

Michael G Sowa

List of Publications by Citations

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120 papers	2,388 citations	29 h-index	44 g-index
149 ext. papers	2,778 ext. citations	3.3 avg, IF	4.36 L-index

#	Paper	IF	Citations
120	Infrared spectroscopy: a new frontier in medicine. <i>Biophysical Chemistry</i> , 1997 , 68, 109-25	3.5	117
119	Optical coherence tomography: fundamental principles, instrumental designs and biomedical applications. <i>Biophysical Reviews</i> , 2011 , 3, 155	3.7	88
118	Modification of the extracellular matrix following myocardial infarction monitored by FTIR spectroscopy. <i>Biochimica Et Biophysica Acta - Molecular Basis of Disease</i> , 1996 , 1315, 73-7	6.9	88
117	Collagen morphology and texture analysis: from statistics to classification. <i>Scientific Reports</i> , 2013 , 3, 2190	4.9	87
116	Ex vivo detection and characterization of early dental caries by optical coherence tomography and Raman spectroscopy. <i>Journal of Biomedical Optics</i> , 2005 , 10, 031118	3.5	87
115	Near infrared spectroscopic assessment of hemodynamic changes in the early post-burn period. <i>Burns</i> , 2001 , 27, 241-9	2.3	77
114	Detection of early dental caries using polarized Raman spectroscopy. <i>Optics Express</i> , 2006 , 14, 203-15	3.3	72
113	An update on novel non-invasive approaches for periodontal diagnosis. <i>Journal of Periodontology</i> , 2010 , 81, 186-98	4.6	67
112	Photoacoustic Near-Infrared Investigation of Homo-Polypeptides. <i>The Journal of Physical Chemistry</i> , 1994 , 98, 4748-4755		65
111	Assessment of tissue viability using near-infrared spectroscopy. <i>Journal of Plastic, Reconstructive and Aesthetic Surgery</i> , 1998 , 51, 210-7		62
110	Assessment of skin flaps using optically based methods for measuring blood flow and oxygenation. <i>Plastic and Reconstructive Surgery</i> , 2005 , 115, 539-46	2.7	62
109	Classification of human gliomas by infrared imaging spectroscopy and chemometric image processing. <i>Vibrational Spectroscopy</i> , 2005 , 38, 143-149	2.1	59
108	Early dental caries detection using a fibre-optic coupled polarization-resolved Raman spectroscopic system. <i>Optics Express</i> , 2008 , 16, 6274-84	3.3	49
107	Assessment of early demineralization in teeth using the signal attenuation in optical coherence tomography images. <i>Journal of Biomedical Optics</i> , 2008 , 13, 054053	3.5	49
106	Clinical utilization of near-infrared spectroscopy devices for burn depth assessment. <i>Wound Repair and Regeneration</i> , 2007 , 15, 332-40	3.6	49
105	Analysis of Spectroscopic Imaging Data by Fuzzy C-Means Clustering. <i>Analytical Chemistry</i> , 1997 , 69, 3370-8374	0.8374	47
104	Near-IR spectroscopic imaging for skin hydration: the long and the short of it. <i>Biopolymers</i> , 2002 , 67, 96-106	2.2	43

103	Speckle noise attenuation in optical coherence tomography by compounding images acquired at different positions of the sample. <i>Optics Communications</i> , 2007 , 269, 247-251	2	42
102	Visible-near infrared multispectral imaging of the rat dorsal skin flap. <i>Journal of Biomedical Optics</i> , 1999 , 4, 474-81	3.5	41
101	Visualization of cutaneous hemoglobin oxygenation and skin hydration using near-infrared spectroscopic imaging. <i>Skin Research and Technology</i> , 2001 , 7, 238-45	1.9	40
100	Infrared spectroscopic investigation of in vivo and ex vivo human nails. <i>Vibrational Spectroscopy</i> , 1995 , 10, 49-56	2.1	39
99	Classification of burn injuries using near-infrared spectroscopy. <i>Journal of Biomedical Optics</i> , 2006 , 11, 054002	3.5	36
98	Variance reduction in estimating classification error using sparse datasets. <i>Chemometrics and Intelligent Laboratory Systems</i> , 2005 , 79, 91-100	3.8	36
97	Comparison of different infrared measurement techniques in the clinical analysis of biofluids. <i>TrAC - Trends in Analytical Chemistry</i> , 1996 , 15, 286-296	14.6	36
96	Signal attenuation and box-counting fractal analysis of optical coherence tomography images of arterial tissue. <i>Biomedical Optics Express</i> , 2010 , 1, 268-277	3.5	35
95	Near infrared spectroscopic reflectance imaging: supervised vs. unsupervised analysis using an art conservation application. <i>Vibrational Spectroscopy</i> , 1999 , 19, 33-45	2.1	34
94	Vibrational overtone study of five-membered aromatic heterocycles: local mode interpretations. <i>The Journal of Physical Chemistry</i> , 1991 , 95, 7659-7664		34
93	Noninvasive Assessment of Regional and Temporal Variations in Tissue Oxygenation by Near-Infrared Spectroscopy and Imaging. <i>Applied Spectroscopy</i> , 1997 , 51, 143-152	3.1	33
92	FT-IR spectra of glycine oligomers. <i>Vibrational Spectroscopy</i> , 1997 , 14, 143-146	2.1	30
91	Fuzzy C-means clustering and principal component analysis of time series from near-infrared imaging of forearm ischemia. <i>Computerized Medical Imaging and Graphics</i> , 1997 , 21, 299-308	7.6	29
90	Multimodal nonlinear optical imaging of atherosclerotic plaque development in myocardial infarction-prone rabbits. <i>Journal of Biomedical Optics</i> , 2010 , 15, 020501	3.5	28
89	In vivo determination of multiple indices of periodontal inflammation by optical spectroscopy. <i>Journal of Periodontal Research</i> , 2009 , 44, 117-24	4.3	27
88	Infrared spectroscopy: shedding light on synovitis in patients with rheumatoid arthritis. <i>British Journal of Rheumatology</i> , 2003 , 42, 76-82		27
87	FT-IR Step-Scan Photoacoustic Phase Analysis and Depth Profiling of Calcified Tissue. <i>Applied Spectroscopy</i> , 1994 , 48, 316-319	3.1	27
86	Spectroscopic assessment of cutaneous hemodynamics in the presence of high epidermal melanin concentration. <i>Clinica Chimica Acta</i> , 2002 , 317, 203-12	6.2	26

85	Near-infrared spectroscopic assessment of tissue hydration following surgery. <i>Journal of Surgical Research</i> , 1999 , 86, 62-9	2.5	26
84	FT-IR photoacoustic depth profiling spectroscopy of enamel. <i>Calcified Tissue International</i> , 1994 , 54, 481-5	3.9	22
83	Differentiating atherosclerotic plaque burden in arterial tissues using femtosecond CARS-based multimodal nonlinear optical imaging. <i>Biomedical Optics Express</i> , 2010 , 1, 59-73	3.5	21
82	Precision of Raman depolarization and optical attenuation measurements of sound tooth enamel. <i>Analytical and Bioanalytical Chemistry</i> , 2007 , 387, 1613-9	4.4	21
81	Long-wavelength near-infrared spectroscopic imaging for in-vivo skin hydration measurements. <i>Vibrational Spectroscopy</i> , 2002 , 28, 37-43	2.1	21
80	Overtone line narrowing and intramolecular vibrational energy redistribution in substituted toluenes. <i>Journal of Chemical Physics</i> , 1991 , 95, 3040-3045	3.9	21
79	Evaluation of texture parameters for the quantitative description of multimodal nonlinear optical images from atherosclerotic rabbit arteries. <i>Physics in Medicine and Biology</i> , 2011 , 56, 5319-34	3.8	20
78	Noninvasive measurement of edema in partial thickness burn wounds. <i>Journal of Burn Care and Research</i> , 2009 , 30, 807-17	0.8	20
77	Review of near-infrared methods for wound assessment. <i>Journal of Biomedical Optics</i> , 2016 , 21, 091304	3.5	19
76	Background removal from polarized Raman spectra of tooth enamel using the wavelet transform. <i>Journal of Raman Spectroscopy</i> , 2011 , 42, 580-585	2.3	19
75	FT-IR PAS depth profiling investigation of polyethylene surface sulfonation. <i>Journal of Molecular Structure</i> , 1996 , 379, 77-85	3.4	18
74	A comparison of methods using optical coherence tomography to detect demineralized regions in teeth. <i>Journal of Biophotonics</i> , 2011 , 4, 814-23	3.1	17
73	High-Quality Tissue Imaging Using a Catheter-Based Swept-Source Optical Coherence Tomography Systems With an Integrated Semiconductor Optical Amplifier. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2011 , 60, 3376-3383	5.2	16
72	Melanin as a confounding factor in near infrared spectroscopy of skin. <i>Vibrational Spectroscopy</i> , 2002 , 28, 45-52	2.1	16
71	Independent component analysis of photoacoustic depth profiles. <i>Journal of Molecular Spectroscopy</i> , 2005 , 229, 231-237	1.3	16
70	Vibrational overtone study of five-membered aromatic heterocycles: Fermi resonance interactions. <i>The Journal of Physical Chemistry</i> , 1993 , 97, 809-815		16
69	The application of overtone spectroscopy to investigation of CH bond lengths and molecular conformations. <i>International Reviews in Physical Chemistry</i> , 1986 , 5, 133-138	7	16
68	Molecular mapping of periodontal tissues using infrared microspectroscopy. <i>BMC Medical Imaging</i> , 2005 , 5, 2	2.9	14

67	Added soft tissue contrast using signal attenuation and the fractal dimension for optical coherence tomography images of porcine arterial tissue. <i>Physics in Medicine and Biology</i> , 2010 , 55, 2317-31	3.8	12
66	Assessment of local hemodynamics in periodontal inflammation using optical spectroscopy. <i>Journal of Periodontology</i> , 2011 , 82, 1161-8	4.6	12
65	Eliminating the issue of skin color in assessment of the blanch response. <i>Advances in Skin and Wound Care</i> , 2001 , 14, 180-8	1.5	12
64	Determining the effect of calculus, hypocalcification, and stain on using optical coherence tomography and polarized Raman spectroscopy for detecting white spot lesions. <i>International Journal of Dentistry</i> , 2010 , 2010, 879252	1.9	10
63	CH Stretching Overtone Spectra of Trimethylene Oxide and Trimethylene Sulfide. <i>The Journal of Physical Chemistry</i> , 1996 , 100, 13433-13438		10
62	Blind source separation of photoacoustic depth profiles into independent components. <i>Applied Spectroscopy</i> , 2005 , 59, 164-72	3.1	10
61	Nonlinear optical microscopy in decoding arterial diseases. <i>Biophysical Reviews</i> , 2012 , 4, 323-334	3.7	9
60	On site noninvasive assessment of peri-implant inflammation by optical spectroscopy. <i>Journal of Periodontal Research</i> , 2011 , 46, 382-8	4.3	9
59	The effect of elevated dietary cholesterol on pulmonary surfactant function in adolescent mice. <i>Pediatric Pulmonology</i> , 2008 , 43, 426-34	3.5	9
58	The Utility of near Infrared Imaging in Intra-Operative Prediction of Flap Outcome: A Reverse McFarlane Skin Flap Model Study. <i>Journal of Near Infrared Spectroscopy</i> , 2012 , 20, 601-615	1.5	8
57	Near-Infrared Spectroscopy Imaging for Assessing Skin and Wound Oxygen Perfusion. <i>Clinics in Podiatric Medicine and Surgery</i> , 2018 , 35, 343-355	0.9	8
56	Caspase 3 activity in isolated fetal rat lung fibroblasts and rat periodontal ligament fibroblasts: cigarette smoke induced alterations. <i>Tobacco Induced Diseases</i> , 2013 , 11, 25	3.2	7
55	In vitro assessment of optical properties of blood by applying the extended Huygens-Fresnel principle to time-domain optical coherence tomography signal at 1300 nm. <i>International Journal of Biomedical Imaging</i> , 2008 , 2008, 591618	5.2	7
54	Assessment of tissue oxygenation of periodontal inflammation in smokers using optical spectroscopy. <i>Journal of Clinical Periodontology</i> , 2014 , 41, 340-7	7.7	6
53	Texture based segmentation method to detect atherosclerotic plaque from optical tomography images 2013 ,		6
52	Semi-parametric estimation in the compositional modeling of multicomponent systems from Raman spectroscopic data. <i>Applied Spectroscopy</i> , 2006 , 60, 877-83	3.1	6
51	Determining intestinal viability by near infrared spectroscopy: A veterinary application. <i>Vibrational Spectroscopy</i> , 2005 , 38, 223-228	2.1	6
50	Assessment of tissue oxygenation of periodontal inflammation in patients with coronary artery diseases using optical spectroscopy. <i>BMC Oral Health</i> , 2014 , 14, 25	3.7	5

49	Intravascular optical coherence tomography on a beating heart model. <i>Journal of Biomedical Optics</i> , 2010 , 15, 046023	3.5	5
48	Reaction mechanisms of phosphorus fluorides: An ab initio study. <i>Journal of Fluorine Chemistry</i> , 1997 , 83, 27-30	2.1	5
47	DNA fragmentation in developing lung fibroblasts exposed to <i>Stachybotrys chartarum</i> (atra) toxins. <i>Pediatric Pulmonology</i> , 2007 , 42, 592-9	3.5	5
46	Blind phase projection as an effective means of recovering pure component spectra from phase modulated photoacoustic spectra. <i>Vibrational Spectroscopy</i> , 2005 , 39, 163-168	2.1	5
45	Fractal dimension and directional analysis of elastic and collagen fiber arrangement in unsectioned arterial tissues affected by atherosclerosis and aging. <i>Journal of Applied Physiology</i> , 2019 , 126, 638-646	3.7	5
44	Skin hydration images from near-infrared reflectance spectra. <i>American Clinical Laboratory</i> , 2002 , 21, 32-6		5
43	Characteristics of time-domain optical coherence tomography profiles generated from blood-saline mixtures. <i>Physics in Medicine and Biology</i> , 2009 , 54, 4759-75	3.8	4
42	Using the linearization approach for synchronizing the phase of photoacoustic reference and sample data. <i>Applied Spectroscopy</i> , 2004 , 58, 1228-35	3.1	4
41	Photothermal infrared spectroscopy: applications to medicine. <i>Journal of Molecular Structure</i> , 1993 , 300, 239-244	3.4	4
40	Quantitative nonlinear optical assessment of atherosclerosis progression in rabbits. <i>Analytical Chemistry</i> , 2014 , 86, 6346-54	7.8	3
39	Real-time control of angioplasty balloon inflation based on feedback from intravascular optical coherence tomography: experimental validation on an excised heart and a beating heart model. <i>IEEE Transactions on Biomedical Engineering</i> , 2012 , 59, 1488-95	5	3
38	Performance analysis of a swept-source optical coherence tomography system with a quadrature interferometer and optical amplification. <i>Optics Communications</i> , 2011 , 284, 2622-2627	2	3
37	Ex vivo imaging of early dental caries within the interproximal space 2009 ,		3
36	Towards early dental caries detection with OCT and polarized Raman spectroscopy. <i>Head & Neck Oncology</i> , 2010 , 2,		3
35	Near infrared point and imaging spectroscopy for burn depth assessment. <i>International Congress Series</i> , 2005 , 1281, 137-142		3
34	Detecting Intestinal Ischemia Using near Infrared Spectroscopy. <i>Journal of Near Infrared Spectroscopy</i> , 2006 , 14, 1-7	1.5	3
33	Development of a laser speckle imaging system for measuring relative blood flow velocity 2006 , 6343, 27		3
32	Skin hydration by spectroscopic imaging using multiple near-infrared bands 2002 , 4614, 79		3

31	Novel Approach in the Evaluation of Flap Failure Using near Infrared Spectroscopy and Imaging. <i>Canadian Journal of Plastic Surgery</i> , 2000 , 8, 68-72		3
30	Applications of visible near-infrared spectroscopy and imaging in burn injury assessment 2000 , 3918, 83		3
29	Development of visible and near-IR LCTF-based spectroscopic imaging systems for macroscopic samples 2000 ,		3
28	Detection of Atherosclerotic Plaque from Optical Coherence Tomography Images Using Texture-Based Segmentation. <i>Sovremennye Tehnologii V Medicine</i> , 2015 , 7, 21-28	1.2	3
27	Emerging Dental Applications of Raman Spectroscopy 2010 , 263-284		3
26	Tools for experimental characterization of the non-uniform rotational distortion in intravascular OCT probes 2011 ,		2
25	Using multimodal femtosecond CARS imaging to determine plaque burden in luminal atherosclerosis 2011 ,		2
24	Propagation properties of 1300-nm light in blood-saline mixtures determined through optical coherence tomography 2008 ,		2
23	OCT of early dental caries: a comparative study with histology and Raman spectroscopy 2005 ,		2
22	Skin hydration imaging using a long-wavelength near-infrared digital camera 2001 ,		2
21	Hemodynamic information obtained by statistical analysis of near-IR spectroscopic images 1998 , 3257, 296		2
20	Snapshot Multispectral Imaging Is Not Inferior to SPY Laser Fluorescence Imaging When Predicting Murine Flap Necrosis. <i>Plastic and Reconstructive Surgery</i> , 2020 , 145, 85e-93e	2.7	2
19	Vascular plaque detection with reduced textural feature set from optical coherence tomography images 2016 ,		1
18	Assessment of the hemodynamic profile in periodontal tissues of diabetic subjects with periodontitis by optical spectroscopy. <i>Journal of Periodontal Research</i> , 2015 , 50, 594-601	4.3	1
17	Near-Infrared In Vivo Spectroscopic Imaging: Biomedical Research and Clinical Applications 2011 , 149-165		1
16	Imaging of biomedical turbid tissue using catheter swept-source optical coherence tomography 2010 ,		1
15	A single-photon fluorescence and multi-photon spectroscopic study of atherosclerotic lesions 2009 ,		1
14	Combining Optical Coherence Tomography and Raman Spectroscopy for Investigating Dental and Other Mineralized Tissues 263-290		1

- 13 Near-Infrared Spectroscopy, In Vivo Tissue Analysis by **2006**, 1
- 12 Characterization of early dental caries by polarized Raman spectroscopy **2006**, 6137, 44 1
- 11 Near infrared hyperspectral imaging: the road traveled to a clinical burn application **2005**, 5969, 388 1
- 10 Assessment of tissue viability by near-IR spectroscopy and imaging **1998**, 1
- 9 Fast detection of vascular plaque in optical coherence tomography images using a reduced feature set **2018**, 1
- 8 . *IEEE Photonics Journal*, **2014**, 6, 1-11 1.8
- 7 Atherosclerosis diagnostic imaging by optical spectroscopy and optical coherence tomography **2006**, 6078, 402
- 6 Dental caries detection by optical spectroscopy: a polarized Raman approach with fibre-optic coupling **2006**, 6343, 18
- 5 Spectroscopic detection of the blanch response at the heel of the foot: a possible diagnostic for stage I pressure ulcers **2005**, 5969, 343
- 4 Near-infrared spectroscopic approach to assess tissue viability following a thermal injury **2001**, 4259, 36
- 3 Stereoselectivity and reaction dynamics of fluorinated compounds. *Journal of Fluorine Chemistry*, **1991**, 54, 179 2.1
- 2 Modification of the Extracellular Matrix in the Infarcted Rat Heart Probed by FTIR Spectroscopy **1995**, 483-484
- 1 FTIR/NIR Assessment of Ischemic Damage in the Rat Heart **1997**, 451-453