due to its confined surgical effect and the lack of collateral tissue damage. The eye is a primary target for photodisruptive surgery since near infrared femtosecond laser pulses can be easily delivered through transparent ocular tissue. The lecture will summarize the history of the development of ophthalmic femtosecond lasers from the laboratory experiments to commercialization. Clinical applications in refractive and cataract surgery as well as today's medical femtosecond laser industry will be reviewed.