Irving J Bigio

List of Publications by Year
in descending order

122 papers	4,570 citations	126708 33 h-index	102304 66 g-index
123 all docs	123 docs citations	123 times ranked	3259 citing authors

#	Article	IF	Citations
1	Predictions and measurements of scattering and absorption over broad wavelength ranges in tissue phantoms. Applied Optics, 1997, 36, 949.	2.1	449
2	Ultraviolet and visible spectroscopies for tissue diagnostics: fluorescence spectroscopy and elastic-scattering spectroscopy. Physics in Medicine and Biology, 1997, 42, 803-814.	1.6	352
3	Diagnosis of breast cancer using elastic-scattering spectroscopy: preliminary clinical results. Journal of Biomedical Optics, 2000, 5, 221.	1.4	279
4	Spectroscopic diagnosis of bladder cancer with elastic light scattering. Lasers in Surgery and Medicine, 1995, 17, 350-357.	1.1	241
5	Influence of particle size and concentration on the diffuse backscattering of polarized light from tissue phantoms and biological cell suspensions. Applied Optics, 1997, 36, 125.	2.1	191
6	Diffuse backscattering Mueller matricesof highly scattering media. Optics Express, 1997, 1, 441.	1.7	179
7	Elastic scattering spectroscopy as a diagnostic tool for differentiating pathologies in the gastrointestinal tract: preliminary testing. Journal of Biomedical Optics, 1996, 1, 192.	1.4	172
8	Influence of the scattering phase function on light transport measurements in turbid media performed with small sourceâ€“detector separations. Optics Letters, 1996, 21, 546.	1.7	151
9	Spectrroscopic Sensing of Cancer and Cancer Therapy: Current Status of Translational Research. Cancer Biology and Therapy, 2004, 3, 259-267.	1.5	147
10	Confocal light absorption and scattering spectroscopic microscopy monitors organelles in live cells with no exogenous labels. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 17255-17260.	3.3	136
11	Measuring absorption coefficients in small volumes of highly scattering media: source-detector separations for which path lengths do not depend on scattering properties. Applied Optics, 1997, 36, 5655.	2.1	124
12	Analytical model of light reflectance for extraction of the optical properties in small volumes of turbid media. Applied Optics, 2007, 46, 7317.	2.1	124
13	Elastic scattering spectroscopy accurately detects high grade dysplasia and cancer in Barrett's oesophagus. Gut, 2005, 55, 1078-1083.	6.1	119
14	Elastic scattering spectroscopy for the diagnosis of colonic lesions: initial results of a novel optical biopsy technique. Gastrointestinal Endoscopy, 2006, 63, 257-261.	0.5	109
15	Non-invasive measurement of chemotherapy drug concentrations in tissue: preliminary demonstrations ofin vivomeasurements. Physics in Medicine and Biology, 1999, 44, 1397-1417.	1.6	107
16	Analysis of changes in reflectance measurements on biological tissues subjected to different probe pressures. Journal of Biomedical Optics, 2008, 13, 010502.	1.4	102
17	Using Infrared Spectroscopy and Multivariate Analysis to Detect Antibioticsâ€™ Resistant Escherichia coli Bacteria. Analytical Chemistry, 2017, 89, 8782-8790.	3.2	78
18	High-efficiency pulsed 106-Î¼m phase-conjugate reflection via degenerate four-wave mixing. Optics Letters, 1978, 3, 82.	1.7	73

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19	Inconsistent blood brain barrier disruption by intraarterial mannitol in rabbits: implications for chemotherapy. Journal of Neuro-Oncology, 2011, 104, 11-19.	1.4	69
20	Measurement of the hyperpolarizability ratioXyyyy(â^'2Ï‰;0,Ï‰,Ï‰)Xyyxx(â^'2Ï‰;0,Ï‰,Ï‰)for the inert gases. Physical Review A, 1974, 9, 35-39.	1.0	64
21	Elastic scattering spectroscopy for intraoperative determination of sentinel lymph node status in the breast. Journal of Biomedical Optics, 2004, 9, 1122.	1.4	60
22	Cationic surface charge enhances early regional deposition of liposomes after intracarotid injection. Journal of Neuro-Oncology, 2014, 120, 489-497.	1.4	50
23	Influence of the phase function in generalized diffuse reflectance models: review of current formalisms and novel observations. Journal of Biomedical Optics, 2014, 19, 075005.	1.4	48
24	Gender variations in the optical properties of skin in murine animal models. Journal of Biomedical Optics, 2011, 16, 011008.	1.4	47
25	Detection of antibiotic resistant Escherichia Coli bacteria using infrared microscopy and advanced multivariate analysis. Analyst, The, 2017, 142, 2136-2144.	1.7	47
26	Temporal Variations of Skin Pigmentation in C57Bl/6 Mice Affect Optical Bioluminescence Quantitation. Molecular Imaging and Biology, 2011, 13, 1114-1123.	1.3	46
27	Wavelength-dependent backscattering measurements for quantitative real-time monitoring of apoptosis in living cells. Journal of Biomedical Optics, 2009, 14, 064013.	1.4	43
28	Efficient phase conjugation of an ultraviolet XeF laser beam by stimulated Brillouin scattering. Optics Letters, 1982, 7, 108.	1.7	41
29	Ultrafast optical property map generation using lookup tables. Journal of Biomedical Optics, 2016, 21, 110501.	1.4	41
30	Cerebral Hypoperfusion-Assisted Intra-arterial Deposition of Liposomes in Normal and Glioma-Bearing Rats. Neurosurgery, 2015, 76, 92-100.	0.6	38
31	Attainment of the theoretical minimum input power for injection locking of an unstable-resonator KrF laser. Optics Letters, 1981, 6, 336.	1.7	37
32	Optical method for real-time monitoring of drug concentrations facilitates the development of novel methods for drug delivery to brain tissue. Journal of Biomedical Optics, 2007, 12, 034036.	1.4	37
33	Transient cerebral hypoperfusion assisted intraarterial cationic liposome delivery to brain tissue. Journal of Neuro-Oncology, 2014, 118, 73-82.	1.4	37
34	Elastic scattering spectroscopy for detection of cancer risk in Barrettâ€™s esophagus: experimental and clinical validation of error removal by orthogonal subtraction for increasing accuracy. Journal of Biomedical Optics, 2009, 14, 044022.	1.4	31
35	The feasibility of real-time in vivo optical detection of bloodâ€“brain barrier disruption with indocyanine green. Journal of Neuro-Oncology, 2012, 106, 551-560.	1.4	31
36	Liposome size and charge optimization for intraarterial delivery to gliomas. Drug Delivery and Translational Research, 2016, 6, 225-233.	3.0	31

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37	Elastic Scattering Spectroscopy as a Diagnostic Tool for Apoptosis in Cell Cultures. IEEE Journal of Selected Topics in Quantum Electronics, 2007, 13, 1663-1670.	1.9	30
38	Spatial mapping of drug delivery to brain tissue using hyperspectral spatial frequency-domain imaging. Journal of Biomedical Optics, 2014, 19, 096003.	1.4	30
39	Electric-Field Induced Harmonic Generation as a Probe of the Focal Region of a Laser Beam. Applied Optics, 1975, 14, 336.	2.1	28
40	Endoscopic histological assessment of colonic polyps by using elastic scattering spectroscopy. Gastrointestinal Endoscopy, 2015, 81, 539-547.	0.5	26
41	Fast and reliable determination ofEscherichia colisusceptibility to antibiotics: Infrared microscopy in tandem with machine learning algorithms. Journal of Biophotonics, 2019, 12, e201800478.	1.1	26
42	Comparison between ultraviolet-visible and near-infrared elastic scattering spectroscopy of chemically induced melanomas in an animal model. Journal of Biomedical Optics, 2004, 9, 1320.	1.4	24
43	Scanning elastic scattering spectroscopy detects metastatic breast cancer in sentinel lymph nodes. Journal of Biomedical Optics, 2010, 15, 047001.	1.4	23
44	Integrated optical tools for minimally invasive diagnosis and treatment at gastrointestinal endoscopy. Robotics and Computer-Integrated Manufacturing, 2011, 27, 249-256.	6.1	22
45	Elastic Light-Scattering Spectroscopy for Discrimination of Benign from Malignant Disease in Thyroid Nodules. Annals of Surgical Oncology, 2011, 18, 1300-1305.	0.7	21
46	Spectral classifier design with ensemble classifiers and misclassification-rejection: application to elastic-scattering spectroscopy for detection of colonic neoplasia. Journal of Biomedical Optics, 2011, 16, 067009.	1.4	21
47	The color of cancer: Margin guidance for oral cancer resection using elastic scattering spectroscopy. Laryngoscope, 2017, 127, S1-S9.	1.1	21
48	Comparison of elastic scattering spectroscopy with histology in ex vivo prostate glands: potential application for optically guided biopsy and directed treatment. Lasers in Medical Science, 2013, 28, 1323-1329.	1.0	20
49	Particle sizing with a fast polar nephelometer. Applied Optics, 2007, 46, 527.	2.1	19
50	Polar nephelometer based on a rotational confocal imaging setup. Applied Optics, 2006, 45, 2232.	2.1	18
51	Detection of gastrointestinal cancer by elastic scattering and absorption spectroscopies with the Los Alamos Optical Biopsy System. , 1995, 2387, 210.		17
52	Microwave absorption spectroscopy of DNA. Biopolymers, 1993, 33, 147-150.	1.2	16
53	Real-time imaging of action potentials in nerves using changes in birefringence. Biomedical Optics Express, 2016, 7, 1966.	1.5	16
54	Transform-limited-bandwidth injection locking of an XeF laser with an Ar-ion laser at 3511 Ã.... Optics Letters, 1982, 7, 19.	1.7	14

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55	Transient fluorescence in synchronously dividing Escherichia coli.. Proceedings of the National Academy of Sciences of the United States of America, 1985, 82, 7599-7603.	3.3	14
56	Elastic Scattering Spectroscopy as an Optical Marker of Inflammatory Bowel Disease Activity and Subtypes. Inflammatory Bowel Diseases, 2014, 20, 1.	0.9	14
57	Wavelength-dependent backscattering measurements for quantitative monitoring of apoptosis, Part 2: early spectral changes during apoptosis are linked to apoptotic volume decrease. Journal of Biomedical Optics, 2011, 16, 117002.	1.4	13
58	Elucidating the temporal dynamics of optical birefringence changes in crustacean nerves. Biomedical Optics Express, 2015, 6, 4165.	1.5	13
59	Optical Spectroscopy as a Method for Skin Cancer Risk Assessment. Photochemistry and Photobiology, 2019, 95, 1441-1445.	1.3	13
60	Cationizable lipid micelles as vehicles for intraarterial glioma treatment. Journal of Neuro-Oncology, 2016, 128, 21-28.	1.4	12
61	Flow arrest intra-arterial delivery of small TAT-decorated and neutral micelles to gliomas. Journal of Neuro-Oncology, 2017, 133, 77-85.	1.4	12
62	Wavelength-dependent backscattering measurements for quantitative monitoring of apoptosis, Part 1: early and late spectral changes are indicative of the presence of apoptosis in cell cultures. Journal of Biomedical Optics, 2011, 16, 117001.	1.4	10
63	Safety, feasibility, and optimization of intra-arterial mitoxantrone delivery to gliomas. Journal of Neuro-Oncology, 2016, 130, 449-454.	1.4	10
64	Quantitative birefringence microscopy for imaging the structural integrity of CNS myelin following circumscribed cortical injury in the rhesus monkey. Neurophotonics, 2021, 8, 015010.	1.7	9
65	Intra-arterial Mitoxantrone Delivery in Rabbits: An Optical Pharmacokinetic Study. Neurosurgery, 2011, 69, 706-712.	0.6	8
66	Real-time hemodynamic response and mitochondrial function changes with intracarotid mannitol injection. Brain Research, 2014, 1549, 42-51.	1.1	8
67	Optical scattering as an early marker of apoptosis during chemotherapy and antiangiogenic therapy in murine models of prostate and breast cancer. Neoplasia, 2021, 23, 294-303.	2.3	8
68	<title>Noninvasive identification of bladder cancer with subsurface backscattered light</title>. , 1994, , .		6
69	OPTICAL MEASUREMENT OF PHOTOSENSITIZER CONCENTRATION IN VIVO. Journal of Innovative Optical Health Sciences, 2011, 04, 97-111.	0.5	6
70	Elastic scattering spectroscopy for early detection of breast cancer: partially supervised Bayesian image classification of scanned sentinel lymph nodes. Journal of Biomedical Optics, 2018, 23, 1.	1.4	6
71	<title>Monte Carlo investigations of elastic scattering spectroscopy applied to latex spheres used as tissue phantoms</title>. , 1995, 2389, 103.		5
72	Diagnosis of dysplasia in Barrett's oesophagus with in-situ elastic-scattering spectroscopy. , 2000, 4161, 122.		5

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73	Broadband microwave absorption spectrometer for liquid media. Review of Scientific Instruments, 1988, 59, 2577-2582.	0.6	4
74	Elastic scattering spectroscopy in the diagnosis of pigmented lesions: comparison with clinical and histopathological diagnosis. , 2003, 5141, 147.		4
75	Towards minimally-invasive, quantitative assessment of chronic kidney disease using optical spectroscopy. Scientific Reports, 2019, 9, 7168.	1.6	4
76	Anatomy of the Human Osseous Spiral Lamina and Cochlear Partition Bridge: Relevance for Cochlear Partition Motion. JARO - Journal of the Association for Research in Otolaryngology, 2020, 21, 171-182.	0.9	4
77	Gastrointestinal Cancer Surveillance by Optical Sensing. Clinical Cancer Research, 2007, 13, 4315-4316.	3.2	3
78	Real-time Pathology to Guide Breast Surgery: Seeing Alone Is Not Believing. Clinical Cancer Research, 2012, 18, 6083-6085.	3.2	3
79	Depth-enhanced fluorescence imaging using masked detection of structured illumination. Journal of Biomedical Optics, 2014, 19, 116008.	1.4	3
80	Toward optical spectroscopyâ€guided lung biopsy: Demonstration of tissueâ€type classification. Journal of Biophotonics, 2021, 14, e202100132.	1.1	3
81	Spectroscopy for the Assessment of Melanomas. , 2006, , 359-386.		3
82	Beam-diagnostics techniques for multiterawatt CO_2 lasers. Applied Optics, 1980, 19, 914.	2.1	2
83	Quenching of backward stimulated Raman scattering by broadband forward Raman radiation. Optics Letters, 1984, 9, 294.	1.7	2
84	<title>Monte Carlo simulations incorporating Mie calculations of light transport in tissue phantoms: examination of photon sampling volumes for endoscopically compatible fiber optic probes</title>. , 1996, 2679, 124.		2
85	Elastic scattering spectroscopy for detection of prostate cancer: preliminary feasibility study. , 2003, , .		2
86	In-vivo detection of pre-cancerous changes in Barrett's esophagus using elastic scattering spectroscopy (ESS). , 2005, , .		2
87	Design of a system to measure light scattering from individual cells excited by an acoustic wave. Optics Express, 2008, 16, 3496.	1.7	2
88	Masked detection of structured illumination (MDSI): depth sensitive fluorescence measurement. , 2013, , .		2
89	Artificial Intelligence-Based Assessment of Colorectal Polyp Histology by Elastic-Scattering Spectroscopy. Digestive Diseases and Sciences, 2022, 67, 613-621.	1.1	2
90	<title>Determination of the cervical transformation zone using elastic-scattering spectroscopy</title>. , 1996, 2679, 85.		1

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91	<title>Optical biopsy for the diagnosis of dysplasia in Barrett's oesophagus</title>. , 2001, , .		1
92	<title>Optical biopsy for the diagnosis of dysplasia in Barrett's oesophagus</title>. , 2002, , .		1
93	Clinical applications of elastic-scattering spectroscopy beyond proof-of-principle: what really matters. , 2007, , .		1
94	Variations in the optical scattering properties of skin in murine animal models. Proceedings of SPIE, 2011, , .	0.8	1
95	Advances in optics for biotechnology, medicine and surgery. Biomedical Optics Express, 2012, 3, 531.	1.5	1
96	Early results of an in vivo trial of ESS in thyroid cancer. Proceedings of SPIE, 2012, , .	0.8	1
97	Quantitative Monitoring of Apoptosis in Viable Cells with Elastic Scattering Spectroscopy. , 2012, , .		1
98	Correction of fluorescence spectra using data from elastic scattering spectroscopy and a modified Beerâ€™s law. , 2002, , .		1
99	<title>Optical biopsy for the diagnosis of breast tumors</title>. , 2001, 4432, 143.		0
100	Absorption and scattering depth profile reconstruction in turbid media based on spectroscopy measurements. , 2007, , .		0
101	Analysis of particle size distributions from spectral reflectance measurements on small tissue volumes. , 2008, , .		0
102	Elastic light scattering spectroscopy for the detection of early cancer and pre-cancer. , 2009, , .		0
103	Improved Methods for Optical Determination of Uptake of Dye in vivo Rabbit Brain and in vitro Tissue Phantoms. , 2010, , .		0
104	Multimodal assessment of spatial distribution of drug-tracer uptake by brain tissue after intra-arterial injections. Proceedings of SPIE, 2014, , .	0.8	0
105	A comparison of Artificial Intelligence techniques for spectral classification in the diagnosis of human pathologies based upon optical biopsy. , 2000, , .		0
106	Optical pharmacokinetics to assess the permeability of angiogenic neovasculature. , 2002, , .		0
107	Elastic-scattering spectroscopy for cancer detection: What have we learned from preliminary clinical studies?. , 2004, , .		0
108	Proposed advantages of using mid-IR wavelengths for morphological characterization of pre-cancerous tissue using elastic-scattering spectroscopy. , 2004, , .		0

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109	An Optical Method for Assessing Angiogenesis: Preliminary Results. , 2006, , .		0
110	Fiber Probes for the Measurement of the Absorption Coefficient in Small Volumes: a Monte Carlo Analysis. , 2006, , .		0
111	Optical Pharmacokinetics Measurement of Photosensitising Drug Concentrations for Photodynamic Therapy. , 2008, , .		0
112	"Can Scattering Spectroscopy Detect Disease Earlier than Histopathology?". , 2010, , .		0
113	Early Changes in Wavelength-Dependent Backscattering During Apoptosis are Linked to Apoptotic Volume Decrease. , 2011, , .		0
114	On the Validity of Assumptions to Incorporate Absorption in Monte Carlo Simulations. , 2012, , .		0
115	Backscattering Mueller Matrix Analysis for Biomedical Optical Diagnostics. , 1998, , .		0
116	Quantitative Pharmacokinetics of Chemotherapy and PDT Agents in vivo using Elastic-Scattering Spectroscopy. , 1998, , .		0
117	Real-Time Movies of Neuronal Activity by Imaging Intrinsic Changes in Optical Birefringence. , 2016, , .		0
118	Real-Time Movies of Neuronal Activity by Imaging Intrinsic Changes in Optical Birefringence. , 2016, , .		0
119	Real-Time Movies of Neuronal Activity by Imaging Intrinsic Changes in Optical Birefringence. , 2016, , .		0
120	Real-Time Movies of Neuronal Activity by Imaging Intrinsic Changes in Optical Birefringence. , 2016, , .		0
121	Real-Time Movies of Neuronal Activity by Imaging Intrinsic Changes in Optical Birefringence. , 2016, , .		0
122	Optical scattering as an early marker of apoptosis during chemotherapy and antiangiogenic therapy in murine models of prostate and breast cancer. , 2021, , .		0