# TABLE OF CONTENTS

**5. The optical quality of the psudophakic eye**

*5.2.1. Monofocal intraocular lenses: spherical and aspheric surfaces.*
*5.2.2. Multifocal intraocular lenses.*
*5.2.3. Accommodative lenses.*
*5.2.4. Other innovative pseudophakic IOL designs.*
*5.3.5. Phakic lenses.*

**CHAPTER 2-  METHODS: CUSTOM-DEVELOPED PURKINJE APPARATUS FOR PHAKOMETRY AND LES TILT AND DECENTRATION MEASUREMENTS.**

*2.3.1.  The merit function.*
*2.3.2.  First Purkinje image height.*
*2.3.3.  Third double image height.*
*2.3.4.  The equivalent mirror theorem.*
*2.3.5.  Lens tilt and decentration.*

**3.  Validation of the technique by computer simulations.**

*3.1.1. Effect of lens tilt and decentration.*
*3.1.2. Effect of anterior and posterior corneal curvature.*
*3.1.3. Effect of Anterior Chamber depth.*
*3.1.4. Effect of lens thickness.*

*3.3.1. Effect of anterior corneal asphericity.*
*3.3.2. Effect of corneal irregularities.*
*3.3.3. Effect of anterior and posterior lens asphericities.*
*3.3.4. Effect of refractive gradient index in a realistic eye model.*

**4.  Preliminary tests in phakic and pseudophakic eyes**

**CHAPTER 3-   SCHEIMPFLUG IMAGING: OPTICAL DISTORTION CORRECTION**

**CHAPTER 4-   CRISTALLYNE LENS RADII OF CURVATURE FROM PURKINJE AND SCHEIMPFLUG IMAGING.**

**CHAPTER 5 -   IOL TILT AND DECENTRATION MEASUREMENTS:. PURKINJE IMAGING VERSUS SCHEIMPFLUG IMAGING.**

## CHAPTER 6 - CHANGES IN CRYSTALLINE LENS RADII OF CURVATURE AND CURVATURE AND LENS TILT AND DECENTRATIONS DURING DYNAMIC ACCOMMODATION IN RHESUS MONKEY.

## CHAPTER 7 - CHANGE OF OPTICAL QUALITY WITH INTRAOCULAR LENS IMPLANTATION.

## CHAPTER 8 - CUSTOMIZED COMPUTER MODELS OF EYES WITH INTRAOCULAR LENSES.

**CHAPTER 9 -   BALANCE OF CORNEAL HORIZONTAL COMA BY INTERNAL OPTICS IN EYES WITH INTRAOCULAR ARTIFICIAL LENSES: EVIDENCE OF A PASSIVE MECHANISM.**