

Contents

• Introduction	1
• Aim of the work	4
• Historical background of laser in ophthalmology	5
• Principles of femtosecond laser	8
• Machines femtosecond laser	12
• Applications of femtosecond laser in corneal surgery	17
Femtosecond Laser – assisted flap creation in laser in situ keratomileusis (LASIK)	17
Femtosecond laser –assisted Lamellar keratoplasty	29
Femtosecond laser –assisted Penetrating keratoplasty	37
Femtosecond laser in keratoconus and Pellucid marginal degeneration	40
Femtosecond laser Astigmatic keratotomy for post-keratoplasty Astigmatism.....	43
Femtosecond laser arcute wedge shaped resection to correct high residual astigmatism after penetrating keratoplasty.....	45
Femtosecond laser in Corneal Tattooing	46
Femtosecond-assisted corneal biopsy (FAB) in keratitis	49
Femtosecond-assisted keratoprosthesis implantation	51
Femtosecondenticule extraction	52
• Other Uses of femtosecond laser in ophthalmology	
Treatment of glaucoma	55
Branch retinal vein occlusion	57
Treatment of presbyopia	58

Femtosecond laser technology in cataract surgery.....	63
Application of femtosecond ultrashort pulse laser to photodynamic therapy mediated by indocyanine green.....	69
• complications with femtosecond laser	70
• Summary	79
• References	81
• Arbic summery	97