Contents

Section I: IOL History and Preliminary Considerations

1. **Evolution of Intraocular Lenses** 3
   David Meyer, Sylwia McKenzie (South Africa)
2. **History and Development of Phakic Lenses** 9
   Jairo Hoyos, Chacón, Melania Cigales, Jairo E Hoyos (Spain)

Section II: Intraocular Lens (IOL) Power Calculations

3. **Update on IOL Power Calculation Formulas** 17
   JT Lin (USA), Ashok Garg (India)
4. **IOL Power Calculations** 30
   Kenneth J Hoffer (USA)
5. **Classical vs Modern Formulas for Estimated Lens Position (ELP)** 50
   JT Lin (USA)
6. **The New IOL Formulas Based on Gaussian Optics** 56
   JT Lin (USA)
7. **Ocular Biometry and Intraocular Lens Power Calculations in Phaco and Microphaco** 66
   Ashok Garg, Arif Adenwala (India)
8. **IOL Power Calculations after Corneal Refractive Surgery** 75
   Srinivas K Rao, Arthur Cheng, Dennis SC Lam (China)
9. **Intraocular Lens Power Calculations for Children** 84
   Rupal H Trivedi, M Edward Wilson (USA)
10. **IOL Calculations in Long and Short Eyes** 92
    Wolfgang Haigis (Germany)
11. **Error Analysis of IOL Power Calculations** 100
    JT Lin (USA)
12. **Comparison of Methods for IOL Power Calculation after Incisional and Photoablative Refractive Surgery** 106
    Antonio Calossi, Massimo Camellin (Italy)

Section III: Intraocular Lenses for Aphakia, Phaco, Microphaco (MICS) and Refractive Cataract Surgery

13. **Material for Intraocular Lenses** 131
    Jean Marc Legaeis (France)
14. **New Intraocular Lenses and Techniques for Sutureless Implantation in Aphakic Eyes Without Capsular Support** 156
    Peter W Rieck (Germany)

15. **Microincision Cataract Surgery (MICS) Intraocular Lenses** 162
Jorge Alio, Ahmed Galal (Spain)
16. **Phakonit with Acritec IOL** 178
Amar Agarwal, Sunita Agarwal, Athiya Agarwal, Ashok Garg (India)
17. **MICS and Foldable Lenses** 185
Hiroshi Tsuneoka (Japan)
18. **IOL Selection for Weakend Capsular Bag** 196
David F Chang (USA)
19. **Thin IOL Implantation in Microphaco** 201
Matteo Piovella, Fabrizio I Camesasca, Barbara Kusa (Italy)
20. **Mini Incision IOL Implantation** 208
Roberto Bellucci, Simonetta Morselli (Italy)
21. **Foldable IOLs Biomaterial, Designs and Insertion Techniques** 213
Kumar J Doctor, Mahendra D Dive (India)
22. **Acrylic IOL and Operative Techniques in Pediatric Cataract Surgery** 241
Marek E Prost (Poland)
23. **ThinOptx Rollable IOL** 254
Jairo E Hoyos, Melania Cigales, Jairo Hoyos Chacon (Spain)
24. **Aspheric IOLs (Wavefront Based IOLs)** 262
Sanjay Chaudhary (India)
25. **The Light Adjustable Lens** 268
Richard S Hoffman, I Howard Fine, Mark Packer (USA)
26. **Functional Vision, Wavefront sensing and Cataract Surgery** 278
Richard S Hoffman, I Howard Fine, Mark Packer (USA)
27. **Piggyback IOLs** 283
Zohar Habot-Wilner (Israel), Irina S Barequet (USA)

Section IV: Intraocular Lenses for Lenticular Refractive Surgery (Phakic IOLs, Multifocal IOL, Accommodating IOLs, Refractive Lens Exchange and Liquid Injectable Polymers)

28. **Types of Phakic Lenses** 295
Jairo Hoyos-Chacon, Melania Cigales, Jairo E Hoyos (Spain)
29. **Phakic IOLs** 304
Mahipal Sachdev, Sri Ganesh, Sathish Prabhu U (India)
30. **Toric Phakic IOLs** 317
Antonio Marinho (Portugal)
31. **Artiflex — A New Phakic IOL** 321
Antonio Marinho (Portugal)
32. **Refractive Floating Implant—A Phakic IOL** 324
Bo Philipson (Swedan)

33. Phakic Refractive Lens (PRL™) for Treating High Myopia 327
Maria I Kalyvianaki, George, D Kymionis, Ioannis G Pallikaris (Greece)

34. Intacs 332
George D Kymionis, Charalambos Siganos, Ioannis G Pallikaris (Greece)

35. The Toric Phakic Iris-claw Lens: Surgical Correction of Myopia, Hyperopia and Astigmatism 336
H Burkhard Dick, Mana Tehrani (Germany)

36. Multifocal Refractive Lenses 344
Ashok Garg (India)

37. Customized IOL : Possibilities and Limitations 349
Paul-Rolf Preussner (Germany)

38. Accommodative IOL : Efficiency and Optimal Designs 358
JT Lin (USA)

39. Ray-tracing Analysis of Accommodating IOL 367
Yoshiaki Nawa (Japan)

40. Diffractive Multifocal Intraocular Lenses 373
Gerald Schmidinger (Austria)

41. Dual Optic Accommodative IOLs 382
GU Auffarth (Germany)

42. Humanoptics Accommodating IOL 386
Sunita Agarwal, Athiya Agarwal, Amar Agarwal, Ashok Garg (India)

43. Pseudoaccommodative ReSTOR IOL to Correct Defocus and Presbyopia in Refractive Lens Exchange 389
Francesco Carones (Italy)

44. ICL™ – STAAR Posterior Chamber Phakic Intraocular Lens 394
Birgit Lackner (Austria)

45. Intraocular Behaviour of Accommodative Intraocular Lenses 398
Ostachs (Germany)

46. Phakic Refractive Lens (PRL™) for Myopia and Hyperopia Correction 409
Dimitrii Dementiev, Kurenkov Vetchiaslav (Italy)

47. Iris Claw Verisyse Phakic IOL 427
Sanjay Chaudhary (India)

48. Analysis of Dual-Optics Accommodating IOL 434
JT Lin (USA)

49. New Life Multifocal Phakic Implant for the Correction of Presbyopia 440
Georges Baikoff (France)

50. Capsule Bag Refilling using Capsulotomy– Capturing Intraocular Lens 447
Okihiro Nishi, Kayo Nishi, Yutaro Nishi, Shiao Chang (Japan)

51. **Refractive Lens Exchange : Current Perspective** 453
I Howard Fine, Mark Packer, Richard Hoffman (USA)

52. **Effect of the Shape Factor on the Quality of Images in Eyes Corrected with IOLs** 461
I Pascual, A Belendez, L Carretero, A Fimia, R Fuentes, C Gonzelez, F Mateos, E Villeagas (Spain)

53. **Quality of Vision in a Pseudophakic Eye** 477
Prema Padamnabhan (India)

Section V : Complications of Intraocular and Phakic Lenses

54. **Complications of Phakic IOLs** 487
I Antonio Marinho (Portugal)

55. **Management of Complications Due to IOL Insertion** 494
Cyres K Mehta, Keiki R Mehta (India)

56. **Management of Dislocated IOLs by the Vitreoretinal Approach** 499
Clemant K Chan, Steve G Lin (USA)

57. **IOL Explantation** 509
Virgilio Centurion, Augusto Cezar Lacava, Juan Carlos Sanchez Carballero (Brazil)

58. **PCO Prevention and Management in Microphaco** 513
Frederic Hehn (France)

59. **Chandelier Illumination and Bimanual Vitrectomy Used to Remove Dislocated IOL** 520
Amar Agarwal, Athiya Agarwal, Sunita Agarwal (India)

Section VI : Recent Advances and Future Prospects in Intraocular Lenses

60. **New IOL Technologies** 525
Tanuj Dada, Harinder S Sethi, Swati Phuljhele, Manoj Gupta (India)

61. **Avances in IOL Materials** 558
Rishi Mohan (India)

62. **Future IOL Designs** 565
Richard L Lindstrom (USA)

63. **Update on MICS Lenses** 568
Gilles Lesieur (France)

64. **New Optic Designs to reduce PCO** 575
Wolf Buehl, Oliver Findl (Austria)

65. **Blue light Filtering Intraocular Lenses** 583
Swati Phulijhele, Lalit Alok, Anand Aggarwal, Tanuj Dada (India)

66. **Futuristic IOLs for Bimanual Microincision Phaco** 588
I Howard Fine, Richard S Hoffman, Mark Packer (USA)

Index 591