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## Retinal stray light originating from intraocular lenses and its effect on visual performance

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# Curriculum Vitae



Marrie van der Mooren was born 17 October 1960, and graduated in 1987 from the Technical University Twente in Applied Physics, became quartermaster in the military service and thereafter a high school science teacher. In 1989 he moved his career to research engineer at the University of Nijmegen in the field of single crystal growth and non linear optics. In 1994 he joined AMO Groningen BV (Abbott Vision) as product development engineer, where he became involved in the Baerveldt Glaucoma shunt and was technical leader and designer for several intraocular lenses including the first Tecnis and Tecnis Multifocal intraocular lens. He developed mechanical and optical test methods according to ISO guidelines. In 2005 he moved to the research department and as scientist responsible for initiating and leading research programs related to clear multifocal vision, intraocular retinal stray light and peripheral vision. He currently holds the position of Research Team Leader.

## Publications

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13. Langeslag, M. J., van der Mooren, M., Beiko, G. H., & Piers, P. A. (2014). Impact of intraocular lens material and design on light scatter: in vitro study. *Journal of Cataract & Refractive Surgery*, 40(12), 2120-2127.
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15. Canovas, C., van der Mooren, M., Rosén, R., Piers, P. A., Wang, L., Koch, D. D., & Artal, P. (2015). Effect of the equivalent refractive index on intraocular lens power prediction with ray tracing after myopic laser in situ keratomileusis. *Journal of Cataract & Refractive Surgery*, 41(5), 1030-1037.

## International Conference contributions

1. Weeber, H., Chang,D., Van der Mooren, M., Graver, J., Lowery,M., Piers, P. (2016). Difference in chromatic aberration of intraocular lenses. XXXIV Congress of the European Society of Cataract and Refractive Surgeons, Copenhagen, Denmark, September 2016
2. Canovas, C., Alarcon, A., Rosen, R., van der Mooren, M., Weeber, H., Piers, P. (2016). Tolerance to astigmatism evaluated for different IOL designs. XXXIV Congress of the European Society of Cataract and Refractive Surgeons, Copenhagen, Denmark, September 2016.
3. Weeber, H., Chang,D., Van der Mooren, M., Graver, J., Piers, P. (2016). Chromatic aberration of intraocular lenses measured in a chromatic model eye. *Investigative Ophthalmology & Visual Science*, 57
4. Van der Mooren, M., Piers, P., Graver, J., Weeber,H. (2016). Halo measurement method for intraocular lenses *Investigative Ophthalmology & Visual Science*, 57
5. Van der Mooren, M. Stray light levels of different intraocular lens designs and materials. 20<sup>th</sup> European Society of Ophthalmology Vienna, Austria June 2015,S32-2
6. J.W. Beenakker, M. State, D.P. Shamonin, M. van der Mooren, B. C. Stoel, A.G. Webb, G.P.M. Luyten, P.Piers. Comparative PCI – MRI retinal shape detection in young phakic eyes. 23<sup>rd</sup> International Society for Magnetic Resonance in Medicine, Toronto, Canada, May-June 2015
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13. Van der Mooren, M., Rosén, R., Piers, P.,Lundström, L. Effect of retinal stray light on visual function. XXXII Congress of the European Society of Cataract and Refractive Surgeons, London,UK, September 2014.
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15. Lundstrom, L., Rosén, R., Van der Mooren, M., Unsbo, P., & Piers, P. A. (2014). Low Amounts of Scattering Reduce Central as well as Peripheral Contrast Sensitivity. *Investigative Ophthalmology & Visual Science*, 55(13), 764-764.
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## International Standard contributions

1. Development of the ANSI standard Z80.27-2001 Aqueous shunts for glaucoma application
2. Eye model proposal in ISO 11979-2: 2014 Ophthalmic implants — Intraocular lenses — Part 2: Optical properties and test methods



## Patent Contributions

1. Methods of obtaining ophthalmic lenses providing the eye with reduced aberrations. (US20140046440) (US20120059463) (EP2332495) (US20110082542) (JP2010029694) (US20090036980) (DE00060131964) (US20070258044) (US20070121064) (ee200200650) (US20040088050) (za2002/09763) (mxPA/a/2002/011538) (BRPI0111043) (EP1284687) (sg92942) (US20020105617) (PE20011347) (WO2001089424) (CA2409692) (EP1943984)
2. Apparatus, system and method to account for spherical aberration at the iris plane in the design of an intraocular lens (US20130282116) (EP2765901)
3. Dual-optic intraocular lens that improves overall vision where there is a local loss of retinal function(US20150265399) (WO2016038470)
4. Fresnel piggyback intraocular lens that improves overall vision where there is a local loss of retinal function (US20160067037)
5. Piggyback intraocular lens that improves overall vision where there is a local loss of retinal function (US20150297342)
6. Intraocular lens that improves overall vision where there is a local loss of retinal function (WO2015150925) (US20150250583)
7. Enhanced toric lens that improves overall vision where there is a local loss of retinal function (WO2015136375) (US20150250585)
8. Ophthalmic devices, system and methods that improve peripheral vision (WO2015177651) (EP2747706)
9. Ophthalmic Devices, Systems, And Methods For Optimizing Peripheral Vision (WO2013028992) (US20130226294)
10. Micro-incision IOL and positioning of the IOL in the eye (EP2967841) (US20140277434) (WO2014140812)
11. Lens providing extended depth of focus and method relating to same (EP2965145) (WO2014135986) (US20140257480)
12. Glaucoma shunts with flow management and improved surgical performance(US20140236068) (EP2789318) (EP2410959) (US20100249691) (WO2010111528) (CA2756672)
13. Apparatus, system, and method for providing an implantable ring for altering a shape of the cornea (US20140277430)
14. Lenses systems and methods for providing binocular customized treatments to correct presbyopia (WO2014087249) (EP2928413)
15. Diffractive binocular lens systems and methods(US20140118684)
16. Systems and methods for determining intraocular lens power (US20120274895) (WO2012149383) (EP2701632)
17. Diffractive binocular lens systems and methods (EP2496180) (US20110109874) (WO2011055228) (CA2780083)
18. A multifocal lens having an optical power add progression, and a system and method of providing same (CA2819629) (WO2012073112)
19. Multifocal intraocular lens (US20130090730) (EP2364457) (WO2010046356) (CA2741158) (US20100100178) (US20100097569)
20. System and method for measuring dysphotopsia (WO2015081214) (US20150216404)
21. Apparatus, system, and method for providing an optical filter for an implantable lens (US20140324166)
22. Customized intraocular lens power calculation system and method (US20120044454) (WO2012024152) (CA2808791)
23. Customized multifocal ophthalmic lens (US20100281021) (EP2229091) (WO2009076670)
24. New intraocular lens (WO2001005327)