Pablo Artal Soriano

List of Publications by Year
in descending order

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333 papers	13,005 citations	26567 56 h-index	34900 98 g-index
339 all docs	339 docs citations	339 times ranked	4132 citing authors

#	Article	IF	Citations
1	Adaptive-optics ultrahigh-resolution optical coherence tomography. Optics Letters, 2004, 29, 2142.	1.7	431
2	Contribution of the cornea and internal surfaces to the change of ocular aberrations with age. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2002, 19, 137.	0.8	419
3	Compensation of corneal aberrations by the internal optics in the human eye. Journal of Vision, 2001, 1, 1.	0.1	328
4	Dynamics of the eyeâ€™s wave aberration. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 497.	0.8	306
5	Ocular wave-front aberration statistics in a normal young population. Vision Research, 2002, 42, 1611-1617.	0.7	268
6	Analysis of the performance of the Hartmannâ€“Shack sensor in the human eye. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 1388.	0.8	260
7	Optical aberrations of the human cornea as a function of age. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 1697.	0.8	253
8	Closed-loop adaptive optics in the human eye. Optics Letters, 2001, 26, 746.	1.7	235
9	Peripheral refractive errors in myopic, emmetropic, and hyperopic young subjects. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2002, 19, 2363.	0.8	220
10	Determination of the point-spread function of human eyes using a hybrid opticalâ€“digital method. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1987, 4, 1109.	0.8	217
11	Neural compensation for the eyeâ€™s optical aberrations. Journal of Vision, 2004, 4, 4.	0.1	214
12	Contributions of the cornea and the lens to the aberrations of the human eye. Optics Letters, 1998, 23, 1713.	1.7	198
13	Comparison of the Retinal Image Quality with a Hartmann-Shack Wavefront Sensor and a Double-Pass Instrument. , 2006, 47, 1710.		195
14	An Objective Scatter Index Based on Double-Pass Retinal Images of a Point Source to Classify Cataracts. PLoS ONE, 2011, 6, e16823.	1.1	194
15	Modulation transfer of the human eye as a function of retinal eccentricity. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1993, 10, 201.	0.8	190
16	Corneal Optical Aberrations and Retinal Image Quality in Patients in Whom Monofocal Intraocular Lenses Were Implanted. JAMA Ophthalmology, 2002, 120, 1143.	2.6	187
17	Effects of aging in retinal image quality. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1993, 10, 1656.	0.8	182
18	The human eye is an example of robust optical design. Journal of Vision, 2006, 6, 1.	0.1	175

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19	Membrane deformable mirror for adaptive optics: performance limits in visual optics. Optics Express, 2003, 11, 1056.	1.7	163
20	Corneal wave aberration from videokeratography: accuracy and limitations of the procedure. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2000, 17, 955.	0.8	154
21	Odd aberrations and double-pass measurements of retinal image quality. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1995, 12, 195.	0.8	151
22	Correction of the aberrations in the human eye with a liquid-crystal spatial light modulator: limits to performance. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1998, 15, 2552.	0.8	145
23	Double-pass measurements of the retinal-image quality with unequal entrance and exit pupil sizes and the reversibility of the eyeâ€™s optical system. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1995, 12, 2358.	0.8	130
24	Three-dimensional adaptive optics ultrahigh-resolution optical coherence tomography using a liquid crystal spatial light modulator. Vision Research, 2005, 45, 3432-3444.	0.7	129
25	Off-axis optical quality and retinal sampling in the human eye. Vision Research, 1996, 36, 1103-1114.	0.7	127
26	Corneal Aberrations before and after Small-Incision Cataract Surgery. , 2004, 45, 4312.		127
27	Adaptive optics with a programmable phase modulator: applications in the human eye. Optics Express, 2004, 12, 4059.	1.7	127
28	Predicting the Optical Performance of Eyes Implanted with IOLs to Correct Spherical Aberration. , 2006, 47, 4651.		127
29	Theoretical Comparison of Aberration-correcting Customized and Aspheric Intraocular Lenses. Journal of Refractive Surgery, 2007, 23, 374-384.	1.1	119
30	Adaptive Optics Simulation of Intraocular Lenses with Modified Spherical Aberration. , 2004, 45, 4601.		115
31	Vision science and adaptive optics, the state of the field. Vision Research, 2017, 132, 3-33.	0.7	115
32	Monochromatic modulation transfer function of the human eye for different pupil diameters: an analytical expression. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1994, 11, 246.	0.8	112
33	Optical Quality Analysis System. Journal of Cataract and Refractive Surgery, 2004, 30, 1598-1599.	0.7	110
34	Minimum amount of astigmatism that should be corrected. Journal of Cataract and Refractive Surgery, 2014, 40, 13-19.	0.7	105
35	Chromatic aberration correction of the human eye for retinal imaging in the near infrared. Optics Express, 2006, 14, 6213.	1.7	103
36	Visual effect of the combined correction of spherical and longitudinal chromatic aberrations. Optics Express, 2010, 18, 1637.	1.7	103

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37	Double-pass imaging polarimetry in the human eye. Optics Letters, 1999, 24, 64.	1.7	101
38	Objective optical assessment of tear-film quality dynamics in normal and mildly symptomatic dry eyes. Journal of Cataract and Refractive Surgery, 2011, 37, 1481-1487.	0.7	100
39	Mechanism of compensation of aberrations in the human eye. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2007, 24, 3274.	0.8	99
40	Optics of the eye and its impact in vision: a tutorial. Advances in Optics and Photonics, 2014, 6, 340.	12.1	92
41	Refraction, aliasing, and the absence of motion reversals in peripheral vision. Vision Research, 1995, 35, 939-947.	0.7	89
42	Ocular aberrations as a function of wavelength in the near infrared measured with a femtosecond laser. Optics Express, 2005, 13, 400.	1.7	85
43	Off-axis monochromatic aberrations estimated from double pass measurements in the human eye. Vision Research, 1999, 39, 207-217.	0.7	78
44	Peripheral optical errors and their change with accommodation differ between emmetropic and myopic eyes. Journal of Vision, 2009, 9, 17-17.	0.1	76
45	Through focus image quality of eyes implanted with monofocal and multifocal intraocular lenses. Optical Engineering, 1995, 34, 772.	0.5	75
46	Study on the effects of monochromatic aberrations in the accommodation response by using adaptive optics. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 1732.	0.8	73
47	Extended source pyramid wave-front sensor for the human eye. Optics Express, 2002, 10, 419.	1.7	72
48	Use of adaptive optics to determine the optimal ocular spherical aberration. Journal of Cataract and Refractive Surgery, 2007, 33, 1721-1726.	0.7	72
49	Neural compensation for the best aberration correction. Journal of Vision, 2007, 7, 9.	0.1	72
50	Optical aberrations and alignment of the eye with age. Journal of Vision, 2010, 10, 34-34.	0.1	72
51	Multiphoton Microscopy of Ex Vivo Corneas after Collagen Cross-Linking. , 2011, 52, 5325.		71
52	Comparison of double-pass estimates of the retinal-image quality obtained with green and near-infrared light. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 961.	0.8	68
53	Effect of optical correction and remaining aberrations on peripheral resolution acuity in the human eye. Optics Express, 2007, 15, 12654.	1.7	68
54	Retinal image quality in the rodent eye. Visual Neuroscience, 1998, 15, 597-605.	0.5	67

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55	Wide-field optical model of the human eye with asymmetrically tilted and decentered lens that reproduces measured ocular aberrations. Optica, 2015, 2, 124.	4.8	66
56	Single pixel camera ophthalmoscope. Optica, 2016, 3, 1056.	4.8	66
57	Guided light and diffraction model of human-eye photoreceptors. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 2318.	0.8	65
58	Optical Quality of the Eye in Subjects with Normal and Excellent Visual Acuity. , 2008, 49, 4688.		65
59	Functional Optical Zone of the Cornea. , 2007, 48, 1053.		61
60	Spatially Resolved Wavefront Aberrations of Ophthalmic Progressive-Power Lenses in Normal Viewing Conditions. Optometry and Vision Science, 2003, 80, 106-114.	0.6	60
61	Adaptive Optics Visual Simulator. Journal of Refractive Surgery, 2002, 18, .	1.1	60
62	Analysis of Corneal Stroma Organization With Wavefront Optimized Nonlinear Microscopy. Cornea, 2011, 30, 692-701.	0.9	59
63	Instrument for measuring the misalignments of ocular surfaces. Optics Express, 2006, 14, 10945.	1.7	58
64	Binocular adaptive optics visual simulator. Optics Letters, 2009, 34, 2628.	1.7	58
65	Optical Quality of Emmetropic and Myopic Eyes in the Periphery Measured with High-Angular Resolution. , 2012, 53, 3405.		58
66	Aberration Generation by Contact Lenses With Aspheric and Asymmetric Surfaces. Journal of Refractive Surgery, 2002, 18, .	1.1	58
67	Estimates of the ocular wave aberration from pairs of double-pass retinal images. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1998, 15, 2466.	0.8	56
68	Three-Dimensional Cataract Crystalline Lens Imaging With Swept-Source Optical Coherence Tomography. , 2018, 59, 897.		56
69	Optical Modulation Transfer and Contrast Sensitivity with Decentered Small Pupils in the Human Eye. Vision Research, 1996, 36, 3575-3586.	0.7	55
70	Optical Characterization of Bangerter Foils. , 2010, 51, 609.		55
71	Interferometric method for phase calibration in liquid crystal spatial light modulators using a self-generated diffraction-grating. Optics Express, 2016, 24, 14159.	1.7	55
72	High-resolution imaging of the living human fovea: measurement of the intercenter cone distance by speckle interferometry. Optics Letters, 1989, 14, 1098.	1.7	54

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73	Calculations of two-dimensional foveal retinal images in real eyes. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1990, 7, 1374.	0.8	54
74	Modulation transfer functions of eyes implanted with intraocular lenses. Applied Optics, 1993, 32, 6359.	2.1	53
75	Wave-aberration control with a liquid crystal on silicon (LCOS) spatial phase modulator. Optics Express, 2009, 17, 11013.	1.7	53
76	Fast scanning peripheral wave-front sensor for the human eye. Optics Express, 2011, 19, 7903.	1.7	53
77	Impact of intraocular lens haptic design and orientation on decentration and tilt. Journal of Cataract and Refractive Surgery, 2011, 37, 1768-1774.	0.7	52
78	Optical Quality One Month After Verisyse and Veriflex Phakic IOL Implantation and Zeiss MEL 80 LASIK for Myopia From 5.00 to 16.50 Diopters. Journal of Refractive Surgery, 2009, 25, 689-698.	1.1	52
79	Correlation between Optical and Psychophysical Parameters as a Function of Defocus. Optometry and Vision Science, 2002, 79, 60-67.	0.6	51
80	Liquid crystal Adaptive Optics Visual Simulator: Application to testing and design of ophthalmic optical elements. Optics Express, 2007, 15, 16177.	1.7	51
81	Binocular Visual Simulation of a Corneal Inlay to Increase Depth of Focus. , 2011, 52, 5273.		51
82	Grading nuclear, cortical and posterior subcapsular cataracts using an objective scatter index measured with a double-pass system. British Journal of Ophthalmology, 2012, 96, 1204-1210.	2.1	50
83	Optical modeling of a corneal inlay in real eyes to increase depth of focus: Optimum centration and residual defocus. Journal of Cataract and Refractive Surgery, 2012, 38, 270-277.	0.7	49
84	High-resolution retinal images obtained by deconvolution from wave-front sensing. Optics Letters, 2000, 25, 1804.	1.7	45
85	Adaptive optics multiphoton microscopy to study ex vivo ocular tissues. Journal of Biomedical Optics, 2010, 15, 066004.	1.4	44
86	Retinal image quality in the human eye as a function of the accommodation. Vision Research, 1998, 38, 2897-2907.	0.7	43
87	Directional imaging of the retinal cone mosaic. Optics Letters, 2004, 29, 968.	1.7	43
88	Swept source optical coherence tomography and tunable lens technology for comprehensive imaging and biometry of the whole eye. Optica, 2018, 5, 52.	4.8	43
89	Reproducibility of intraocular lens decentration and tilt measurement using a clinical Purkinje meter. Journal of Cataract and Refractive Surgery, 2010, 36, 1529-1535.	0.7	42
90	The wide-angle point spread function of the human eye reconstructed by a new optical method. Journal of Vision, 2012, 12, 20-20.	0.1	42

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91	Coherent imaging of the cone mosaic in the living human eye. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1996, 13, 897.	0.8	41
92	Intraocular lens to correct corneal coma. Optics Letters, 2007, 32, 406.	1.7	41
93	Evaluating the peripheral optical effect of multifocal contact lenses. Ophthalmic and Physiological Optics, 2012, 32, 527-534.	1.0	41
94	Visual Acuity and Optical Parameters in Progressive-Power Lenses. Optometry and Vision Science, 2006, 83, 672-681.	0.6	40
95	Retrieval of wave aberration of human eyes from actual point-spread-function data. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1988, 5, 1201.	0.8	39
96	Laser In Situ Keratomileusis Disrupts the Aberration Compensation Mechanism of the Human Eye. American Journal of Ophthalmology, 2009, 147, 424-431.e1.	1.7	39
97	Simultaneous measurement of two-point-spread functions at different locations across the human fovea. Applied Optics, 1992, 31, 3646.	2.1	38
98	Ocular aberrations up to the infrared range: from 6328 to 1070 nm. Optics Express, 2008, 16, 21199.	1.7	37
99	Impact on stereo-acuity of two presbyopia correction approaches: monovision and small aperture inlay. Biomedical Optics Express, 2013, 4, 822.	1.5	37
100	Customized eye models for determining optimized intraocular lenses power. Biomedical Optics Express, 2011, 2, 1649.	1.5	36
101	Volumetric macro- and micro-scale assessment of crystalline lens opacities in cataract patients using long-depth-range swept source optical coherence tomography. Biomedical Optics Express, 2018, 9, 3821.	1.5	36
102	Optical Aberrations and the Aging Eye. International Ophthalmology Clinics, 2003, 43, 63-77.	0.3	35
103	Wavefront optimized nonlinear microscopy of ex vivo human retinas. Journal of Biomedical Optics, 2010, 15, 026007.	1.4	35
104	Influence of Stilesâ€“Crawford apodization on visual acuity. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2002, 19, 1073.	0.8	34
105	A wavelength tunable wavefront sensor for the human eye. Optics Express, 2008, 16, 7748.	1.7	34
106	Impact of scattering and spherical aberration in contrast sensitivity. Journal of Vision, 2009, 9, 19-19.	0.1	34
107	A Randomized Comparison of Pupil-Centered Versus Vertex-Centered Ablation in LASIK Correction of Hyperopia. American Journal of Ophthalmology, 2011, 152, 591-599.e2.	1.7	34
108	Binocular adaptive optics vision analyzer with full control over the complex pupil functions. Optics Letters, 2011, 36, 4779.	1.7	34

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109	Hybrid adaptive-optics visual simulator. Optics Letters, 2010, 35, 196.	1.7	33
110	In vivo two-photon microscopy of the human eye. Scientific Reports, 2019, 9, 10121.	1.6	33
111	Are Optical Aberrations During Accommodation a Significant Problem for Refractive Surgery?. Journal of Refractive Surgery, 2002, 18, .	1.1	33
112	The eye's aplanatic answer. Nature Photonics, 2008, 2, 586-589.	15.6	32
113	Lens Oscillations in the Human Eye. Implications for Post-Saccadic Suppression of Vision. PLoS ONE, 2014, 9, e95764.	1.1	32
114	Extended Depth of Focus With Induced Spherical Aberration in Light-Adjustable Intraocular Lenses. American Journal of Ophthalmology, 2014, 157, 142-149.	1.7	32
115	Adaptive Optics for Vision: The Eye's Adaptation to Point Spread Function. Journal of Refractive Surgery, 2003, 19, .	1.1	32
116	Statistical description of wave-front aberration in the human eye. Optics Letters, 2002, 27, 37.	1.7	31
117	My life in Visual Optics: from the lab to the real world. Journal of Vision, 2019, 19, 1.	0.1	31
118	Performance evaluation of a sensorless adaptive optics multiphoton microscope. Journal of Microscopy, 2016, 261, 249-258.	0.8	30
119	Understanding Aberrations By Using Double-pass Techniques. Journal of Refractive Surgery, 2000, 16, .	1.1	29
120	The effect of blur adaptation on accommodative response and pupil size during reading. Journal of Vision, 2010, 10, 1-1.	0.1	28
121	Adaptive optics binocular visual simulator to study stereopsis in the presence of aberrations. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2010, 27, A48.	0.8	28
122	Binocular visual acuity for the correction of spherical aberration in polychromatic and monochromatic light. Journal of Vision, 2014, 14, 8-8.	0.1	28
123	Single-pixel imaging of the retina through scattering media. Biomedical Optics Express, 2019, 10, 4159.	1.5	28
124	Applications of augmented reality in ophthalmology [Invited]. Biomedical Optics Express, 2021, 12, 511.	1.5	28
125	Reconstruction of the point-spread function of the human eye from two double-pass retinal images by phase-retrieval algorithms. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1998, 15, 326.	0.8	27
126	Assessment of subjective refraction with a clinical adaptive optics visual simulator. Journal of Cataract and Refractive Surgery, 2019, 45, 87-93.	0.7	27

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127	Wide-angle chromatic aberration corrector for the human eye. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2007, 24, 1538.	0.8	26
128	Compact optical integration instrument to measure intraocular straylight. Biomedical Optics Express, 2014, 5, 3036.	1.5	26
129	Injectable intraocular telescope: Pilot study. Journal of Cataract and Refractive Surgery, 2015, 41, 2125-2135.	0.7	26
130	Aberration generation by contact lenses with aspheric and asymmetric surfaces. Journal of Refractive Surgery, 2002, 18, S603-9.	1.1	26
131	Polarization and retinal image quality estimates in the human eye. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2001, 18, 489.	0.8	25
132	Analysis of the chicken retina with an adaptive optics multiphoton microscope. Biomedical Optics Express, 2011, 2, 1637.	1.5	25
133	Effect of corneal aberrations on intraocular lens power calculations. Journal of Cataract and Refractive Surgery, 2012, 38, 1325-1332.	0.7	25
134	Wavelength Dependence of the Ocular Straylight. , 2013, 54, 3702.		25
135	Dynamics of the near response under natural viewing conditions with an open-view sensor. Biomedical Optics Express, 2015, 6, 4200.	1.5	25
136	Comparison of the Optical Image Quality in the Periphery of Phakic and Pseudophakic Eyes. , 2013, 54, 3594.		24
137	Comparison of binocular through-focus visual acuity with monovision and a small aperture inlay. Biomedical Optics Express, 2014, 5, 3355.	1.5	24
138	Refractive accuracy with light-adjustable intraocular lenses. Journal of Cataract and Refractive Surgery, 2014, 40, 1075-1084.	0.7	24
139	Incorporation of directional effects of the retina into computations of optical transfer functions of human eyes. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1989, 6, 1941.	0.8	23
140	Comparison of aberrations in different types of progressive power lenses. Ophthalmic and Physiological Optics, 2004, 24, 419-426.	1.0	23
141	Degree of polarization as an objective method of estimating scattering. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2004, 21, 1316.	0.8	23
142	Temporal dynamics of ocular aberrations: monocular vs binocular vision. Ophthalmic and Physiological Optics, 2009, 29, 256-263.	1.0	23
143	Relationship between Induced Spherical Aberration and Depth of Focus after Hyperopic LASIK in Presbyopic Patients. Ophthalmology, 2015, 122, 233-243.	2.5	23
144	Fluorescent bicolour sensor for low-background neutrinoless double Î² decay experiments. Nature, 2020, 583, 48-54.	13.7	23

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145	Theoretical comparison of aberration-correcting customized and aspheric intraocular lenses. Journal of Refractive Surgery, 2007, 23, 374-84.	1.1	23
146	Peripheral aberrations in the human eye for different wavelengths: off-axis chromatic aberration. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2011, 28, 1871.	0.8	22
147	The accommodative ciliary muscle function is preserved in older humans. Scientific Reports, 2016, 6, 25551.	1.6	22
148	Initial Clinical Results of a New Telescopic IOL Implanted in Patients With Dry Age-Related Macular Degeneration. Journal of Refractive Surgery, 2015, 31, 158-162.	1.1	22
149	Image Formation in the Living Human Eye. Annual Review of Vision Science, 2015, 1, 1-17.	2.3	21
150	Variability in angle Î¹ and its influence on higher-order aberrations in pseudophakic eyes. Journal of Cataract and Refractive Surgery, 2017, 43, 1015-1019.	0.7	21
151	Wavefront correction in two-photon microscopy with a multi-actuator adaptive lens. Optics Express, 2018, 26, 14278.	1.7	21
152	Night Myopia Studied with an Adaptive Optics Visual Analyzer. PLoS ONE, 2012, 7, e40239.	1.1	21
153	Phase-transfer function of the human eye and its influence on point-spread function and wave aberration. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1988, 5, 1791.	0.8	20
154	Temporal wavefront stability of an ultrafast high-power laser beam. Applied Optics, 2009, 48, 770.	2.1	20
155	Effect of the equivalent refractive index on intraocular lens power prediction with ray tracing after myopic laser in situ keratomileusis. Journal of Cataract and Refractive Surgery, 2015, 41, 1030-1037.	0.7	20
156	An aspheric intraocular telescope for age-related macular degeneration patients. Biomedical Optics Express, 2015, 6, 1010.	1.5	19
157	Visual acuity in two-photon infrared vision. Optica, 2017, 4, 1488.	4.8	19
158	Adaptive optics for vision: the eye's adaptation to point spread function. Journal of Refractive Surgery, 2003, 19, S585-7.	1.1	19
159	Chromatic aberration control with liquid crystal spatial phase modulators. Optics Express, 2017, 25, 9793.	1.7	17
160	Simulating Outcomes of Cataract Surgery: Important Advances in Ophthalmology. Annual Review of Biomedical Engineering, 2021, 23, 277-306.	5.7	17
161	Impact of longitudinal chromatic aberration on through-focus visual acuity. Optics Express, 2019, 27, 35935.	1.7	17
162	Wavefront-shaping-based correction of optically simulated cataracts. Optica, 2020, 7, 22.	4.8	17

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163	Image processing enhancement of high-resolution TEM micrographs of nanometer-size metal particles. Ultramicroscopy, 1989, 30, 405-416.	0.8	16
164	Temporal evolution of ocular aberrations following laser in situ keratomileusis. Ophthalmic and Physiological Optics, 2011, 31, 421-428.	1.0	16
165	Minimum change in spherical aberration that can be perceived. Biomedical Optics Express, 2016, 7, 3471.	1.5	16
166	Two-dimensional Peripheral Refraction and Retinal Image Quality in Emmetropic Children. Scientific Reports, 2019, 9, 16203.	1.6	16
167	Spherical Aberration Customization to Extend the Depth of Focus With a Clinical Adaptive Optics Visual Simulator. Journal of Refractive Surgery, 2020, 36, 223-229.	1.1	16
168	An Analytical Model Describing Aberrations in the Progression Corridor of Progressive Addition Lenses. Optometry and Vision Science, 2006, 83, 666-671.	0.6	15
169	Multiphoton imaging microscopy at deeper layers with adaptive optics control of spherical aberration. Journal of Biomedical Optics, 2013, 19, 011007.	1.4	15
170	Quantitative Discrimination of Healthy and Diseased Corneas With Second Harmonic Generation Microscopy. Translational Vision Science and Technology, 2019, 8, 51.	1.1	15
171	Aberro-pola riscope for the human eye. Optics Letters, 2003, 28, 1209.	1.7	14
172	Blind deconvolution for high-resolution confocal scanning laser ophthalmoscopy. Journal of Optics, 2005, 7, 585-592.	1.5	14
173	Dynamic eye model for adaptive optics testing. Applied Optics, 2007, 46, 6971.	2.1	14
174	Wavefront measurements of phase plates combining a point-diffraction interferometer and a Hartmann-Shack sensor. Applied Optics, 2010, 49, 450.	2.1	14
175	Achromatic doublet intraocular lens for full aberration correction. Biomedical Optics Express, 2017, 8, 2396.	1.5	14
176	GPU-based processing of Hartmannâ€“Shack images for accurate and high-speed ocular wavefront sensing. Future Generation Computer Systems, 2019, 91, 177-190.	4.9	14
177	Fabrication and characterization of diffraction gratings in ophthalmic polymers by using UV direct laser interference patterning. Applied Surface Science, 2019, 476, 128-135.	3.1	14
178	Confocal scanning laser ophthalmoscope with adaptive optical wavefront correction. , 2003, , .		13
179	Symmetries in peripheral ocular aberrations. Journal of Modern Optics, 2011, 58, 1690-1695.	0.6	13
180	Binocular visual performance with aberration correction as a function of light level. Journal of Vision, 2014, 14, 6-6.	0.1	13

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181	Location of Achromatizing Pupil Position and First Purkinje Reflection in a Normal Population. Investigative Ophthalmology and Visual Science, 2015, 56, 962-966.	3.3	13
182	Consecutive case series of 244 age-related macular degeneration patients undergoing implantation with an extended macular vision IOL. European Journal of Ophthalmology, 2018, 28, 198-203.	0.7	13
183	Femtosecond infrared intrastromal ablation and backscattering-mode adaptive-optics multiphoton microscopy in chicken corneas. Biomedical Optics Express, 2011, 2, 2950.	1.5	12
184	Binocular open-view instrument to measure aberrations and pupillary dynamics. Optics Letters, 2014, 39, 4773.	1.7	12
185	Impact of scatter on double-pass image quality and contrast sensitivity measured with a single instrument. Biomedical Optics Express, 2015, 6, 4841.	1.5	12
186	Second-harmonic generation microscopy of photocurable polymer intrastromal implants in ex-vivo corneas. Biomedical Optics Express, 2015, 6, 2211.	1.5	12
187	Design of an accurate and high-speed binocular pupil tracking system based on GPGPUs. Journal of Supercomputing, 2018, 74, 1836-1862.	2.4	12
188	Wide-range adaptive optics visual simulator with a tunable lens. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2019, 36, 722.	0.8	12
189	Effect of Crystalline Lens Aberrations on Adaptive Optics Simulation of Intraocular Lenses. Journal of Refractive Surgery, 2019, 35, 126-131.	1.1	12
190	Understanding aberrations by using double-pass techniques. Journal of Refractive Surgery, 2000, 16, S560-2.	1.1	12
191	Adaptive optics visual simulator. Journal of Refractive Surgery, 2002, 18, S634-8.	1.1	12
192	Optics of human eye: 400 years of exploration from Galileoâ€™s time. Applied Optics, 2010, 49, D123.	2.1	11
193	Second Harmonic Generation Microscopy: A Tool for Quantitative Analysis of Tissues. , 0, , .		11
194	Intraocular scattering compensation in retinal imaging. Biomedical Optics Express, 2016, 7, 3996.	1.5	11
195	Two-Dimensional, High-Resolution Peripheral Refraction in Adults with Isomyopia and Anisomyopia. , 2020, 61, 16.		11
196	Two-dimensional peripheral refraction and retinal image quality in orthokeratology lens wearers. Biomedical Optics Express, 2020, 11, 3523.	1.5	11
197	Changes of ocular aberrations with gaze. Ophthalmic and Physiological Optics, 2009, 29, 264-271.	1.0	10
198	Relationship between wave aberrations and histological features in ex vivo porcine crystalline lenses. Journal of Biomedical Optics, 2010, 15, 055001.	1.4	10

#	Article	IF	Citations
199	Myopia: Why Study the Mechanisms of Myopia? Novel Approaches to Risk Factors Signaling Eye Growth-How Could Basic Biology Be Translated into Clinical Insights? Where Are Genetic and Proteomic Approaches Leading? How Does Visual Function Contribute to and Interact with Ametropia? Does Eye Shape Matter? Why Ametropia at All?. Optometry and Vision Science, 2011, 88, 404-447.	0.6	10
200	Portable device for presbyopia correction with optoelectronic lenses driven by pupil response. Scientific Reports, 2020, 10, 20293.	1.6	10
201	In vivo SS-OCT imaging of crystalline lens sutures. Biomedical Optics Express, 2020, 11, 5388.	1.5	10
202	Optical Measurement of Straylight in Eyes With Cataract. Journal of Refractive Surgery, 2016, 32, 846-850.	1.1	10
203	Are optical aberrations during accommodation a significant problem for refractive surgery?. Journal of Refractive Surgery, 2002, 18, S563-6.	1.1	10
204	Phasor averaging for wavefront correction with liquid crystal spatial light modulators. Optics Communications, 1998, 152, 233-238.	1.0	9
205	Transmission imaging polarimetry for a linear birefringent medium using a carrier fringe method. Applied Optics, 2006, 45, 5489.	2.1	9
206	Secondâ€harmonic microscopy of ex vivo porcine corneas. Journal of Microscopy, 2008, 232, 158-163.	0.8	9
207	Nonlinear registration for scanned retinal images: application to ocular polarimetry. Applied Optics, 2008, 47, 5341.	2.1	9
208	Average double-pass ocular diattenuation using foveal fixation. Journal of Modern Optics, 2008, 55, 849-859.	0.6	9
209	Environmental and Genetic Factors Explain Differences in Intraocular Scattering. , 2016, 57, 163.		9
210	Volumetric Optical Imaging and Quantitative Analysis of Age-Related Changes in Anterior Human Vitreous. , 2021, 62, 31.		9
211	Phase-only modulation with two vertical aligned liquid crystal devices. Optics Express, 2020, 28, 34180.	1.7	9
212	Optical digital implementation of the Wigner distribution function: use in space variant filtering of real images. Applied Optics, 1990, 29, 2569.	2.1	8
213	Modeling the mechanism of compensation of aberrations in the human eye for accommodation and aging. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2011, 28, 1889.	0.8	8
214	Night myopia is reduced in binocular vision. Journal of Vision, 2016, 16, 16.	0.1	8
215	Performance evaluation of a two detector camera for real-time video. Applied Optics, 2016, 55, 10198.	2.1	8
216	Comparison of intraocular lens decentration and tilt measurements using 2 Purkinje meter systems. Journal of Cataract and Refractive Surgery, 2017, 43, 648-655.	0.7	8

#	Article	IF	Citations
217	Comparison of second harmonic microscopy images of collagen-based ocular tissues with 800 and 1045 nm. Biomedical Optics Express, 2017, 8, 5065.	1.5	8
218	Light scattering in the human eye modelled as random phase perturbations. Biomedical Optics Express, 2018, 9, 2664.	1.5	8
219	Simultaneous aberration and aperture control using a single spatial light modulator. Optics Express, 2019, 27, 12399.	1.7	8
220	The Role of Thermal Accumulation on the Fabrication of Diffraction Gratings in Ophthalmic PHEMA by Ultrashort Laser Direct Writing. Polymers, 2020, 12, 2965.	2.0	8
221	Objective method for measuring the macular pigment optical density in the eye. Biomedical Optics Express, 2019, 10, 3572.	1.5	8
222	Vision with pulsed infrared light is mediated by nonlinear optical processes. Biomedical Optics Express, 2020, 11, 5603.	1.5	8
223	Optical-Digital Procedure For The Determination Of White-Light Retinal Images Of A Point Test. Optical Engineering, 1989, 28, 687.	0.5	7
224	History of IOLs that correct spherical aberration. Journal of Cataract and Refractive Surgery, 2009, 35, 962-963.	0.7	7
225	Scattering contribution to the double-pass PSF using Monte Carlo simulations. Ophthalmic and Physiological Optics, 2017, 37, 342-346.	1.0	7
226	Improved multiphoton imaging in biological samples by using variable pulse compression and wavefront assessment. Optics Communications, 2018, 422, 44-51.	1.0	7
227	Perceived brightness with small apertures. Journal of Cataract and Refractive Surgery, 2018, 44, 734-737.	0.7	7
228	One-year follow-up of changes in refraction and aberrations induced by corneal incision. PLoS ONE, 2019, 14, e0224823.	1.1	7
229	A VSIA Sponsored Effort to Develop Methods and Standards for the Comparison of the Wavefront Aberration Structure of the Eye Between Devices and Laboratories. , 1999, , .		7
230	Peripheral Refraction and Contrast Detection Sensitivity in Pseudophakic Patients Implanted With a New Meniscus Intraocular Lens. Journal of Refractive Surgery, 2022, 38, 229-234.	1.1	7
231	Directional light scanning laser ophthalmoscope. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 2606.	0.8	6
232	Corneal polarimetry after LASIK refractive surgery. Journal of Biomedical Optics, 2006, 11, 014001.	1.4	6
233	Purkinje imaging system to measure anterior segment scattering in the human eye. Optics Letters, 2007, 32, 3447.	1.7	6
234	Spatial properties of fundus reflectance and redâ€“green relative spectral sensitivity. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2015, 32, 1723.	0.8	6

#	Article	IF	Citations
235	Performance of a differential contrast sensitivity method to measure intraocular scattering. Biomedical Optics Express, 2017, 8, 1382.	1.5	6
236	Binocular dynamics of accommodation, convergence, and pupil size in myopes. Biomedical Optics Express, 2021, 12, 3282.	1.5	6
237	Peripheral image quality in pseudophakic eyes. Biomedical Optics Express, 2020, 11, 1892.	1.5	6
238	Adaptation to the eyeâ€™s chromatic aberration measured with an adaptive optics visual simulator. Optics Express, 2020, 28, 37450.	1.7	6
239	Impact of positive coupling of the eyeâ€™s trefoil and coma in retinal image quality and visual acuity. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2012, 29, 1667.	0.8	5
240	Comparison of two scanning instruments to measure peripheral refraction in the human eye. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2012, 29, 258.	0.8	5
241	Patientâ€specific determination of change in ocular spherical aberration to improve near and intermediate visual acuity of presbyopic eyes. Journal of Biophotonics, 2019, 12, e201800259.	1.1	5
242	Straylight in Different Types of Intraocular Lenses. Translational Vision Science and Technology, 2020, 9, 16.	1.1	5
243	Effect of intraocular scattering in macular pigment optical density measurements. Journal of Biomedical Optics, 2018, 23, 1.	1.4	5
244	Initial Clinical Results With a Novel Monofocal-Type Intraocular Lens for Extended Macular Vision in Patients With Macular Degeneration. Journal of Refractive Surgery, 2018, 34, 718-725.	1.1	5
245	Instrument for fast whole-field peripheral refraction in the human eye. Biomedical Optics Express, 2022, 13, 2947.	1.5	5
246	Pupil meter and tracking system based in a fast image processing algorithm. , 1999, 3591, 63.		4
247	Retinal cell imaging in myopic chickens using adaptive optics multiphoton microscopy. Biomedical Optics Express, 2014, 5, 664.	1.5	4
248	GPU-Accelerated High-Speed Eye Pupil Tracking System. , 2015, , .		4
249	Micrometric Control of the Optics of the Human Eye: Environment or Genes?. , 2017, 58, 1964.		4
250	2-D Peripheral image quality metrics with different types of multifocal contact lenses. Scientific Reports, 2019, 9, 18487.	1.6	4
251	Adaptation to Brightness Perception in Patients Implanted With a Small Aperture. American Journal of Ophthalmology, 2019, 197, 36-44.	1.7	4
252	Inheritance of Refractive Error in Millennials. Scientific Reports, 2020, 10, 8173.	1.6	4

#	Article	IF	Citations
253	Intraocular Scattering, Blinking Rate, and Tear Film Osmolarity After Exposure to Environmental Stress. Translational Vision Science and Technology, 2021, 10, 12.	1.1	4
254	Tear-film dynamics by combining double-pass images, pupil retro-illumination, and contrast sensitivity. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2019, 36, B138.	0.8	4
255	Asymmetric wide-field optical model of the human eye with tilted and decentered crystalline lens that reproduces experimentally measured aberrations: errata. Optica, 2018, 5, 1461.	4.8	4
256	Double-pass wavefront shaping for scatter correction in a cataractâ€™s model. Optics Express, 2021, 29, 42208.	1.7	4
257	Digital image processing of nanometer-size metal particles on amorphous substrates. Ultramicroscopy, 1988, 24, 19-25.	0.8	3
258	Light scattering in intraocular lenses explanted 15 to 40 years after surgery. Biomedical Optics Express, 2021, 12, 3485.	1.5	3
259	Aging Effects on the Optics of the Eye. , 2008, , 35-44.		3
260	Cause of Monocular Diplopia Diagnosed by Combining Double-pass Retinal Image Assessment and Hartmann-Shack Aberrometry. Journal of Refractive Surgery, 2010, 26, 301-304.	1.1	3
261	A New Intraocular Lens to Correct Corneal Coma. Optics and Photonics News, 2007, 18, 48.	0.4	2
262	Nonlinear 3D microscopy of ex vivo corneas. Proceedings of SPIE, 2010, , .	0.8	2
263	Increased crystalline lens coverage in optical coherence tomography with oblique scanning and volume stitching. Biomedical Optics Express, 2021, 12, 1529.	1.5	2
264	The Eye as an Optical Instrument. , 2016, , 285-297.		2
265	How stable is the shape of the ocular point spread function during normal viewing?. Journal of Vision, 2010, 3, 30-30.	0.1	2
266	Second harmonic generation microscopy of the living human cornea. , 2018, , .		2
267	Energy-efficient design of a presbyopia correction wearable powered by mobile GPUs and FPGAs. Journal of Supercomputing, 2022, 78, 11657-11679.	2.4	2
268	<title>Double-pass system with unequal entrance and exit pupil sizes to measure the optical transfer function of the human eye</title>. , 1996, , .		1
269	Adaptive optics multiphoton microscopy. , 2010, , .		1
270	Surface geometry and optical aberrations of ex-vivo crystalline lenses. , 2010, , .		1

#	Article	IF	Citations
271	Small-aperture contact lenses are not surrogates for corneal inlays. Journal of Cataract and Refractive Surgery, 2012, 38, 2061-2062.	0.7	1
272	Performance of a 6-Pi liquid crystal on silicon (LCoS) spatial light modulator under white light illumination for visual applications. , 2013, , .		1
273	High speed visual stimuli generator to estimate the minimum presentation time required for an orientation discrimination task. Biomedical Optics Express, 2018, 9, 2640.	1.5	1
274	Novel Approach for Generating Ocular Wavefronts. , 2016, , .		1
275	Comparing the performance of a femto fiber-based laser and a Ti:sapphire used for multiphoton microscopy applications. Applied Optics, 2019, 58, 3830.	0.9	1
276	Comparative Analysis of Optical Compensation Methods for Deblurring of Retinal Image in Cataractous Type Media. , 2021, , .		1
277	Intraocular scatter compensation with spatial light amplitude modulation for improved vision in simulated cataractous eyes. Biomedical Optics Express, 2022, 13, 2174.	1.5	1
278	Improving Multiphoton Microscopy by Combining Spherical Aberration Patterns and Variable Axicons. Photonics, 2021, 8, 573.	0.9	1
279	A Hybrid Optical-Digital Method For The Determination Of The Optical Transfer Function Of The Human Eye.. Proceedings of SPIE, 1987, , .	0.8	0
280	Method to estimate the human pupil size from the bandwidth of coherent retinal images. Applied Optics, 1993, 32, 4212.	2.1	0
281	<title>Foveal cone mosaic imaged in vivo by an objective high-resolution technique</title>. , 1996, , .		0
282	Measurement and Correction of the Optical Aberrations of the Human Eye. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1998, 15, 2446.	0.8	0
283	Aging of the Human Visual System. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2002, 19, 134.	0.8	0
284	Adaptive optics with a liquid crystal programmable phase modulator. , 0, , .		0
285	Aberration Structure of the Human Eye. , 2005, , 31-61.		0
286	A white-light wave-front sensor for the human eye. , 0, , .		0
287	Adaptive optics for ophthalmic ultrahigh-resolution optical coherence tomography. , 0, , .		0
288	Adaptive optics using a liquid crystal spatial light modulator for ultrahigh-resolution optical coherence tomography. , 2006, , .		0

#	Article	IF	Citations
289	Binocular adaptive optics visual simulator: understanding the impact of aberrations on actual vision. Proceedings of SPIE, 2010, , .	0.8	0
290	Hybrid adaptive optics visual simulator combining a liquid crystal phase modulator and a deformable mirror. , 2010, , .		0
291	Comment on â€œMeasurement and correction of transverse chromatic offsets for multi-wavelength retinal microscopy in the living eyeâ€. Biomedical Optics Express, 2012, 3, 2772.	1.5	0
292	Using Adaptive Optics Technology for Visual Testing: a personal adventure. , 2013, , .		0
293	Fast optical measurement of intraocular straylight. Proceedings of SPIE, 2015, , .	0.8	0
294	Imaging through scattering media by microstructured illumination. , 2016, , .		0
295	A single pixel camera video ophthalmoscope. , 2017, , .		0
296	Imaging through scattering media with single-pixel detection. , 2017, , .		0
297	Multiphoton imaging of thick samples combining axicons and spherical aberration. , 2017, , .		0
298	Dual-mode multiphoton and linear confocal microscopy of the living human eye. , 2017, , .		0
299	Which Information Can Be Obtained from Collagen-Based Tissues Imaged with Polarization-Sensitive Second Harmonic Microscopy?. , 2018, , .		0
300	Adaptive-Optics Polarization-Sensitive Second Harmonic Generation Microscopy. , 2020, , .		0
301	33rd International Pupil Colloquium, Murcia, Universidad de Murcia (Spain); 2ndâ€“4th October 2019. Ophthalmic and Physiological Optics, 2020, 40, 376-376.	1.0	0
302	Optical Principles for Refractive Surgery. , 2021, , 1-10.		0
303	Disparity between central and peripheral refraction inheritance in twins. Scientific Reports, 2021, 11, 12196.	1.6	0
304	Double-pass measurements of retinal image quality: a review of the theory, limitations and results. , 2000, , .		0
305	The influence of the Stiles-Crawford effect on visual acuity. , 2001, , .		0
306	Adaptive Optics at the Frontiers of Vision Research. , 2004, , .		0

#	Article	IF	Citations
307	Introduction to the Special issue on â€œOptics in Visionâ€. Journal of Vision, 2004, 4, i.	0.1	0
308	A Polychromatic High Sensitivity Double-Pass System to Measure Intraocular Scattering.. , 2007, , .		0
309	Eye Models for the Design and Performance Assessment of New-Technology Intraocular Lenses. , 2008, , .		0
310	Wavefront Sensing for Measuring the Stability of High-Power Laser Beams. , 2008, , .		0
311	The eye as an aplanatic design. , 2008, , .		0
312	History and Future of Ophthalmic Adaptive Optics. , 2011, , .		0
313	Adaptive Optics for Visual Testing: from the Lab to the World. , 2012, , .		0
314	Adaptive Optics in Ocular Optical Coherence Tomography. Biological and Medical Physics Series, 2012, , 209-235.	0.3	0
315	Optical digital implementations of wavelet transform: application to image variant filtering. , 1993, , .		0
316	Image quality and retinal sampling in the human eye: new experimental and computational results. , 1993, , .		0
317	IMAGE QUALITY IN EYES WITH SPHERICAL ABERRATION INDUCED BY SOFT CONTACT LENSES. , 1999, , .		0
318	OPTICAL ABERRATIONS OF THE CORNEA IN A NORMAL POPULATION AS A FUNCTION OF AGE. , 1999, , .		0
319	CORRELATION OF OPTICAL IMAGE QUALITY, CONTRAST SENSITIVITY AND ACUITY AS A FUNCTION OF DEFOCUS. , 1999, , .		0
320	Peripheral sphere and astigmatism measured by infrared photoretinoscopy and by double pass point spread. , 1999, , .		0
321	Oscillations of the crystalline lens in the human eye. , 2017, , .		0
322	Optical correction of the effects of cataracts. , 2018, , .		0
323	The Impact of Scattering on Vision and the Importance of Measuring It.. , 2018, , .		0
324	Wavefront shaping to correct intraocular scattering. , 2018, , .		0

#	Article	IF	Citations
325	Optimization of a SS-OCT with a focus tunable lens for enhanced visualization of ocular opacities. , 2019, , .		0
326	Double-pass wavefront shaping for vision through cataracts. , 2020, , .		0
327	Wavefront shaping for intraocular scattering correction. , 2021, , .		0
328	Adaptive Optics Visual Simulators: New tools for a complete and customized vision evaluation. , 2020, , .		0
329	Handheld instrument for the measurement of Macular Pigment Optical Density using structured light. , 2021, , .		0
330	In vivo multiphoton imaging of the human ocular anterior segment. , 2021, , .		0
331	Phase-only modulation with economic and compact vertical aligned liquid crystal devices. , 2022, , .		0
332	Multiphoton image enhancement with variable squared cubic phase masks. , 2021, , .		0
333	Optical Principles for Refractive Surgery. , 2022, , 1099-1107.		0