

# Nicholas W Roberts

## List of Publications by Year in descending order

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Version: 2024-02-01

80  
papers

3,564  
citations

201385

27  
h-index

143772

57  
g-index

85  
all docs

85  
docs citations

85  
times ranked

4194  
citing authors

#	ARTICLE	IF	CITATIONS
1	Nanometric optical tweezers based on nanostructured substrates. <i>Nature Photonics</i> , 2008, 2, 365-370.	15.6	602
2	The biology of color. <i>Science</i> , 2017, 357, .	6.0	509
3	Photophysiology and albedo-changing potential of the ice algal community on the surface of the Greenland ice sheet. <i>ISME Journal</i> , 2012, 6, 2302-2313.	4.4	190
4	Non-polarizing broadband multilayer reflectors in fish. <i>Nature Photonics</i> , 2012, 6, 759-763.	15.6	137
5	Cyp27c1 Red-Shifts the Spectral Sensitivity of Photoreceptors by Converting Vitamin A1 into A2. <i>Current Biology</i> , 2015, 25, 3048-3057.	1.8	135
6	Unusual properties of a bent-core liquid-crystalline fluid. <i>Soft Matter</i> , 2009, 5, 463-471.	1.2	126
7	Circularly polarized colour reflection from helicoidal structures in the beetle <i>Plusiotis boucardi</i> . <i>New Journal of Physics</i> , 2007, 9, 99-99.	1.2	123
8	Bioinspired Polarization Imaging Sensors: From Circuits and Optics to Signal Processing Algorithms and Biomedical Applications. <i>Proceedings of the IEEE</i> , 2014, 102, 1450-1469.	16.4	94
9	A biological quarter-wave retarder with excellent achromaticity in the visible wavelength region. <i>Nature Photonics</i> , 2009, 3, 641-644.	15.6	90
10	Thermotropic biaxial nematic order parameters and phase transitions deduced by Raman scattering. <i>Europhysics Letters</i> , 2008, 82, 56001.	0.7	84
11	Dynamic polarization vision in mantis shrimps. <i>Nature Communications</i> , 2016, 7, 12140.	5.8	78
12	High-resolution polarisation vision in a cuttlefish. <i>Current Biology</i> , 2012, 22, R121-R122.	1.8	74
13	The molecular basis of mechanisms underlying polarization vision. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2011, 366, 627-637.	1.8	67
14	Behavioural relevance of polarization sensitivity as a target detection mechanism in cephalopods and fishes. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2011, 366, 734-741.	1.8	66
15	Polarisation vision: overcoming challenges of working with a property of light we barely see. <i>Die Naturwissenschaften</i> , 2018, 105, 27.	0.6	56
16	A Novel Vertebrate Eye Using Both Refractive and Reflective Optics. <i>Current Biology</i> , 2009, 19, 108-114.	1.8	55
17	Bumblebees Learn Polarization Patterns. <i>Current Biology</i> , 2014, 24, 1415-1420.	1.8	53
18	Continuously rotating chiral liquid crystal droplets in a linearly polarized laser trap. <i>Optics Express</i> , 2008, 16, 6877.	1.7	45

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19	Complementary shifts in photoreceptor spectral tuning unlock the full adaptive potential of ultraviolet vision in birds. <i>ELife</i> , 2016, 5, .	2.8	45
20	Target Detection Is Enhanced by Polarization Vision in a Fiddler Crab. <i>Current Biology</i> , 2015, 25, 3069-3073.	1.8	41
21	Perceiving polarization with the naked eye: characterization of human polarization sensitivity. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2015, 282, 20150338.	1.2	38
22	Optics of cone photoreceptors in the chicken ( <i>Gallus gallus domesticus</i> ). <i>Journal of the Royal Society Interface</i> , 2015, 12, 20150591.	1.5	37
23	Disordered animal multilayer reflectors and the localization of light. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20140948.	1.5	36
24	Biaxiality and temperature dependence of 3- and 4-layer intermediate smectic-phase structures as revealed by resonant X-ray scattering. <i>Europhysics Letters</i> , 2005, 72, 976-982.	0.7	33
25	Remarkably wide four-layer smectic phases in mixtures of liquid crystals and highly chiral dopants. <i>Journal of Materials Chemistry</i> , 2006, 16, 3753.	6.7	32
26	Magnetic Control of the Light Reflection Anisotropy in a Biogenic Guanine Microcrystal Platelet. <i>Langmuir</i> , 2016, 32, 180-187.	1.6	29
27	Polarisation signals: a new currency for communication. <i>Journal of Experimental Biology</i> , 2019, 222, .	0.8	29
28	An experimental investigation of discrete changes in pitch in a thin, planar chiral nematic device. <i>Liquid Crystals</i> , 2006, 33, 503-510.	0.9	28
29	A Mechanism of Polarized Light Sensitivity in Cone Photoreceptors of the Goldfish <i>Carassius auratus</i> . <i>Biophysical Journal</i> , 2007, 93, 3241-3248.	0.2	28
30	Effects of multiple stressors on fish shoal collective motion are independent and vary with shoaling metric. <i>Animal Behaviour</i> , 2020, 168, 7-17.	0.8	28
31	Landmarks and ant search strategies after interrupted tandem runs. <i>Journal of Experimental Biology</i> , 2014, 217, 944-54.	0.8	25
32	Molecular palaeontology illuminates the evolution of ecdysozoan vision. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2018, 285, .	1.2	25
33	Out of the blue: the evolution of horizontally polarized signals in <i>Haptosquilla</i> (Crustacea). <i>Trends in Ecology &amp; Evolution</i> , 2021, 36, 100-108.	0.8	24
34	Optical influence of oil droplets on cone photoreceptor sensitivity. <i>Journal of Experimental Biology</i> , 2017, 220, 1997-2004.	0.8	24
35	Null point of discrimination in crustacean polarisation vision. <i>Journal of Experimental Biology</i> , 2014, 217, 2462-7.	0.8	23
36	Animal Polarization Imaging and Implications for Optical Processing. <i>Proceedings of the IEEE</i> , 2014, 102, 1427-1434.	16.4	21

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37	An analytical model for the celestial distribution of polarized light, accounting for polarization singularities, wavelength and atmospheric turbidity. <i>Journal of Optics (United Kingdom)</i> , 2016, 18, 065601.	1.0	19
38	Parallel processing of polarization and intensity information in fiddler crab vision. <i>Science Advances</i> , 2019, 5, eaax3572.	4.7	19
39	Differences in the optical properties of vertebrate photoreceptor classes leading to axial polarization sensitivity. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2004, 21, 335.	0.8	18
40	Antisymmetric plasmon resonance in coupled gold nanoparticles as a sensitive tool for detection of local index of refraction. <i>Applied Physics Letters</i> , 2006, 88, 124103.	1.5	18
41	Selection of the intrinsic polarization properties of animal optical materials creates enhanced structural reflectivity and camouflage. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2017, 372, 20160336.	1.8	17
42	A Novel Approach to Investigate the Effect of Tree Reconstruction Artifacts in Single-Gene Analysis Clarifies Opsin Evolution in Nonbilaterian Metazoans. <i>Genome Biology and Evolution</i> , 2020, 12, 3906-3916.	1.1	17
43	Deduction of the temperature-dependent structure of the four-layer intermediate smectic phase using resonant X-ray scattering. <i>European Physical Journal E</i> , 2007, 23, 281-287.	0.7	16
44	Denosing imaging polarimetry by adapted BM3D method. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2018, 35, 690.	0.8	16
45	The optics of vertebrate photoreceptors: Anisotropy and form birefringence. <i>Vision Research</i> , 2006, 46, 3259-3266.	0.7	15
46	Behavioural evidence for polychromatic ultraviolet sensitivity in mantis shrimp. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2018, 285, 20181384.	1.2	15
47	Suppression of Brewster delocalization anomalies in an alternating isotropic-birefringent random layered medium. <i>Physical Review B</i> , 2013, 88, .	1.1	14
48	Polarization sensitivity as a visual contrast enhancer in the Emperor dragonfly larva, <i>Anax imperator</i> (Leach, 1815). <i>Journal of Experimental Biology</i> , 2015, 218, 3399-405.	0.8	14
49	Long-Wavelength Reflecting Filters Found in the Larval Retinas of One Mantis Shrimp Family (Nannosquillidae). <i>Current Biology</i> , 2019, 29, 3101-3108.e4.	1.8	14
50	Fundamental differences in patterns of retinal ageing between primates and mice. <i>Scientific Reports</i> , 2019, 9, 12574.	1.6	14
51	Haidinger's brushes elicited at varying degrees of polarization rapidly and easily assesses total macular pigmentation. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2019, 36, B123.	0.8	14
52	The Effects of Plant Virus Infection on Polarization Reflection from Leaves. <i>PLoS ONE</i> , 2016, 11, e0152836.	1.1	14
53	Evolution under pressure and the adaptation of visual pigment compressibility in deep-sea environments. <i>Molecular Phylogenetics and Evolution</i> , 2016, 105, 160-165.	1.2	13
54	A shape-anisotropic reflective polarizer in a stomatopod crustacean. <i>Scientific Reports</i> , 2016, 6, 21744.	1.6	13

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55	An experimental and theoretical investigation into the reflection spectra of SmC* and SmCA* phases. <i>Journal of Materials Chemistry</i> , 2003, 13, 353-359.	6.7	12
56	Hoverflies use a time-compensated sun compass to orientate during autumn migration. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2021, 288, 20211805.	1.2	12
57	Circularly polarized light detection in stomatopod crustaceans: a comparison of photoreceptors and possible function in six species. <i>Journal of Experimental Biology</i> , 2017, 220, 3222-3230.	0.8	11
58	Light adaptation mechanisms in the eye of the fiddler crab <i>Afruca tangeri</i> . <i>Journal of Comparative Neurology</i> , 2021, 529, 616-634.	0.9	11
59	Asymmetric switching in a ferroelectric liquid crystal device. <i>Applied Physics Letters</i> , 2008, 93, 153506.	1.5	10
60	The independence of eye movements in a stomatopod crustacean is task dependent. <i>Journal of Experimental Biology</i> , 2017, 220, 1360-1368.	0.8	10
61	Optical Properties of Cholesteric Materials used in Surface Stabilised Cholesteric Texture Devices. <i>Molecular Crystals and Liquid Crystals</i> , 2004, 411, 57-70.	0.4	9
62	High levels of reflectivity and pointillist structural color in fish, cephalopods, and beetles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, E3387; author reply E3388.	3.3	9
63	The absorption of polarized light by vertebrate photoreceptors. <i>Vision Research</i> , 2004, 44, 2643-2652.	0.7	8
64	Laser nanotrapping and manipulation of nanoscale objects using subwavelength apertured plasmonic media. <i>Journal of Applied Physics</i> , 2008, 103, 084316.	1.1	8
65	Complex gaze stabilization in mantis shrimp. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2018, 285, 20180594.	1.2	8
66	Thresholds of polarization vision in octopuses. <i>Journal of Experimental Biology</i> , 2021, 224, .	0.8	8
67	Corneal microprojections in coleoid cephalopods. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2012, 198, 849-856.	0.7	6
68	Mechanisms of switching in an antiferroelectric liquid crystal device revealed by time-resolved X-ray scattering. <i>Liquid Crystals</i> , 2006, 33, 451-457.	0.9	4
69	Colour preference in <i>Odontodactylus scyllarus</i> (Linnaeus, 1758) (Stomatopoda). <i>Journal of Crustacean Biology</i> , 2017, 37, 374-379.	0.3	4
70	The marine gastropod <i>Conomurex luhuanus</i> (Strombidae) has high-resolution spatial vision and eyes with complex retinas. <i>Journal of Experimental Biology</i> , 2022, 225, .	0.8	4
71	Comment on "Open-ocean fish reveal an omnidirectional solution to camouflage in polarized environments". <i>Science</i> , 2016, 353, 552-552.	6.0	3
72	Gaze stabilization in mantis shrimp in response to angled stimuli. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2019, 205, 515-527.	0.7	3

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73	Circularly Polarized Color Reflection in the Beetle <i>Plusiotis boucardi</i> . <i>Optics and Photonics News</i> , 2007, 18, 33.	0.4	2
74	Insect visual sensitivity to long wavelengths enhances colour contrast of insects against vegetation. <i>Scientific Reports</i> , 2022, 12, 982.	1.6	2
75	An eye for inspiration. <i>Nature Photonics</i> , 2009, 3, 668-668.	15.6	1
76	An omnidirectional broadband mirror design inspired by biological multilayer reflectors. , 2012, , .		1
77	The fish that beat physics. <i>Nature Photonics</i> , 2012, 6, 794-794.	15.6	1
78	Liquid Crystals, the Visual System and Polarization Sensitivity. <i>Liquid Crystals Today</i> , 2004, 13, 1-7.	2.3	0
79	Investigation into the Effects of Optical Tilt Angle Profile, Biaxiality and Dispersion of the Optic Axis on the Calculation of Reflection Spectra of SmC* Liquid Crystal Films. <i>Ferroelectrics</i> , 2005, 315, 205-211.	0.3	0
80	Inspiration from the reflective sides of silvery fish. <i>SPIE Newsroom</i> , 0, , .	0.1	0