International Journal of Optics

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Special Issue on

Femtosecond Laser, OCT, and Their Application in Medical Science: Biomedical Optical Imaging and Related Optical Engineering

CALL FOR PAPERS

Multiple commercial femtosecond lasers have been cleared by the US Food and Drug Administration for ophthalmic surgery, including their use for creating corneal flaps in LASIK surgery. The most recent application of femtosecond lasers in ophthalmology is in cataract surgery. Optical coherence tomography (OCT) is the standard of care imaging modality in ophthalmology. In femtosecond laser cataract surgery, OCT plays an important role in guiding and assisting the operation. Given the clinical efficacy of refractive surgery, it is important to understand the biomedical optical imaging and related optical engineering. The research about the interaction between the femtosecond laser pulse and cornea/lens will help in understanding the principles and increase the clinical outputs. Although the principle of OCT-guided femtosecond laser cataract surgery is very clear, how to get better image in surgery is still an open topic. It is still an interesting biomedical optical imaging topic and more research is more than welcome. The optical engineering about femtosecond cataract surgery is also attractive and important to get better result from diagnoses to therapy.

This special issue focuses on topics about femtosecond laser in refractive and cataract surgery, including biomedical optical imaging and related optical engineering, as well as basic research about interaction between femtosecond laser and cornea/lens. We hope to attract the recent research or clinic results from diagnoses to therapy, from laboratory to hospital. Topics related to femtosecond laser in refractive surgery and femtosecond laser in cataract surgery are welcome. Review articles which describe the current state of the art are also welcome, either in OCT diagnosis or related optical engineering about femtosecond laser in refractive and cataract surgery.

Potential topics include but are not limited to the following:

- Femtosecond laser assisted LASIK surgery, including femtosecond laser flap creation and all-femtosecond laser LASIK, as well as optical engineering related to femtosecond laser assisted LASIK surgery
- Femtosecond laser assisted cataract surgery and optical engineering related to it
- OCT assisted imaging during femtosecond laser cataract surgery
- Femtosecond laser eye tissue interaction, especially in cornea and lens
- Femtosecond laser assisted corneal transplantation: clinic result
- Femtosecond laser tenotomy
- Femtosecond laser assisted presbyopia treatment
- Other applications of femtosecond laser techniques in eye surgery

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/ijo/flrcs/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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