Sylvain Gigan

List of Publications by Year in Descending Order

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	Roadmap on chaos-inspired imaging technologies (CI2-Tech). *Applied Physics B: Lasers and Optics*, **2022**, 128, 1	1.9	3
124	Large field-of-view non-invasive imaging through scattering layers using fluctuating random illumination.. *Nature Communications*, **2022**, 13, 1447	17.4	3
123	Controlling spatial coherence with an optical complex medium. *Optics Express*, **2021**, 29, 40831	3.3	1
122	Scalable Spin-Glass Optical Simulator. *Physical Review Applied*, **2021**, 15,	4.3	13
121	Spectrally resolved point-spread-function engineering using a complex medium. *Optics Express*, **2021**, 29, 8985-8996	3.3	1
120	Accelerating ptychographic reconstructions using spectral initializations. *Optics Letters*, **2021**, 46, 1357-1360	3	4
119	Mean path length invariance in wave-scattering beyond the diffusive regime. *Communications Physics*, **2021**, 4,	5.4	3
118	Visualization of Directional Beaming of Weakly Localized Raman from a Random Network of Silicon Nanowires. *Advanced Science*, **2021**, 8, 2100139	13.6	2
117	Statistical Nonlinear Optical Mapping of Localized and Delocalized Plasmonic Modes in Disordered Gold Metasurfaces. *ACS Photonics*, **2021**, 8, 1937-1943	6.3	1
116	Three-dimensional broadband light beam manipulation in forward scattering samples. *Optics Express*, **2021**, 29, 6563-6581	3.3	4
115	Deeply Subwavelength Localization with Reverberation-Coded Aperture. *Physical Review Letters*, **2021**, 127, 043903	7.4	18
114	Engineering spatial correlations of entangled photon pairs by pump beam shaping. *Optics Letters*, **2021**, 46, 4200-4203	3	0
113	Speckle Engineering through Singular Value Decomposition of the Transmission Matrix. *Physical Review Letters*, **2021**, 127, 093903	7.4	0
112	How to organize an online conference. *Nature Reviews Materials*, **2020**, 1-4	73.3	25
111	Readout of fluorescence functional signals through highly scattering tissue. *Nature Photonics*, **2020**, 14, 361-364	33.9	9
110	Far-Field Wavefront Control of Nonlinear Luminescence in Disordered Gold Metasurfaces. *Nano Letters*, **2020**, 20, 3291-3298	11.5	5
109	Non-invasive single-shot recovery of a point-spread function of a memory effect based scattering imaging system. *Optics Letters*, **2020**, 45, 5397-5400	3	4

108	Chromato-axial memory effect through a forward-scattering slab. *Optica*, **2020**, 7, 338	8.6	11
107	Programmable linear quantum networks with a multimode fibre. *Nature Photonics*, **2020**, 14, 139-142	33.9	25
106	Large-Scale Optical Reservoir Computing for Spatiotemporal Chaotic Systems Prediction. *Physical Review X*, **2020**, 10,	9.1	16
105	Non-invasive focusing and imaging in scattering media with a fluorescence-based transmission matrix. *Nature Communications*, **2020**, 11, 6154	17.4	17
104	Inference in artificial intelligence with deep optics and photonics. *Nature*, **2020**, 588, 39-47	50.4	114
103	Local Optimization of Wave-fronts for optimal sensitivity PHase Imaging (LowPhi). *Optics Communications*, **2020**, 454, 124484	2	7
102	. *IEEE Journal of Selected Topics in Quantum Electronics*, **2020**, 26, 1-12	3.8	27
101	Invariance properties of bacterial random walks in complex structures. *Nature Communications*, **2019**, 10, 2442	17.4	16
100	Transmission Matrix Approach to Light Control in Complex Media **2019**, 121-137		
99	Coupling Optical Wavefront Shaping and Photoacoustics **2019**, 138-160		
98	Feedback-Based Wavefront Shaping **2019**, 189-216		
97	Wavefront-Engineered Optical Focusing into Scattering Media Using Ultrasound- or Perturbation-Based Guide Stars: TRUE, TRAP, SEWS, and PAWS **2019**, 283-314		
96	Transmission Matrix Correlations **2019**, 315-328		
95	Spatially entangled photon-pair generation using a partial spatially coherent pump beam. *Physical Review A*, **2019**, 99,	2.6	22
94	High-Sensitivity High-Speed Compressive Spectrometer for Raman Imaging. *ACS Photonics*, **2019**, 6, 1409-1415	6.3	5
93	Spectral Method for Multiplexed Phase Retrieval and Application in Optical Imaging in Complex Media **2019**,		1
92	Rapid broadband characterization of scattering medium using hyperspectral imaging. *Optica*, **2019**, 6, 274	8.6	13
91	Fast compressive Raman bio-imaging via matrix completion. *Optica*, **2019**, 6, 341	8.6	16

90	Noninvasive light focusing in scattering media using speckle variance optimization. *Optica*, **2019**, 6, 13818.6		22
89	Enhanced stability of the focus obtained by wavefront optimization in dynamical scattering media. *Optica*, **2019**, 6, 1554	8.6	4
88	Controlling light in complex media beyond the acoustic diffraction-limit using the acousto-optic transmission matrix. *Nature Communications*, **2019**, 10, 717	17.4	17
87	Snapshot fiber spectral imaging using speckle correlations and compressive sensing. *Optics Express*, **2018**, 26, 32302-32316	3.3	9
86	Transmission matrix approaches for nonlinear fluorescence excitation through multiple scattering media. *Optics Letters*, **2018**, 43, 2831-2834	3	11
85	Scaling Up Echo-State Networks With Multiple Light Scattering **2018**,		8
84	Light fields in complex media: Mesoscopic scattering meets wave control. *Reviews of Modern Physics*, **2017**, 89,	40.5	245
83	Ultra-fast 3D scanning and holographic illumination in non-linear microscopy using acousto-optic deflectors **2017**,		1
82	Optical microscopy aims deep. *Nature Photonics*, **2017**, 11, 14-16	33.9	48
81	Focusing light through dynamical samples using fast continuous wavefront optimization. *Optics Letters*, **2017**, 42, 4994-4997	3	51
80	Polarization recovery through scattering media. *Science Advances*, **2017**, 3, e1600743	14.3	35
79	Observation of mean path length invariance in light-scattering media. *Science*, **2017**, 358, 765-768	33.3	40
78	Point-spread-function engineering through a complex medium **2017**,		1
77	Photoacoustic imaging beyond the acoustic diffraction-limit with dynamic speckle illumination and sparse joint support recovery. *Optics Express*, **2017**, 25, 4875-4886	3.3	28
76	Imaging through a thin scattering layer and jointly retrieving the point-spread-function using phase-diversity. *Optics Express*, **2017**, 25, 27182-27194	3.3	23
75	Transmission-matrix-based point-spread-function engineering through a complex medium. *Optica*, **2017**, 4, 54	8.6	49
74	Temporal recompression through a scattering medium via a broadband transmission matrix. *Optica*, **2017**, 4, 1289	8.6	16
73	Speckle-based hyperspectral imaging combining multiple scattering and compressive sensing in nanowire mats. *Optics Letters*, **2017**, 42, 1820-1823	3	20

72	Chapter 16 Using the Transmission Matrix to Image Disordered Media **2017**, 489-516		
71	Fast Phase Retrieval for High Dimensions: A Block-Based Approach. *IEEE Signal Processing Letters*, **2016**, 23, 1179-1182	3.2	4
70	Spatiotemporal Coherent Control of Light through a Multiple Scattering Medium with the Multispectral Transmission Matrix. *Physical Review Letters*, **2016**, 116, 253901	7.4	71
69	Deterministic light focusing in space and time through multiple scattering media with a time-resolved transmission matrix approach. *Physical Review A*, **2016**, 94,	2.6	21
68	Enhanced nonlinear imaging through scattering media using transmission-matrix-based wave-front shaping. *Physical Review A*, **2016**, 94,	2.6	25
67	Publisher\'s Note: Enhanced nonlinear imaging through scattering media using transmission-matrix-based wave-front shaping [Phys. Rev. A 94, 043830 (2016)]. *Physical Review A*, **2016**, 94,	2.6	2
66	Super-resolution photoacoustic fluctuation imaging with multiple speckle illumination. *Optica*, **2016**, 3, 54	8.6	40
65	Two-photon quantum walk in a multimode fiber. *Science Advances*, **2016**, 2, e1501054	14.3	70
64	Single-shot diffraction-limited imaging through scattering layers via bispectrum analysis. *Optics Letters*, **2016**, 41, 5003-5006	3	48
63	Disorder-mediated crowd control in an active matter system. *Nature Communications*, **2016**, 7, 10907	17.4	44
62	Intensity-only optical compressive imaging using a multiply scattering material and a double phase retrieval approach **2016**,		9
61	Random projections through multiple optical scattering: Approximating Kernels at the speed of light **2016**,		24
60	Photoacoustics with coherent light. *Photoacoustics*, **2016**, 4, 22-35	9	14
59	Widefield lensless imaging through a fiber bundle via speckle correlations. *Optics Express*, **2016**, 24, 16835-55	3.3	65
58	Controlled light propagation through complex media introduction. *Optics Express*, **2015**, 23, 13587-8	3.3	
57	Characterization of the angular memory effect of scattered light in biological tissues. *Optics Express* , **2015**, 23, 13505-16	3.3	82
56	Reference-less measurement of the transmission matrix of a highly scattering material using a DMD and phase retrieval techniques. *Optics Express*, **2015**, 23, 11898-911	3.3	109
55	Step-by-step guide to the realization of advanced optical tweezers. *Journal of the Optical Society of America B: Optical Physics*, **2015**, 32, B84	1.7	47

54	Probing Extended Modes on Disordered Plasmonic Networks by Wavefront Shaping. *ACS Photonics*, **2015**, 2, 1658-1662	6.3	7
53	Deterministic control of broadband light through a multiply scattering medium via the multispectral transmission matrix. *Scientific Reports*, **2015**, 5, 10347	4.9	52
52	Scanning-free imaging through a single fiber by random spatio-spectral encoding. *Optics Letters*, **2015**, 40, 534-7	3	23
51	Brownian motion in a speckle light field: tunable anomalous diffusion and selective optical manipulation. *Scientific Reports*, **2014**, 4, 3936	4.9	62
50	Adaptive pumping for spectral control of random lasers. *Nature Physics*, **2014**, 10, 426-431	16.2	129
49	Controlling light in scattering media non-invasively using the photoacoustic transmission matrix. *Nature Photonics*, **2014**, 8, 58-64	33.9	159
48	Non-invasive single-shot imaging through scattering layers and around corners via speckle correlations. *Nature Photonics*, **2014**, 8, 784-790	33.9	494
47	Simulation of the active Brownian motion of a microswimmer. *American Journal of Physics*, **2014**, 82, 659-664	0.6	105
46	Imaging with nature: compressive imaging using a multiply scattering medium. *Scientific Reports*, **2014**, 4, 5552	4.9	100
45	Co-integration of a smart CMOS image sensor and a spatial light modulator for real-time optical phase modulation **2014**,		1
44	Improving photoacoustic-guided optical focusing in scattering media by spectrally filtered detection. *Optics Letters*, **2014**, 39, 6054-7	3	16
43	Nonclassical light manipulation in a multiple-scattering medium. *Optics Letters*, **2014**, 39, 6090-3	3	15
42	Light focusing and two-dimensional imaging through scattering media using the photoacoustic transmission matrix with an ultrasound array. *Optics Letters*, **2014**, 39, 2664-7	3	29
41	Speckle optical tweezers: micromanipulation with random light fields. *Optics Express*, **2014**, 22, 18159-67	3.3	54
40	Invariance property of wave scattering through disordered media. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 17765-70	11.5	34
39	Engineering particle trajectories in microfluidic flows using speckle light fields **2014**,		1
38	Phase-space behavior and conditional dynamics of an optomechanical system. *Physical Review A*, **2013**, 88,	2.6	1
37	A 4000 Hz CMOS image sensor with in-pixel processing for light measurement and modulation **2013**,		4

36	Improving visibility in photoacoustic imaging using dynamic speckle illumination. *Optics Letters*, **2013**, 38, 5188-91	3	51
35	A Less Invasive Approach to Rheology Measurements. *Physics Magazine*, **2012**, 5,	1.1	4
34	Taming random lasers through active spatial control of the pump. *Physical Review Letters*, **2012**, 109, 033903	7.4	90
33	Towards a real time sensor for focusing through scattering media **2012**,		1
32	Measuring aberrations in the rat brain by a new coherence-gated wavefront sensor using a Linnik interferometer **2012**,		2
31	Measuring aberrations in the rat brain by coherence-gated wavefront sensing using a Linnik interferometer. *Biomedical Optics Express*, **2012**, 3, 2510-25	3.5	20
30	Intra-Operative Ex-Situ and In-Situ Optical Biopsy Using Light-CT. *Advances in Intelligent and Soft Computing*, **2012**, 77-84		
29	Brain refractive index measured in vivo with high-NA defocus-corrected full-field OCT and consequences for two-photon microscopy. *Optics Express*, **2011**, 19, 4833-47	3.3	120
28	Direct determination of diffusion properties of random media from speckle contrast. *Optics Letters*, **2011**, 36, 3332-4	3	39
27	Spatio-temporal focusing of an ultrafast pulse through a multiply scattering medium. *Nature Communications*, **2011**, 2, 447	17.4	135
26	Exploiting the time-reversal operator for adaptive optics, selective focusing, and scattering pattern analysis. *Physical Review Letters*, **2011**, 107, 263901	7.4	57
25	Controlling light through optical disordered media: transmission matrix approach. *New Journal of Physics*, **2011**, 13, 123021	2.9	140
24	Single myelin fiber imaging in living rodents without labeling by deep optical coherence microscopy. *Journal of Biomedical Optics*, **2011**, 16, 116012	3.5	60
23	Measuring the transmission matrix in optics: an approach to the study and control of light propagation in disordered media. *Physical Review Letters*, **2010**, 104, 100601	7.4	825
22	Image transmission through an opaque material. *Nature Communications*, **2010**, 1, 81	17.4	368
21	Demonstration of an ultracold micro-optomechanical oscillator in a cryogenic cavity. *Nature Physics*, **2009**, 5, 485-488	16.2	257
20	Defocus test and defocus correction in full-field optical coherence tomography. *Optics Letters*, **2009**, 34, 1576-8	3	47
19	Ground-state cooling of a micromechanical oscillator: Comparing cold damping and cavity-assisted cooling schemes. *Physical Review A*, **2008**, 77,	2.6	397

18	Monocrystalline AlxGa1−xAs heterostructures for high-reflectivity high-Q micromechanical resonators in the megahertz regime. *Applied Physics Letters*, **2008**, 92, 261108	3.4	58
17	Radiation-pressure self-cooling of a micromirror in a cryogenic environment. *Europhysics Letters*, **2008**, 81, 54003	1.6	45
16	Creating and probing multipartite macroscopic entanglement with light. *Physical Review Letters*, **2007**, 99, 250401	7.4	228
15	Spatial quantum optical properties of c.w. Optical Parametric Amplification. *Comptes Rendus Physique*, **2007**, 8, 199-205	1.4	1
14	Optical imaging in biological tissue: taking advantage of the light coherence properties. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2007**, 2007, 520		
13	Optomechanical entanglement between a movable mirror and a cavity field. *Physical Review Letters* , **2007**, 98, 030405	7.4	666
12	Reconstructing the dynamics of a movable mirror in a detuned optical cavity. *New Journal of Physics* , **2006**, 8, 107-107	2.9	97
11	Continuous-wave phase-sensitive parametric image amplification. *Journal of Modern Optics*, **2006**, 53, 809-820	1.1	17
10	High reflectivity high-Q micromechanical Bragg mirror. *Applied Physics Letters*, **2006**, 89, 223101	3.4	25
9	Self-cooling of a micromirror by radiation pressure. *Nature*, **2006**, 444, 67-70	50.4	695
8	Image transmission through a stable paraxial cavity. *Physical Review A*, **2005**, 72,	2.6	24
7	Multimode squeezing properties of a confocal optical parametric oscillator: Beyond the thin-crystal approximation. *Physical Review A*, **2005**, 72,	2.6	8
6	Experimental study of the spatial distribution of quantum correlations in a confocal optical parametric oscillator. *Physical Review A*, **2003**, 67,	2.6	44
5	Quantum information processing in optical images. *Superlattices and Microstructures*, **2002**, 32, 323-329	2.8	1
4	A photoacoustic transmission matrix for deep optical imaging. *SPIE Newsroom*,		3
3	Roadmap on multimode light shaping. *Journal of Optics (United Kingdom)*,	1.7	8
2	Robust Phase Retrieval with the Swept Approximate Message Passing (prSAMP) Algorithm. *Image Processing on Line*,7, 43-55		7
1	Label-free super-resolution chemical imaging of biomedical specimens		2