

Sylvain Gigan

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

125 papers	7,542 citations	40 h-index	86 g-index
164 ext. papers	9,797 ext. citations	8.9 avg, IF	6.29 L-index

#	Paper	IF	Citations
125	Measuring the transmission matrix in optics: an approach to the study and control of light propagation in disordered media. <i>Physical Review Letters</i> , 2010 , 104, 100601	7.4	825
124	Self-cooling of a micromirror by radiation pressure. <i>Nature</i> , 2006 , 444, 67-70	50.4	695
123	Optomechanical entanglement between a movable mirror and a cavity field. <i>Physical Review Letters</i> , 2007 , 98, 030405	7.4	666
122	Non-invasive single-shot imaging through scattering layers and around corners via speckle correlations. <i>Nature Photonics</i> , 2014 , 8, 784-790	33.9	494
121	Ground-state cooling of a micromechanical oscillator: Comparing cold damping and cavity-assisted cooling schemes. <i>Physical Review A</i> , 2008 , 77,	2.6	397
120	Image transmission through an opaque material. <i>Nature Communications</i> , 2010 , 1, 81	17.4	368
119	Demonstration of an ultracold micro-optomechanical oscillator in a cryogenic cavity. <i>Nature Physics</i> , 2009 , 5, 485-488	16.2	257
118	Light fields in complex media: Mesoscopic scattering meets wave control. <i>Reviews of Modern Physics</i> , 2017 , 89,	40.5	245
117	Creating and probing multipartite macroscopic entanglement with light. <i>Physical Review Letters</i> , 2007 , 99, 250401	7.4	228
116	Controlling light in scattering media non-invasively using the photoacoustic transmission matrix. <i>Nature Photonics</i> , 2014 , 8, 58-64	33.9	159
115	Controlling light through optical disordered media: transmission matrix approach. <i>New Journal of Physics</i> , 2011 , 13, 123021	2.9	140
114	Spatio-temporal focusing of an ultrafast pulse through a multiply scattering medium. <i>Nature Communications</i> , 2011 , 2, 447	17.4	135
113	Adaptive pumping for spectral control of random lasers. <i>Nature Physics</i> , 2014 , 10, 426-431	16.2	129
112	Brain refractive index measured in vivo with high-NA defocus-corrected full-field OCT and consequences for two-photon microscopy. <i>Optics Express</i> , 2011 , 19, 4833-47	3.3	120
111	Inference in artificial intelligence with deep optics and photonics. <i>Nature</i> , 2020 , 588, 39-47	50.4	114
110	Reference-less measurement of the transmission matrix of a highly scattering material using a DMD and phase retrieval techniques. <i>Optics Express</i> , 2015 , 23, 11898-911	3.3	109
109	Simulation of the active Brownian motion of a microswimmer. <i>American Journal of Physics</i> , 2014 , 82, 659-664	6.4	105

108	Imaging with nature: compressive imaging using a multiply scattering medium. <i>Scientific Reports</i> , 2014 , 4, 5552	4.9	100
107	Reconstructing the dynamics of a movable mirror in a detuned optical cavity. <i>New Journal of Physics</i> , 2006 , 8, 107-107	2.9	97
106	Taming random lasers through active spatial control of the pump. <i>Physical Review Letters</i> , 2012 , 109, 033903	7.4	90
105	Characterization of the angular memory effect of scattered light in biological tissues. <i>Optics Express</i> , 2015 , 23, 13505-16	3.3	82
104	Spatiotemporal Coherent Control of Light through a Multiple Scattering Medium with the Multispectral Transmission Matrix. <i>Physical Review Letters</i> , 2016 , 116, 253901	7.4	71
103	Two-photon quantum walk in a multimode fiber. <i>Science Advances</i> , 2016 , 2, e1501054	14.3	70
102	Widefield lensless imaging through a fiber bundle via speckle correlations. <i>Optics Express</i> , 2016 , 24, 16835-55	3.5	65
101	Brownian motion in a speckle light field: tunable anomalous diffusion and selective optical manipulation. <i>Scientific Reports</i> , 2014 , 4, 3936	4.9	62
100	Single myelin fiber imaging in living rodents without labeling by deep optical coherence microscopy. <i>Journal of Biomedical Optics</i> , 2011 , 16, 116012	3.5	60
99	Monocrystalline AlxGa1-xAs heterostructures for high-reflectivity high-Q micromechanical resonators in the megahertz regime. <i>Applied Physics Letters</i> , 2008 , 92, 261108	3.4	58
98	Exploiting the time-reversal operator for adaptive optics, selective focusing, and scattering pattern analysis. <i>Physical Review Letters</i> , 2011 , 107, 263901	7.4	57
97	Speckle optical tweezers: micromanipulation with random light fields. <i>Optics Express</i> , 2014 , 22, 18159-67	3.3	54
96	Deterministic control of broadband light through a multiply scattering medium via the multispectral transmission matrix. <i>Scientific Reports</i> , 2015 , 5, 10347	4.9	52
95	Focusing light through dynamical samples using fast continuous wavefront optimization. <i>Optics Letters</i> , 2017 , 42, 4994-4997	3	51
94	Improving visibility in photoacoustic imaging using dynamic speckle illumination. <i>Optics Letters</i> , 2013 , 38, 5188-91	3	51
93	Transmission-matrix-based point-spread-function engineering through a complex medium. <i>Optica</i> , 2017 , 4, 54	8.6	49
92	Optical microscopy aims deep. <i>Nature Photonics</i> , 2017 , 11, 14-16	33.9	48
91	Single-shot diffraction-limited imaging through scattering layers via bispectrum analysis. <i>Optics Letters</i> , 2016 , 41, 5003-5006	3	48

90	Step-by-step guide to the realization of advanced optical tweezers. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2015 , 32, B84	1.7	47
89	Defocus test and defocus correction in full-field optical coherence tomography. <i>Optics Letters</i> , 2009 , 34, 1576-8	3	47
88	Radiation-pressure self-cooling of a micromirror in a cryogenic environment. <i>Europhysics Letters</i> , 2008 , 81, 54003	1.6	45
87	Experimental study of the spatial distribution of quantum correlations in a confocal optical parametric oscillator. <i>Physical Review A</i> , 2003 , 67,	2.6	44
86	Disorder-mediated crowd control in an active matter system. <i>Nature Communications</i> , 2016 , 7, 10907	17.4	44
85	Super-resolution photoacoustic fluctuation imaging with multiple speckle illumination. <i>Optica</i> , 2016 , 3, 54	8.6	40
84	Observation of mean path length invariance in light-scattering media. <i>Science</i> , 2017 , 358, 765-768	33.3	40
83	Direct determination of diffusion properties of random media from speckle contrast. <i>Optics Letters</i> , 2011 , 36, 3332-4	3	39
82	Polarization recovery through scattering media. <i>Science Advances</i> , 2017 , 3, e1600743	14.3	35
81	Invariance property of wave scattering through disordered media. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, 17765-70	11.5	34
80	Light focusing and two-dimensional imaging through scattering media using the photoacoustic transmission matrix with an ultrasound array. <i>Optics Letters</i> , 2014 , 39, 2664-7	3	29
79	Photoacoustic imaging beyond the acoustic diffraction-limit with dynamic speckle illumination and sparse joint support recovery. <i>Optics Express</i> , 2017 , 25, 4875-4886	3.3	28
78	. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2020 , 26, 1-12	3.8	27
77	How to organize an online conference. <i>Nature Reviews Materials</i> , 2020 , 1-4	73.3	25
76	Enhanced nonlinear imaging through scattering media using transmission-matrix-based wave-front shaping. <i>Physical Review A</i> , 2016 , 94,	2.6	25
75	High reflectivity high-Q micromechanical Bragg mirror. <i>Applied Physics Letters</i> , 2006 , 89, 223101	3.4	25
74	Programmable linear quantum networks with a multimode fibre. <i>Nature Photonics</i> , 2020 , 14, 139-142	33.9	25
73	Image transmission through a stable paraxial cavity. <i>Physical Review A</i> , 2005 , 72,	2.6	24

72	Random projections through multiple optical scattering: Approximating Kernels at the speed of light 2016 ,		24
71	Imaging through a thin scattering layer and jointly retrieving the point-spread-function using phase-diversity. <i>Optics Express</i> , 2017 , 25, 27182-27194	3.3	23
70	Scanning-free imaging through a single fiber by random spatio-spectral encoding. <i>Optics Letters</i> , 2015 , 40, 534-7	3	23
69	Spatially entangled photon-pair generation using a partial spatially coherent pump beam. <i>Physical Review A</i> , 2019 , 99,	2.6	22
68	Noninvasive light focusing in scattering media using speckle variance optimization. <i>Optica</i> , 2019 , 6, 13818.6		22
67	Deterministic light focusing in space and time through multiple scattering media with a time-resolved transmission matrix approach. <i>Physical Review A</i> , 2016 , 94,	2.6	21
66	Measuring aberrations in the rat brain by coherence-gated wavefront sensing using a Linnik interferometer. <i>Biomedical Optics Express</i> , 2012 , 3, 2510-25	3.5	20
65	Speckle-based hyperspectral imaging combining multiple scattering and compressive sensing in nanowire mats. <i>Optics Letters</i> , 2017 , 42, 1820-1823	3	20
64	Deeply Subwavelength Localization with Reverberation-Coded Aperture. <i>Physical Review Letters</i> , 2021 , 127, 043903	7.4	18
63	Continuous-wave phase-sensitive parametric image amplification. <i>Journal of Modern Optics</i> , 2006 , 53, 809-820	1.1	17
62	Non-invasive focusing and imaging in scattering media with a fluorescence-based transmission matrix. <i>Nature Communications</i> , 2020 , 11, 6154	17.4	17
61	Controlling light in complex media beyond the acoustic diffraction-limit using the acousto-optic transmission matrix. <i>Nature Communications</i> , 2019 , 10, 717	17.4	17
60	Invariance properties of bacterial random walks in complex structures. <i>Nature Communications</i> , 2019 , 10, 2442	17.4	16
59	Temporal recompression through a scattering medium via a broadband transmission matrix. <i>Optica</i> , 2017 , 4, 1289	8.6	16
58	Improving photoacoustic-guided optical focusing in scattering media by spectrally filtered detection. <i>Optics Letters</i> , 2014 , 39, 6054-7	3	16
57	Fast compressive Raman bio-imaging via matrix completion. <i>Optica</i> , 2019 , 6, 341	8.6	16
56	Large-Scale Optical Reservoir Computing for Spatiotemporal Chaotic Systems Prediction. <i>Physical Review X</i> , 2020 , 10,	9.1	16
55	Nonclassical light manipulation in a multiple-scattering medium. <i>Optics Letters</i> , 2014 , 39, 6090-3	3	15

54	Photoacoustics with coherent light. <i>Photoacoustics</i> , 2016 , 4, 22-35	9	14
53	Rapid broadband characterization of scattering medium using hyperspectral imaging. <i>Optica</i> , 2019 , 6, 274	8.6	13
52	Scalable Spin-Glass Optical Simulator. <i>Physical Review Applied</i> , 2021 , 15,	4.3	13
51	Chromato-axial memory effect through a forward-scattering slab. <i>Optica</i> , 2020 , 7, 338	8.6	11
50	Transmission matrix approaches for nonlinear fluorescence excitation through multiple scattering media. <i>Optics Letters</i> , 2018 , 43, 2831-2834	3	11
49	Readout of fluorescence functional signals through highly scattering tissue. <i>Nature Photonics</i> , 2020 , 14, 361-364	33.9	9
48	Snapshot fiber spectral imaging using speckle correlations and compressive sensing. <i>Optics Express</i> , 2018 , 26, 32302-32316	3.3	9
47	Intensity-only optical compressive imaging using a multiply scattering material and a double phase retrieval approach 2016 ,		9
46	Multimode squeezing properties of a confocal optical parametric oscillator: Beyond the thin-crystal approximation. <i>Physical Review A</i> , 2005 , 72,	2.6	8
45	Roadmap on multimode light shaping. <i>Journal of Optics (United Kingdom)</i> ,	1.7	8
44	Scaling Up Echo-State Networks With Multiple Light Scattering 2018 ,		8
43	Probing Extended Modes on Disordered Plasmonic Networks by Wavefront Shaping. <i>ACS Photonics</i> , 2015 , 2, 1658-1662	6.3	7
42	Robust Phase Retrieval with the Swept Approximate Message Passing (prSAMP) Algorithm. <i>Image Processing on Line</i> , 7, 43-55		7
41	Local Optimization of Wave-fronts for optimal sensitivity PHase Imaging (LowPhi). <i>Optics Communications</i> , 2020 , 454, 124484	2	7
40	High-Sensitivity High-Speed Compressive Spectrometer for Raman Imaging. <i>ACS Photonics</i> , 2019 , 6, 14096-14115	6.3	5
39	Far-Field Wavefront Control of Nonlinear Luminescence in Disordered Gold Metasurfaces. <i>Nano Letters</i> , 2020 , 20, 3291-3298	11.5	5
38	Fast Phase Retrieval for High Dimensions: A Block-Based Approach. <i>IEEE Signal Processing Letters</i> , 2016 , 23, 1179-1182	3.2	4
37	A 4000 Hz CMOS image sensor with in-pixel processing for light measurement and modulation 2013 ,		4

36	A Less Invasive Approach to Rheology Measurements. <i>Physics Magazine</i> , 2012 , 5,	1.1	4
35	Non-invasive single-shot recovery of a point-spread function of a memory effect based scattering imaging system. <i>Optics Letters</i> , 2020 , 45, 5397-5400	3	4
34	Enhanced stability of the focus obtained by wavefront optimization in dynamical scattering media. <i>Optica</i> , 2019 , 6, 1554	8.6	4
33	Accelerating ptychographic reconstructions using spectral initializations. <i>Optics Letters</i> , 2021 , 46, 1357-1360	3.60	4
32	Three-dimensional broadband light beam manipulation in forward scattering samples. <i>Optics Express</i> , 2021 , 29, 6563-6581	3.3	4
31	A photoacoustic transmission matrix for deep optical imaging. <i>SPIE Newsroom</i> ,		3
30	Mean path length invariance in wave-scattering beyond the diffusive regime. <i>Communications Physics</i> , 2021 , 4,	5.4	3
29	Roadmap on chaos-inspired imaging technologies (CI2-Tech). <i>Applied Physics B: Lasers and Optics</i> , 2022 , 128, 1	1.9	3
28	Large field-of-view non-invasive imaging through scattering layers using fluctuating random illumination.. <i>Nature Communications</i> , 2022 , 13, 1447	17.4	3
27	Publisher's Note: Enhanced nonlinear imaging through scattering media using transmission-matrix-based wave-front shaping [Phys. Rev. A 94, 043830 (2016)]. <i>Physical Review A</i> , 2016 , 94,	2.6	2
26	Measuring aberrations in the rat brain by a new coherence-gated wavefront sensor using a Linnik interferometer 2012 ,		2
25	Label-free super-resolution chemical imaging of biomedical specimens		2
24	Visualization of Directional Beaming of Weakly Localized Raman from a Random Network of Silicon Nanowires. <i>Advanced Science</i> , 2021 , 8, 2100139	13.6	2
23	Ultra-fast 3D scanning and holographic illumination in non-linear microscopy using acousto-optic deflectors 2017 ,		1
22	Spectral Method for Multiplexed Phase Retrieval and Application in Optical Imaging in Complex Media 2019 ,		1
21	Phase-space behavior and conditional dynamics of an optomechanical system. <i>Physical Review A</i> , 2013 , 88,	2.6	1
20	Point-spread-function engineering through a complex medium 2017 ,		1
19	Co-integration of a smart CMOS image sensor and a spatial light modulator for real-time optical phase modulation 2014 ,		1

18	Engineering particle trajectories in microfluidic flows using speckle light fields 2014 ,		1
17	Towards a real time sensor for focusing through scattering media 2012 ,		1
16	Spatial quantum optical properties of c.w. Optical Parametric Amplification. <i>Comptes Rendus Physique</i> , 2007 , 8, 199-205	1.4	1
15	Quantum information processing in optical images. <i>Superlattices and Microstructures</i> , 2002 , 32, 323-329	2.8	1
14	Controlling spatial coherence with an optical complex medium. <i>Optics Express</i> , 2021 , 29, 40831	3.3	1
13	Spectrally resolved point-spread-function engineering using a complex medium. <i>Optics Express</i> , 2021 , 29, 8985-8996	3.3	1
12	Statistical Nonlinear Optical Mapping of Localized and Delocalized Plasmonic Modes in Disordered Gold Metasurfaces. <i>ACS Photonics</i> , 2021 , 8, 1937-1943	6.3	1
11	Engineering spatial correlations of entangled photon pairs by pump beam shaping. <i>Optics Letters</i> , 2021 , 46, 4200-4203	3	0
10	Speckle Engineering through Singular Value Decomposition of the Transmission Matrix. <i>Physical Review Letters</i> , 2021 , 127, 093903	7.4	0
9	Transmission Matrix Approach to Light Control in Complex Media 2019 , 121-137		
8	Coupling Optical Wavefront Shaping and Photoacoustics 2019 , 138-160		
7	Feedback-Based Wavefront Shaping 2019 , 189-216		
6	Wavefront-Engineered Optical Focusing into Scattering Media Using Ultrasound- or Perturbation-Based Guide Stars: TRUE, TRAP, SEWS, and PAWS 2019 , 283-314		
5	Transmission Matrix Correlations 2019 , 315-328		
4	Controlled light propagation through complex media introduction. <i>Optics Express</i> , 2015 , 23, 13587-8	3.3	
3	Optical imaging in biological tissue: taking advantage of the light coherence properties. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society</i> , 2007 , 2007, 520		
2	Chapter 16 Using the Transmission Matrix to Image Disordered Media 2017 , 489-516		
1	Intra-Operative Ex-Situ and In-Situ Optical Biopsy Using Light-CT. <i>Advances in Intelligent and Soft Computing</i> , 2012 , 77-84		

