

Vasan Venugopalan

List of Publications by Year in descending order

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89
papers

4,997
citations

136740

32
h-index

102304

66
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89
all docs

89
docs citations

89
times ranked

4514
citing authors

#	ARTICLE	IF	CITATIONS
1	Corneal transparency and scleral opacity arises from the nanoarchitecture of the constituent collagen fibrils. <i>Biomedical Optics Express</i> , 2022, 13, 1485.	1.5	3
2	MCCL: an open-source software application for Monte Carlo simulations of radiative transport. <i>Journal of Biomedical Optics</i> , 2022, 27, .	1.4	8
3	Single-shot interferometric measurement of cavitation bubble dynamics. <i>Optics Letters</i> , 2021, 46, 1409.	1.7	5
4	Comparative analysis of discrete and continuous absorption weighting estimators used in Monte Carlo simulations of radiative transport in turbid media: erratum. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2021, 38, 749.	0.8	0
5	Laser cavitation rheology for measurement of elastic moduli and failure strain within hydrogels. <i>Scientific Reports</i> , 2020, 10, 13144.	1.6	12
6	Optical sampling depth in the spatial frequency domain. <i>Journal of Biomedical Optics</i> , 2018, 24, 1.	1.4	35
7	Recovery of layered tissue optical properties from spatial frequency-domain spectroscopy and a deterministic radiative transport solver. <i>Journal of Biomedical Optics</i> , 2018, 24, 1.	1.4	6
8	Effect of scattering on coherent anti-Stokes Raman scattering (CARS) signals. <i>Optics Express</i> , 2017, 25, 8638.	1.7	5
9	Development of perturbation Monte Carlo methods for polarized light transport in a discrete particle scattering model. <i>Biomedical Optics Express</i> , 2016, 7, 2051.	1.5	1
10	Multi-scale silica structures for improved HIV-1 Capsid (p24) antigen detection. <i>Analyst, The</i> , 2016, 141, 4181-4188.	1.7	3
11	Differential pathlength factor informs evoked stimulus response in a mouse model of Alzheimer's disease. <i>Neurophotonics</i> , 2015, 2, 045001.	1.7	5
12	Reply to 'Mechanism for microtsunami-induced intercellular mechanosignalling'. <i>Nature Photonics</i> , 2015, 9, 624-625.	15.6	2
13	Rapid computation of the amplitude and phase of tightly focused optical fields distorted by scattering particles. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2014, 31, 1520.	0.8	5
14	Comparative analysis of discrete and continuous absorption weighting estimators used in Monte Carlo simulations of radiative transport in turbid media. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2014, 31, 301.	0.8	23
15	Low-density plasma formation in aqueous biological media using sub-nanosecond laser pulses. <i>Applied Physics Letters</i> , 2014, 105, 063701.	1.5	13
16	High-throughput optical screening of cellular mechanotransduction. <i>Nature Photonics</i> , 2014, 8, 710-715.	15.6	36
17	Coupled forward-adjoint Monte Carlo simulation of spatial-angular light fields to determine optical sensitivity in turbid media. <i>Journal of Biomedical Optics</i> , 2014, 19, 065003.	1.4	11
18	Time-resolved digital holographic microscopy of laser-induced forward transfer. <i>Applied Physics B: Lasers and Optics</i> , 2014, 114, 361-366.	1.1	0

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19	InÂVivo Multiphoton NADH Fluorescence Reveals Depth-Dependent Keratinocyte Metabolism in Human Skin. Biophysical Journal, 2013, 104, 258-267.	0.2	107
20	Radiative transport produced by oblique illumination of turbid media with collimated beams. Physical Review E, 2013, 87, 063308.	0.8	9
21	Hydrodynamic Determinants of Cell Necrosis and Molecular Delivery Produced by Pulsed Laser Microbeam Irradiation of Adherent Cells. Biophysical Journal, 2013, 105, 2221-2231.	0.2	22
22	Impact of release dynamics of laser-irradiated polymer micropallets on the viability of selected adherent cells. Journal of the Royal Society Interface, 2012, 9, 1156-1167.	1.5	7
23	Electric field Monte Carlo simulations of focal field distributions produced by tightly focused laser beams in tissues. Biomedical Optics Express, 2011, 2, 278.	1.5	24
24	Analysis of single Monte Carlo methods for prediction of reflectance from turbid media. Optics Express, 2011, 19, 19627.	1.7	41
25	Accurate and efficient Monte Carlo solutions to the radiative transport equation in the spatial frequency domain. Optics Letters, 2011, 36, 2269.	1.7	27
26	Nonspherical laser-induced cavitation bubbles. Physical Review E, 2010, 81, 016308.	0.8	58
27	Examination of axonal injury and regeneration in micropatterned neuronal culture using pulsed laser microbeam dissection. Lab on A Chip, 2010, 10, 2083.	3.1	48
28	Pulsed Laser Ablation of Soft Biological Tissues. , 2010, , 551-615.		13
29	Amplitude and Phase of Tightly Focused Laser Beams in Turbid Media. Physical Review Letters, 2009, 103, 043903.	2.9	27
30	Biophysical Response to Pulsed Laser Microbeamâ€œInduced Cell Lysis and Molecular Delivery. Journal of Biophotonics, 2008, 1, 24-35.	1.1	69
31	Characterization and use of laser-based lysis for cell analysis on-chip. Journal of the Royal Society Interface, 2008, 5, S113-21.	1.5	37
32	Generation of laser-induced cavitation bubbles with a digital hologram. Optics Express, 2008, 16, 18964.	1.7	41
33	Examination of laser microbeam cell lysis in a PDMS microfluidic channel using time-resolved imaging. Lab on A Chip, 2008, 8, 408.	3.1	95
34	Mechanisms of Pulsed Laser Microbeam Release of SU-8 Polymer â€œMicropalletsâ€œ for the Collection and Separation of Adherent Cells. Analytical Chemistry, 2008, 80, 4675-4679.	3.2	19
35	Radiative transport in the delta-P1 approximation for semi-infinite turbid media. Medical Physics, 2008, 35, 681-693.	1.6	34
36	Making CARS better. Proceedings of SPIE, 2008, , .	0.8	0

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37	Computational Engine for a Virtual Tissue Simulator. , 2008, , 431-443.		2
38	Coupled Forward-Adjoint Monte Carlo Simulations of Radiative Transport for the Study of Optical Probe Design in Heterogeneous Tissues. SIAM Journal on Applied Mathematics, 2007, 68, 253-270.	0.8	19
39	Perturbation and differential Monte Carlo methods for measurement of optical properties in a layered epithelial tissue model. Journal of Biomedical Optics, 2007, 12, 014030.	1.4	33
40	Optoacoustic imaging based on the interferometric measurement of surface displacement. Journal of Biomedical Optics, 2007, 12, 064001.	1.4	42
41	Laser-Induced Mixing in Microfluidic Channels. Analytical Chemistry, 2007, 79, 4484-4492.	3.2	146
42	Mechanisms of Laser Cellular Microsurgery. Methods in Cell Biology, 2007, 82, 111-151.	0.5	30
43	Pulsed Laser Microbeam-Induced Cell Lysis: Time-Resolved Imaging and Analysis of Hydrodynamic Effects. Biophysical Journal, 2006, 91, 317-329.	0.2	171
44	Estimating optical properties in layered tissues by use of the Born approximation of the radiative transport equation. Optics Letters, 2006, 31, 1088.	1.7	20
45	Mid-IR laser ablation of articular and fibro-cartilage:A wavelength dependence study of thermal injury and crater morphology. Lasers in Surgery and Medicine, 2006, 38, 218-228.	1.1	27
46	Pulsed Laser Microbeam Cell Lysis: Analysis of Biological Response by Hydrodynamic Modeling and Fluorescence Assays. , 2006, , .		0
47	Effects of laser pulse energy, geometric confinement and material stiffness on laser-induced cell lysis in a microfluidic chip. , 2006, , .		0
48	3D interferometric optoacoustic imaging. , 2005, , .		1
49	Cartilage ablation studies using mid-IR free electron laser. , 2005, , .		0
50	Free electron laser ablation of articular and fibro-cartilage at 2.79, 2.9, 6.1, and 6.45 μ m: Mass removal studies. Lasers in Surgery and Medicine, 2005, 36, 202-209.	1.1	14
51	Sampling tissue volumes using frequency-domain photon migration. Physical Review E, 2004, 69, 051908.	0.8	19
52	Optoacoustic imaging using interferometric measurement of surface displacement. Applied Physics Letters, 2004, 85, 5772-5774.	1.5	47
53	Radiative transport in the delta-P ₁ approximation: accuracy of fluence rate and optical penetration depth predictions in turbid semi-infinite media. Journal of Biomedical Optics, 2004, 9, 632.	1.4	78
54	Investigation of laser-induced cell lysis using time-resolved imaging. Applied Physics Letters, 2004, 84, 2940-2942.	1.5	99

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55	Controlled Ablation of Microtubules Using a Picosecond Laser. Biophysical Journal, 2004, 87, 4203-4212.	0.2	96
56	Use of the \hat{I}^2 -P ₁ approximation for recovery of optical absorption, scattering, and asymmetry coefficients in turbid media. Applied Optics, 2004, 43, 4677.	2.1	34
57	POISe: pulsed optoacoustic interferometric spectroscopy and imaging. , 2004, , .		0
58	Examination of laser-induced cell lysis by time resolved imaging. , 2004, 5322, 168.		0
59	Use of perturbation and differential Monte Carlo methods to solve inverse problems in heterogeneous media. , 2004, , .		0
60	Mechanisms of Pulsed Laser Ablation of Biological Tissues. ChemInform, 2003, 34, no.	0.1	4
61	Mechanisms of Pulsed Laser Ablation of Biological Tissues. Chemical Reviews, 2003, 103, 577-644.	23.0	1,669
62	Optoacoustic determination of optical attenuation depth using interferometric detection. Journal of Biomedical Optics, 2003, 8, 264.	1.4	28
63	Optoacoustic tomography using time-resolved interferometric detection of surface displacement. Journal of Biomedical Optics, 2003, 8, 273.	1.4	70
64	Kinetics of phase transitions in pulsed IR laser ablation of biological tissues. , 2003, , .		7
65	Role of Laser-Induced Plasma Formation in Pulsed Cellular Microsurgery and Micromanipulation. Physical Review Letters, 2002, 88, 078103.	2.9	174
66	Perturbation Monte Carlo methods to solve inverse photon migration problems in heterogeneous tissues. Optics Letters, 2001, 26, 1335.	1.7	151
67	Experimental investigation of optical breakdown using nanosecond 532-nm and 1064-nm laser pulses delivered at high numerical aperture. , 2001, , .		4
68	Gene inactivation by multiphoton-targeted photochemistry. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 9504-9507.	3.3	32
69	Chemometric analysis of frequency-domain photon migration data: quantitative measurements of optical properties and chromophore concentrations in multicomponent turbid media. Applied Optics, 2000, 39, 1659.	2.1	12
70	Comparison of cortical bone ablations by using infrared laser wavelengths 2.9 to 9.2 μ m. , 1999, 25, 421-434.		77
71	Measurement of tissue absorption coefficients by use of interferometric photothermal spectroscopy. Applied Optics, 1999, 38, 1259.	2.1	17
72	Measurement of tissue absorption coefficients by use of interferometric photothermal spectroscopy: erratum. Applied Optics, 1999, 38, 4266.	2.1	0

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73	<title>Superficial tissue optical property determination using spatially resolved measurements close to the source: comparison with frequency-domain photon migration measurements</title>. , 1999, , .		6
74	Comparison of pulsed CO2 laser ablation at 10.6 μm and 9.5 μm . , 1998, 23, 1-6.		28
75	<title>Cell permeabilization and molecular transport by laser microirradiation</title>. , 1998, 3260, 38.		22
76	Radiative transport in the diffusion approximation: An extension for highly absorbing media and small source-detector separations. Physical Review E, 1998, 58, 2395-2407.	0.8	90
77	<title>Physical mechanisms of pulsed infrared laser ablation of biological tissues</title>. , 1998, , .		4
78	Non-invasive measurements of breast tissue optical properties using frequency-domain photon migration. Philosophical Transactions of the Royal Society B: Biological Sciences, 1997, 352, 661-668.	1.8	242
79	Thermodynamic response of soft biological tissues to pulsed infrared-laser irradiation. Biophysical Journal, 1996, 70, 2981-2993.	0.2	68
80	Kinetics of cortical bone demineralization: Controlled demineralization? a new method for modifying cortical bone allografts. , 1996, 31, 365-372.		26
81	Physical factors involved in stress-wave-induced cell injury: The effect of stress gradient. Ultrasound in Medicine and Biology, 1995, 21, 961-967.	0.7	77
82	Pulsed laser ablation of tissue: surface vaporization or thermal explosion?. , 1995, , .		9
83	The thermodynamic response of soft biological tissues to pulsed ultraviolet laser irradiation. Biophysical Journal, 1995, 69, 1259-1271.	0.2	37
84	Thermal Relaxation of Port-Wine Stain Vessels Probed In Vivo: The Need for 1-10-Millisecond Laser Pulse Treatment.. Journal of Investigative Dermatology, 1995, 105, 709-714.	0.3	233
85	The Effect of Laser Parameters on the Zone of Thermal Injury Produced by Laser Ablation of Biological Tissue. Journal of Biomechanical Engineering, 1994, 116, 62-70.	0.6	39
86	Stress generated in polyimide by excimer laser irradiation. Journal of Applied Physics, 1993, 74, 4181-4189.	1.1	60
87	Modeling of thermal injury produced by laser ablation of biological tissue. , 1993, , .		1
88	Mid-Infrared laser ablation of the cornea: A comparative study. Lasers in Surgery and Medicine, 1992, 12, 274-281.	1.1	61
89	The effect of CO ₂ laser pulse repetition rate on tissue ablation rate and thermal damage. IEEE Transactions on Biomedical Engineering, 1991, 38, 1049-1052.	2.5	20