

Marie-Claire Schanne-Klein

List of Publications by Year in descending order

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124
papers

5,582
citations

117625

34
h-index

82547

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134
all docs

134
docs citations

134
times ranked

5070
citing authors

#	ARTICLE	IF	CITATIONS
1	Absorption and intensity-dependent photoluminescence measurements on CdSe quantum dots: assignment of the first electronic transitions. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1993, 10, 100.	2.1	723
2	Size dependence of electron-phonon coupling in semiconductor nanospheres: The case of CdSe. <i>Physical Review B</i> , 1990, 42, 11123-11132.	3.2	526
3	Imaging lipid bodies in cells and tissues using third-harmonic generation microscopy. <i>Nature Methods</i> , 2006, 3, 47-53.	19.0	522
4	Second harmonic imaging and scoring of collagen in fibrotic tissues. <i>Optics Express</i> , 2007, 15, 4054.	3.4	268
5	Spectroscopic analysis of keratin endogenous signal for skin multiphoton microscopy. <i>Optics Express</i> , 2005, 13, 6268.	3.4	144
6	Multimodal Nonlinear Imaging of the Human Cornea. , 2010, 51, 2459.		143
7	V Nonlinear Optics in Composite Materials: 1. Semiconductor and Metal Crystallites in Dielectrics. <i>Progress in Optics</i> , 1991, 29, 321-411.	0.6	141
8	Polarization-Resolved Second-Harmonic Generation in Tendon upon Mechanical Stretching. <i>Biophysical Journal</i> , 2012, 102, 2220-2229.	0.5	130
9	Three-dimensional investigation and scoring of extracellular matrix remodeling during lung fibrosis using multiphoton microscopy. <i>Microscopy Research and Technique</i> , 2007, 70, 162-170.	2.2	126
10	In vivo structural imaging of the cornea by polarization-resolved second harmonic microscopy. <i>Biomedical Optics Express</i> , 2012, 3, 1.	2.9	123
11	Time-resolved measurements of carrier recombination in experimental semiconductor-doped glasses: Confirmation of the role of Auger recombination. <i>Applied Physics Letters</i> , 1993, 62, 78-80.	3.3	112
12	Polarization-resolved Second Harmonic microscopy in anisotropic thick tissues. <i>Optics Express</i> , 2010, 18, 19339.	3.4	108
13	Determination of collagen fibril size via absolute measurements of second-harmonic generation signals. <i>Nature Communications</i> , 2014, 5, 4920.	12.8	107
14	Measurement of the Second-Order Hyperpolarizability of the Collagen Triple Helix and Determination of Its Physical Origin. <i>Journal of Physical Chemistry B</i> , 2009, 113, 13437-13445.	2.6	106
15	Second-harmonic microscopy of unstained living cardiac myocytes: measurements of sarcomere length with 20-nm accuracy. <i>Optics Letters</i> , 2004, 29, 2031.	3.3	100
16	Chiroptical Effects in the Second Harmonic Signal of Collagens I and IV. <i>Journal of the American Chemical Society</i> , 2005, 127, 10314-10322.	13.7	91
17	Micrometer scale Ex Vivo multiphoton imaging of unstained arterial wall structure. <i>Cytometry Part A: the Journal of the International Society for Analytical Cytology</i> , 2006, 69A, 20-26.	1.5	83
18	Ex vivo multiscale quantitation of skin biomechanics in wild-type and genetically-modified mice using multiphoton microscopy. <i>Scientific Reports</i> , 2015, 5, 17635.	3.3	80

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19	Determination of collagen fiber orientation in histological slides using Mueller microscopy and validation by second harmonic generation imaging. <i>Optics Express</i> , 2014, 22, 22561.	3.4	77
20	Photoluminescence study of Schott commercial and experimental CdS ₂ -doped glasses: observation of surface states. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1991, 8, 1802.	2.1	73
21	Second harmonic microscopy to quantify renal interstitial fibrosis and arterial remodeling. <i>Journal of Biomedical Optics</i> , 2008, 13, 054041.	2.6	68
22	Dielectric confinement and the linear and nonlinear optical properties of semiconductor-doped glasses. <i>Optics Communications</i> , 1994, 108, 311-318.	2.1	64
23	Label-free imaging of bone multiscale porosity and interfaces using third-harmonic generation microscopy. <i>Scientific Reports</i> , 2017, 7, 3419.	3.3	62
24	Harmonic microscopy of isotropic and anisotropic microstructure of the human cornea. <i>Optics Express</i> , 2010, 18, 5028.	3.4	60
25	Monitoring micrometer-scale collagen organization in rat-tail tendon upon mechanical strain using second harmonic microscopy. <i>Journal of Biomechanics</i> , 2011, 44, 2047-2052.	2.1	60
26	Off resonance second order optical activity of isotropic layers of chiral molecules: Observation of electric and magnetic contributions. <i>Journal of Chemical Physics</i> , 1998, 108, 9436-9443.	3.0	59
27	Velocimetric third-harmonic generation microscopy: a micrometer-scale quantification of morphogenetic movements in unstained embryos. <i>Optics Letters</i> , 2004, 29, 2881.	3.3	52
28	Application of classical models of chirality to surface second harmonic generation. <i>Journal of Chemical Physics</i> , 2001, 115, 6707-6715.	3.0	50
29	In situ 3D characterization of historical coatings and wood using multimodal nonlinear optical microscopy. <i>Optics Express</i> , 2012, 20, 24623.	3.4	50
30	Correlative nonlinear optical microscopy and infrared nanoscopy reveals collagen degradation in altered parchments. <i>Scientific Reports</i> , 2016, 6, 26344.	3.3	49
31	A novel microstructural interpretation for the biomechanics of mouse skin derived from multiscale characterization. <i>Acta Biomaterialia</i> , 2017, 50, 302-311.	8.3	49
32	How aging impacts skin biomechanics: a multiscale study in mice. <i>Scientific Reports</i> , 2017, 7, 13750.	3.3	43
33	Simultaneous microstructural and mechanical characterization of human corneas at increasing pressure. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016, 60, 93-105.	3.1	40
34	Electric field measurements in plasmas: how focusing strongly distorts the E-FISH signal. <i>Plasma Sources Science and Technology</i> , 2020, 29, 125002.	3.1	39
35	3D resolved mapping of optical aberrations in thick tissues. <i>Biomedical Optics Express</i> , 2012, 3, 1898.	2.9	37
36	Circular dichroism second-harmonic generation microscopy probes the polarity distribution of collagen fibrils. <i>Optica</i> , 2020, 7, 1469.	9.3	36

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37	Stromal striae: a new insight into corneal physiology and mechanics. <i>Scientific Reports</i> , 2017, 7, 13584.	3.3	35
38	Imaging and 3D morphological analysis of collagen fibrils. <i>Journal of Microscopy</i> , 2012, 247, 161-175.	1.8	33
39	Multiphoton microscopy of engineered dermal substitutes: assessment of 3-D collagen matrix remodeling induced by fibroblast contraction. <i>Journal of Biomedical Optics</i> , 2010, 15, 1.	2.6	31
40	Monitoring dynamic collagen reorganization during skin stretching with fast polarization-resolved second harmonic generation imaging. <i>Journal of Biophotonics</i> , 2019, 12, e201800336.	2.3	31
41	The role of photodarkening and Auger recombination in the dynamics of the optical response for Cd(S,Se) nanoparticles. <i>Journal of Luminescence</i> , 1996, 70, 212-221.	3.1	27
42	Nonlinear circular dichroism in a liquid of chiral molecules: A theoretical investigation. <i>Physical Review B</i> , 1999, 60, 6405-6411.	3.2	27
43	Strong chiroptical effects in surface second harmonic generation obtained for molecules exhibiting excitonic coupling chirality. <i>Chemical Physics Letters</i> , 2002, 362, 103-108.	2.6	27
44	Experimental observation of nonlinear circular dichroism in a pump-probe experiment. <i>Chemical Physics Letters</i> , 2001, 338, 269-276.	2.6	26
45	Nonlinear optical imaging of lyotropic cholesteric liquid crystals. <i>Optics Express</i> , 2010, 18, 1113.	3.4	26
46	Quantitative assessment of collagen I liquid crystal organizations: role of ionic force and acidic solvent, and evidence of new phases. <i>Soft Matter</i> , 2011, 7, 11203.	2.7	26
47	Theoretical, numerical and experimental study of geometrical parameters that affect anisotropy measurements in polarization-resolved SHG microscopy. <i>Optics Express</i> , 2015, 23, 9313.	3.4	26
48	Magnetic chiroptical effects in surface second harmonic reflection. <i>Chemical Physics Letters</i> , 2001, 338, 159-166.	2.6	25
49	Achievement of cornea-like organizations in dense collagen I solutions: clues to the physico-chemistry of cornea morphogenesis. <i>Soft Matter</i> , 2013, 9, 11241.	2.7	25
50	Intracellular dynamics of archaeal FANCM homologue Hef in response to halted DNA replication. <i>Nucleic Acids Research</i> , 2013, 41, 10358-10370.	14.5	24
51	High-speed polarization-resolved third-harmonic microscopy. <i>Optica</i> , 2019, 6, 385.	9.3	24
52	In situ three-dimensional monitoring of collagen fibrillogenesis using SHG microscopy. <i>Biomedical Optics Express</i> , 2012, 3, 1446.	2.9	23
53	Numerical simulation of polarization-resolved second-harmonic microscopy in birefringent media. <i>Physical Review A</i> , 2013, 88, .	2.5	23
54	Probing the 3D structure of cornea-like collagen liquid crystals with polarization-resolved SHG microscopy. <i>Optics Express</i> , 2016, 24, 16084.	3.4	23

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55	Hyperglycemia-Induced Abnormalities in Rat and Human Corneas: The Potential of Second Harmonic Generation Microscopy. PLoS ONE, 2012, 7, e48388.	2.5	22
56	Efficient second-harmonic imaging of collagen in histological slides using Bessel beam excitation. Scientific Reports, 2016, 6, 29863.	3.3	22
57	A Bottom-Up Approach to Build the Hyperpolarizability of Peptides and Proteins from their Amino Acids. Journal of Physical Chemistry B, 2013, 117, 9877-9881.	2.6	21
58	Highly concentrated collagen solutions leading to transparent scaffolds of controlled three-dimensional organizations for corneal epithelial cell colonization. Biomaterials Science, 2018, 6, 1492-1502.	5.4	21
59	Native Collagen: Electrospinning of Pure, Cross-Linker-Free, Self-Supported Membrane. ACS Applied Bio Materials, 2020, 3, 2948-2957.	4.6	21
60	Wavelength dependence of nonlinear circular dichroism in a chiral ruthenium-tris(bipyridyl) solution. Physical Review A, 2002, 66, .	2.5	20
61	Probing Ordered Lipid Assemblies with Polarized Third-Harmonic-Generation Microscopy. Physical Review X, 2013, 3, .	8.9	20
62	Optical phase conjugation in Schott CdSSe-doped glasses: origin of the nonlinear response. Journal of the Optical Society of America B: Optical Physics, 1992, 9, 2234.	2.1	19
63	Affine kinematics in planar fibrous connective tissues: an experimental investigation. Biomechanics and Modeling in Mechanobiology, 2017, 16, 1459-1473.	2.8	18
64	Maturation of the Meniscal Collagen Structure Revealed by Polarization-Resolved and Directional Second Harmonic Generation Microscopy. Scientific Reports, 2019, 9, 18448.	3.3	17
65	Optimization of Picosirius red staining protocol to determine collagen fiber orientations in vaginal and uterine cervical tissues by Mueller polarized microscopy. Microscopy Research and Technique, 2015, 78, 723-730.	2.2	16
66	Development, structure, and bioengineering of the human corneal stroma: A review of collagen-based implants. Experimental Eye Research, 2020, 200, 108256.	2.6	16
67	Implementation of artifact-free circular dichroism SHG imaging of collagen. Optics Express, 2019, 27, 22685.	3.4	16
68	Polarization Rotation in a Second Harmonic Reflection Experiment from an Isotropic Surface of Chiral Tröger Base. Journal of Physical Chemistry B, 2003, 107, 5261-5266.	2.6	15
69	Quantitative structural imaging of keratoconic corneas using polarization-resolved SHG microscopy. Biomedical Optics Express, 2021, 12, 4163.	2.9	15
70	The size dependence of the resonant Kerr nonlinearity of Cd(S,Se)-doped glasses revisited. Applied Physics Letters, 1995, 67, 579-581.	3.3	14
71	Multimodal Highlighting of Structural Abnormalities in Diabetic Rat and Human Corneas. Translational Vision Science and Technology, 2013, 2, 3.	2.2	14
72	Fibrillogenesis from nanosurfaces: multiphoton imaging and stereological analysis of collagen 3D self-assembly dynamics. Soft Matter, 2014, 10, 6651-6657.	2.7	13

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73	Stabilization of Collagen Fibrils by Gelatin Addition: A Study of Collagen/Gelatin Dense Phases. <i>Langmuir</i> , 2017, 33, 12916-12925.	3.5	13
74	Easy xeno-free and feeder-free method for isolating and growing limbal stromal and epithelial stem cells of the human cornea. <i>PLoS ONE</i> , 2017, 12, e0188398.	2.5	13
75	Symmetry and phase determination of second-harmonic reflection from calcite surfaces. <i>Physical Review B</i> , 1999, 59, 3210-3217.	3.2	12
76	Spectroscopic analysis of keratin endogenous signal for skin multiphoton microscopy: erratum. <i>Optics Express</i> , 2005, 13, 6667.	3.4	12
77	Third-order nonlinear circular dichroism in a liquid of chiral molecules. <i>Synthetic Metals</i> , 2002, 127, 135-138.	3.9	9
78	Differentiation of neural-type cells on multi-scale ordered collagen-silica bionanocomposites. <i>Biomaterials Science</i> , 2020, 8, 569-576.	5.4	9
79	Origin of the resonant optical Kerr nonlinearity in Cd(S, Se)-doped glasses and related topics. <i>Applied Physics B: Lasers and Optics</i> , 1995, 61, 17-26.	2.2	8
80	Absorption and intensity-dependent photoluminescence measurements on CdSe quantum dots: assignment of the first electronic transitions: erratum. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1994, 11, 524.	2.1	7
81	Nonlinear optical activity in chiral molecules: surface second harmonic generation and nonlinear circular dichroism. <i>Comptes Rendus Physique</i> , 2002, 3, 429-437.	0.9	7
82	Noninvasive quantitative assessment of collagen degradation in parchments by polarization-resolved SHG microscopy. <i>Science Advances</i> , 2021, 7, .	10.3	7
83	Effects of a modulation of the pump-polarization in a degenerate pump/probe experiment. <i>European Physical Journal D</i> , 1999, 5, 447-452.	1.3	6
84	Elimination of imaging artifacts in second harmonic generation microscopy using interferometry. <i>Biomedical Optics Express</i> , 2019, 10, 3938.	2.9	6
85	Cell viability and shock wave amplitudes in the endothelium of porcine cornea exposed to ultrashort laser pulses. <i>Graefes' Archive for Clinical and Experimental Ophthalmology</i> , 2017, 255, 945-953.	1.9	5
86	High-throughput tuning of ovarian cancer spheroids for on-chip invasion assays. <i>Micro and Nano Engineering</i> , 2022, 15, 100138.	2.9	5
87	Investigation of the phase of the second-order susceptibility measured in off-resonant surface second-harmonic generation. <i>Applied Physics B: Lasers and Optics</i> , 1999, 68, 321-323.	2.2	4
88	Special Section Guest Editorial: Antonello De Martino (1954–2014): in memoriam. <i>Journal of Biomedical Optics</i> , 2016, 21, 071101.	2.6	4
89	Mueller polarimetric imaging for fast macroscopic mapping of microscopic collagen matrix remodeling by smooth muscle cells. <i>Scientific Reports</i> , 2021, 11, 5901.	3.3	4
90	Period-doubling and period-quadrupling for an actively mode-locked laser diode with extended cavity. <i>Journal of Applied Physics</i> , 1990, 67, 7615-7617.	2.5	3

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91	Some considerations of the size dependence of optical properties of solids and aggregates. Optics Communications, 1991, 86, 531-537.	2.1	3
92	Application of microscopic models of chirality to second harmonic reflection. Synthetic Metals, 2002, 127, 63-66.	3.9	3
93	Multiphoton microscopy of engineered dermal substitutes: assessment of 3D collagen matrix remodeling induced by fibroblasts contraction. Proceedings of SPIE, 2010, , .	0.8	3
94	Multiscale Characterisation of Skin Mechanics Through In Situ Imaging. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2019, , 235-263.	1.0	3
95	Simulating second harmonic generation from tendon Do we see fibrils ?. , 2010, , .		3
96	Combination of Traction Assays and Multiphoton Imaging to Quantify Skin Biomechanics. Methods in Molecular Biology, 2019, 1944, 145-155.	0.9	2
97	Rapid Evaluation of Novel Therapeutic Strategies Using a 3D Collagen-Based Tissue-Like Model. Frontiers in Bioengineering and Biotechnology, 2021, 9, 574035.	4.1	2
98	Correlative multiphoton microscopy and infrared nanospectroscopy of label-free collagen. , 2019, , .		2
99	Multiphoton microscopy using intrinsic signals for pharmacological studies in unstained cardiac and vascular tissue. , 2005, , .		1
100	Multiphoton microscopy: an efficient tool for in-situ study of cultural heritage artifacts. Proceedings of SPIE, 2013, , .	0.8	1
101	Forward versus backward polarization-resolved SHG imaging of collagen structure in tissues. Proceedings of SPIE, 2016, , .	0.8	1
102	Coreâ€“Shell Pure Collagen Threads Extruded from Highly Concentrated Solutions Promote Colonization and Differentiation of C3H10T1/2 Cells. ACS Biomaterials Science and Engineering, 2021, 7, 626-635.	5.2	1
103	Chiral chromophores for second harmonic microscopy. , 2003, 5139, 121.		0
104	In vivo analysis of Drosophila embryo developmental dynamics by femtosecond pulse-induced ablation and multimodal nonlinear microscopy. , 2005, 5700, 256.		0
105	Spectroscopic analysis of skin intrinsic signals for multiphoton microscopy. , 2006, , .		0
106	Nonlinear microscopy of collagen fibers. , 2007, , .		0
107	Nonlinear optical response of the collagen triple helix and second harmonic microscopy of collagen liquid crystals. , 2010, , .		0
108	Multiscale analysis of polarization-resolved third-harmonic generation microscopy from ordered lipid assemblies. , 2013, , .		0

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109	Polarization-resolved SHG microscopy of rat-tail tendon with controlled mechanical strain. , 2013, , .		0
110	Second Harmonic Generation quantitative measurements on collagen fibrils through correlation to electron microscopy. Proceedings of SPIE, 2015, , .	0.8	0
111	Cell viability in the endothelium of porcine cornea exposed to ultrashort laser pulses. , 2015, , .		0
112	Evolution of the Skin Microstructural Organization During a Mechanical Assay. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 45-52.	0.5	0
113	Differences between foetal and adult meniscus and cartilage revealed by Polarization Second Harmonic Generation Microscopy. , 2019, , .		0
114	Removing artifacts in Second Harmonic Generation imaging by interferometry. , 2019, , .		0
115	Structural imaging of keratoconic human corneas using polarization-resolved Second Harmonic Generation microscopy. , 2021, , .		0
116	Electric Field Measurements in Plasmas with E-FISH Using Focused Gaussian Beams. , 2021, , .		0
117	Effets chiroptiques magnÃ©tiques en rÃ©flexion de second harmonique par un film de molÃ©cules chirales. European Physical Journal Special Topics, 2000, 10, Pr8-111.	0.2	0
118	Theoretical investigation of the nonlinear circular dichroism in a liquid of chiral molecules. European Physical Journal Special Topics, 2000, 10, Pr8-241.	0.2	0
119	Optique non-linÃ©aire et chiralitÃ©. European Physical Journal Special Topics, 2002, 12, 77-83.	0.2	0
120	MÃ©canismes et dÃ©pendance en taille des non-linÃ©aritÃ©s optiques rÃ©sonances des verres dopÃ©s par nanocristaux de Cd(S,Se). Annales De Physique, 1995, 20, 591-592.	0.2	0
121	Label-free THG imaging of bone tissue microstructure: effect of low gravity on the lacuno-canalicular network. , 2019, , .		0
122	Fast P-THG microscopy for the characterization of biomaterials. , 2019, , .		0
123	Probing the sub-micrometer scale polarity distribution of out-of-plane collagen fibrils in biological tissues by circular-dichroism SHG microscopy. , 2021, , .		0
124	Polarization-resolved SHG imaging of lamellar organization in keratoconic human corneas. , 2021, , .		0