

Gary W Small

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/281279/publications.pdf>

Version: 2024-02-01

116
papers

3,297
citations

136740

32
h-index

168136

53
g-index

121
all docs

121
docs citations

121
times ranked

1546
citing authors

#	ARTICLE	IF	CITATIONS
1	Genetic Algorithm-Based Method for Selecting Wavelengths and Model Size for Use with Partial Least-Squares Regression: Application to Near-Infrared Spectroscopy. <i>Analytical Chemistry</i> , 1996, 68, 4200-4212.	3.2	186
2	Determination of physiological levels of glucose in an aqueous matrix with digitally filtered Fourier transform near-infrared spectra. <i>Analytical Chemistry</i> , 1990, 62, 1457-1464.	3.2	155
3	Noninvasive Glucose Sensing. <i>Analytical Chemistry</i> , 2005, 77, 5429-5439.	3.2	144
4	Temperature-Insensitive Near-Infrared Spectroscopic Measurement of Glucose in Aqueous Solutions. <i>Applied Spectroscopy</i> , 1994, 48, 477-483.	1.2	122
5	Measurement of glucose and other analytes in undiluted human serum with near-infrared transmission spectroscopy. <i>Analytica Chimica Acta</i> , 1998, 371, 255-267.	2.6	115
6	Phantom Glucose Calibration Models from Simulated Noninvasive Human Near-Infrared Spectra. <i>Analytical Chemistry</i> , 1998, 70, 1773-1781.	3.2	115
7	Comparison of Combination and First Overtone Spectral Regions for Near-Infrared Calibration Models for Glucose and Other Biomolecules in Aqueous Solutions. <i>Analytical Chemistry</i> , 2004, 76, 5405-5413.	3.2	112
8	Strategies for coupling digital filtering with partial least-squares regression: Application to the determination of glucose in plasma by Fourier-transform near-infrared spectroscopy. <i>Analytical Chemistry</i> , 1993, 65, 3279-3289.	3.2	109
9	Near-Infrared Spectroscopic Measurement of Physiological Glucose Levels in Variable Matrices of Protein and Triglycerides. <i>Analytical Chemistry</i> , 1996, 68, 1124-1135.	3.2	97
10	Measurement of Glucose in Water with First-Overtone Near-Infrared Spectra. <i>Applied Spectroscopy</i> , 1998, 52, 1597-1605.	1.2	90
11	Noninvasive Blood Glucose Measurements by Near-Infrared Transmission Spectroscopy Across Human Tongues. <i>Diabetes Technology and Therapeutics</i> , 2000, 2, 5-16.	2.4	85
12	Genetic Algorithm-Based Wavelength Selection for the Near-Infrared Determination of Glucose in Biological Matrixes: Initialization Strategies and Effects of Spectral Resolution. <i>Analytical Chemistry</i> , 1998, 70, 4472-4479.	3.2	80
13	Near-infrared spectroscopic measurement of glucose in a protein matrix. <i>Analytical Chemistry</i> , 1993, 65, 3271-3278.	3.2	78
14	Scattering and Absorption Effects in the Determination of Glucose in Whole Blood by Near-Infrared Spectroscopy. <i>Analytical Chemistry</i> , 2005, 77, 4587-4594.	3.2	73
15	Chemometrics and near-infrared spectroscopy: Avoiding the pitfalls. <i>TrAC - Trends in Analytical Chemistry</i> , 2006, 25, 1057-1066.	5.8	73
16	Genetic Algorithm-Based Protocol for Coupling Digital Filtering and Partial Least-Squares Regression: Application to the Near-Infrared Analysis of Glucose in Biological Matrices. <i>Analytical Chemistry</i> , 1996, 68, 2663-2675.	3.2	64
17	Detection of atmospheric pollutants by direct analysis of passive Fourier transform infrared interferograms. <i>Analytical Chemistry</i> , 1988, 60, 264-269.	3.2	61
18	Design of optimized finite impulse response digital filters for use with passive Fourier transform infrared interferograms. <i>Analytical Chemistry</i> , 1990, 62, 1768-1777.	3.2	57

#	ARTICLE	IF	CITATIONS
19	Classification of Fourier Transform Infrared Microscopic Imaging Data of Human Breast Cells by Cluster Analysis and Artificial Neural Networks. <i>Applied Spectroscopy</i> , 2003, 57, 14-22.	1.2	53
20	Peer Reviewed: Learning Optimization From Nature: Genetic Algorithms and Simulated Annealing. <i>Analytical Chemistry</i> , 1997, 69, 236A-242A.	3.2	50
21	Interactive computer system for the simulation of carbon-13 nuclear magnetic resonance spectra. <i>Analytical Chemistry</i> , 1983, 55, 1121-1127.	3.2	48
22	Multivariate Calibration Standardization across Instruments for the Determination of Glucose by Fourier Transform Near-Infrared Spectrometry. <i>Analytical Chemistry</i> , 2003, 75, 5905-5915.	3.2	45
23	Development and optimization of piecewise linear discriminants for the automated detection of chemical species. <i>Analytical Chemistry</i> , 1991, 63, 936-944.	3.2	44
24	Pure Component Selectivity Analysis of Multivariate Calibration Models from Near-Infrared Spectra. <i>Analytical Chemistry</i> , 2004, 76, 2583-2590.	3.2	44
25	Automated detection of methanol vapour by open path Fourier transform infrared spectrometry. <i>Analytica Chimica Acta</i> , 1994, 297, 387-403.	2.6	41
26	Spectral Simulation Methodology for Calibration Transfer of Near-Infrared Spectra. <i>Applied Spectroscopy</i> , 2007, 61, 406-413.	1.2	40
27	Automated Detection of Trichloroethylene by Fourier Transform Infrared Remote Sensing Measurements. <i>Analytical Chemistry</i> , 1997, 69, 118-129.	3.2	39
28	Determination of Glucose in a Biological Matrix by Multivariate Analysis of Multiple Band-Pass-Filtered Fourier Transform Near-Infrared Interferograms. <i>Analytical Chemistry</i> , 1997, 69, 4695-4702.	3.2	38
29	Calibration Standardization Algorithm for Partial Least-Squares Regression: A Application to the Determination of Physiological Levels of Glucose by Near-Infrared Spectroscopy. <i>Analytical Chemistry</i> , 2002, 74, 4097-4108.	3.2	38
30	Simulation of carbon-13 nuclear magnetic resonance spectra of cycloalkanol with computer-based structural descriptors. <i>Analytical Chemistry</i> , 1983, 55, 1128-1134.	3.2	36
31	Determination of topological similarity of carbon atoms in the simulation of carbon-13 nuclear magnetic resonance spectra. <i>Analytical Chemistry</i> , 1984, 56, 1314-1323.	3.2	35
32	Selection of optimum training sets for use in pattern recognition analysis of chemical data. <i>Analytica Chimica Acta</i> , 1991, 249, 305-321.	2.6	35
33	Rapid signal processing techniques for Fourier transform infrared remote sensing. <i>TrAC - Trends in Analytical Chemistry</i> , 1991, 10, 149-155.	5.8	32
34	Data reduction in the simulation of carbon-13 nuclear magnetic resonance spectra of steroids. <i>Analytical Chemistry</i> , 1984, 56, 2307-2314.	3.2	31
35	Improved response function for the Simplex optimization of piecewise linear discriminants. <i>Chemometrics and Intelligent Laboratory Systems</i> , 1996, 32, 95-109.	1.8	30
36	Carbon-13 nuclear magnetic resonance spectrum simulation methodology for the structure elucidation of carbohydrates. <i>Analytical Chemistry</i> , 1987, 59, 1805-1811.	3.2	29

#	ARTICLE	IF	CITATIONS
37	Calibration Transfer Algorithm for Automated Qualitative Analysis by Passive Fourier Transform Infrared Spectrometry. <i>Analytical Chemistry</i> , 2000, 72, 1690-1698.	3.2	27
38	Remote Detection of Volatile Organic Compounds by Passive Multispectral Infrared Imaging Measurements. <i>Applied Spectroscopy</i> , 2007, 61, 349-358.	1.2	24
39	Advanced near-infrared monitor for stable real-time measurement and control of <i>Pichia pastoris</i> bioprocesses. <i>Biotechnology Progress</i> , 2014, 30, 749-759.	1.3	24
40	Evaluation of selectivity and robustness of near-infrared glucose measurements based on short-scan Fourier transform infrared interferograms. <i>Analytica Chimica Acta</i> , 2003, 490, 325-340.	2.6	23
41	Quantitative Analysis of Bandpass-Filtered Fourier Transform Infrared Interferograms. <i>Analytical Chemistry</i> , 1995, 67, 2269-2278.	3.2	22
42	Real-time monitoring of glycerol and methanol to enhance antibody production in industrial <i>Pichia pastoris</i> bioprocesses. <i>Biochemical Engineering Journal</i> , 2015, 94, 115-124.	1.8	22
43	Evaluation of nonlinear model building strategies for the determination of glucose in biological matrices by near-infrared spectroscopy. <i>Analytica Chimica Acta</i> , 1999, 384, 333-343.	2.6	21
44	Evaluation of Data Pretreatment and Model Building Methods for the Determination of Glucose from Near-Infrared Single-Beam Spectra. <i>Applied Spectroscopy</i> , 1999, 53, 402-414.	1.2	21
45	Automated Detection of Chemical Vapors by Pattern Recognition Analysis of Passive Multispectral Infrared Remote Sensing Imaging Data. <i>Applied Spectroscopy</i> , 2002, 56, 1082-1093.	1.2	21
46	Quantitative Analysis of Sulfur Dioxide with Passive Fourier Transform Infrared Remote Sensing Interferogram Data. <i>Applied Spectroscopy</i> , 2000, 54, 341-348.	1.2	20
47	Simulation of carbon-13 nuclear magnetic resonance spectra of polycyclic aromatic compounds. <i>Analytical Chemistry</i> , 1991, 63, 1081-1090.	3.2	19
48	Multivariate Calibration Models Based on the Direct Analysis of Near-Infrared Single-Beam Spectra. <i>Applied Spectroscopy</i> , 1997, 51, 1330-1339.	1.2	19
49	Wavelet analysis used for spectral background removal in the determination of glucose from near-infrared single-beam spectra. <i>Analytica Chimica Acta</i> , 2010, 681, 63-70.	2.6	19
50	Automated spectral interpretation. <i>Analytical Chemistry</i> , 1987, 59, 535A-546A.	3.2	18
51	Automated selection of library subsets for infrared spectral searching. <i>Analytical Chemistry</i> , 1990, 62, 226-233.	3.2	18
52	Remote Detection of Heated Ethanol Plumes by Airborne Passive Fourier Transform Infrared Spectrometry. <i>Applied Spectroscopy</i> , 2003, 57, 1432-1441.	1.2	18
53	Automated detection of sulfur dioxide in stack emissions by passive Fourier transform infrared spectrometry. <i>Vibrational Spectroscopy</i> , 2001, 27, 97-107.	1.2	17
54	Blank Augmentation Protocol for Improving the Robustness of Multivariate Calibrations. <i>Applied Spectroscopy</i> , 2007, 61, 497-506.	1.2	17

#	ARTICLE	IF	CITATIONS
55	Structure elucidation methodology for disaccharides based on carbon-13 nuclear magnetic resonance spectrum simulation. <i>Analytical Chemistry</i> , 1989, 61, 666-674.	3.2	16
56	Discriminant analysis techniques for the identification of atmospheric pollutants from passive Fourier transform infrared interferograms. <i>Analytica Chimica Acta</i> , 1991, 246, 85-102.	2.6	16
57	Determination of glucose in a synthetic biological matrix with decimated time-domain filtered near-infrared interferogram data. <i>Vibrational Spectroscopy</i> , 2000, 23, 103-117.	1.2	15
58	Digital Filtering and Model Updating Methods for Improving the Robustness of Near-Infrared Multivariate Calibrations. <i>Applied Spectroscopy</i> , 2009, 63, 246-255.	1.2	15
59	Artificial Neural Networks for the Automated Detection of Trichloroethylene by Passive Fourier Transform Infrared Spectrometry. <i>Analytical Chemistry</i> , 2000, 72, 1680-1689.	3.2	14
60	Comparison of optimization algorithms for piecewise linear discriminant analysis: application to Fourier transform infrared remote sensing measurements. <i>Analytica Chimica Acta</i> , 1996, 331, 157-175.	2.6	13
61	Application of Multivariate Calibration Techniques to Quantitative Analysis of Bandpass-Filtered Fourier Transform Infrared Interferogram Data. <i>Applied Spectroscopy</i> , 1997, 51, 1369-1376.	1.2	13
62	Airborne passive Fourier transform infrared remote sensing of methanol vapor from industrial emissions. <i>Analyst, The</i> , 2008, 133, 1776.	1.7	13
63	Determination of moisture content of polyamide 66 directly from combination region near-infrared spectra. <i>Journal of Applied Polymer Science</i> , 2014, 131, .	1.3	13
64	Automated selection of models for the simulation of carbon-13 nuclear magnetic resonance spectra. <i>Analytical Chemistry</i> , 1984, 56, 2314-2319.	3.2	12
65	Robust Classifier for the Automated Detection of Ammonia in Heated Plumes by Passive Fourier Transform Infrared Spectrometry. <i>Analytical Chemistry</i> , 2003, 75, 2018-2026.	3.2	12
66	Determination of Organic Contaminants in Aqueous Samples by Near-Infrared Spectroscopy. <i>Applied Spectroscopy</i> , 2000, 54, 1047-1054.	1.2	11
67	Multiple Filtering Strategy for the Automated Detection of Ethanol by Passive Fourier Transform Infrared Spectrometry. <i>Applied Spectroscopy</i> , 2001, 55, 1544-1552.	1.2	11
68	Reconstruction of gas chromatograms from digitally filtered Fourier-transform infrared interferograms. <i>Analytical Chemistry</i> , 1989, 61, 1073-1079.	3.2	10
69	Automated Spectrum Simulation Methods for Carbon-13 Nuclear Magnetic Resonance Spectroscopy Based on Database Retrieval and Model-Building Strategies. <i>Journal of Chemical Information and Computer Sciences</i> , 1997, 37, 249-257.	2.8	9
70	Calibration Transfer in the Automated Detection of Acetone by Passive Fourier Transform Infrared Spectrometry. <i>Applied Spectroscopy</i> , 2000, 54, 706-714.	1.2	9
71	Robust absorbance computations in the analysis of glucose by near-infrared spectroscopy. <i>Vibrational Spectroscopy</i> , 2007, 43, 440-446.	1.2	9
72	Multivariate Calibration with Basis Functions Derived from Optical Filters. <i>Analytical Chemistry</i> , 2009, 81, 2199-2207.	3.2	9

#	ARTICLE	IF	CITATIONS
73	Quantitative Determination of Methanol and Ethanol with Synthetic Calibration Spectra in Passive Fourier Transform Infrared Remote Sensing Measurements. <i>Applied Spectroscopy</i> , 2013, 67, 913-923.	1.2	9
74	Enhanced Structural Encoding Algorithm for Database Retrievals of Carbon-13 Nuclear Magnetic Resonance Chemical Shifts. <i>Journal of Chemical Information and Computer Sciences</i> , 1996, 36, 310-322.	2.8	8
75	Database retrieval techniques for carbon-13 nuclear magnetic resonance spectrum simulation. <i>Journal of Chemical Information and Computer Sciences</i> , 1992, 32, 279-285.	2.8	7
76	Effect of Spectral Resolution on Pattern Recognition Analysis Using Passive Fourier Transform Infrared Sensor Data. <i>Applied Spectroscopy</i> , 1999, 53, 1382-1391.	1.2	7
77	High-pass filters for spectral background suppression in airborne passive Fourier transform infrared spectrometry. <i>Analytica Chimica Acta</i> , 2004, 501, 235-247.	2.6	7
78	Infinite impulse response filters for direct analysis of interferogram data from airborne passive Fourier transform infrared spectrometry. <i>Vibrational Spectroscopy</i> , 2005, 37, 39-52.	1.2	7
79	Spectral Simulation Protocol for Extending the Lifetime of Near-Infrared Multivariate Calibrations. <i>Analytical Chemistry</i> , 2009, 81, 1208-1216.	3.2	7
80	Design Considerations for Near-Infrared Filter Photometry: Effects of Noise Sources and Selectivity. <i>Applied Spectroscopy</i> , 2009, 63, 700-708.	1.2	7
81	Simulation of carbon-13 nuclear magnetic resonance spectra of linear cyclic aromatic compounds. <i>Analytical Chemistry</i> , 1989, 61, 2658-2664.	3.2	6
82	Quantitative determination of ethanol in heated plumes by passive Fourier transform infrared remote sensing measurements. <i>Analyst</i> , The, 2007, 132, 330.	1.7	6
83	Automated detection of radioisotopes from an aircraft platform by pattern recognition analysis of gamma-ray spectra. <i>Journal of Environmental Radioactivity</i> , 2018, 192, 654-666.	0.9	6
84	Signal Processing Techniques for Remote Infrared Chemical Sensing. , 1990, , 71-111.		6
85	Effects of Data Sampling Rate on Pattern Recognition Analysis of FT-IR Interferograms. <i>Applied Spectroscopy</i> , 1992, 46, 49-59.	1.2	5
86	Simulated Radiance Profiles for Automating the Interpretation of Airborne Passive Multi-Spectral Infrared Images. <i>Applied Spectroscopy</i> , 2008, 62, 1049-1059.	1.2	5
87	Background correction method for improving the automated detection of radioisotopes from airborne gamma-ray surveys. <i>Journal of Environmental Radioactivity</i> , 2019, 198, 104-116.	0.9	5
88	Committee classifier based on linear discriminant analysis for the detection of radioisotopes from airborne gamma-ray spectra. <i>Journal of Environmental Radioactivity</i> , 2020, 217, 106217.	0.9	5
89	Application of visual spectral matching techniques to automated carbon-13 nuclear magnetic resonance library searching. <i>Analytical Chemistry</i> , 1988, 60, 1886-1895.	3.2	4
90	The Effect of Length and Diameter on the Signal-to-Noise Ratio of Evanescent Field Absorption Fiber-Optic Sensors. <i>Applied Spectroscopy</i> , 1992, 46, 1129-1133.	1.2	4

#	ARTICLE	IF	CITATIONS
91	Ridge regression techniques for the optimization of piecewise linear discriminants: application to Fourier transform infrared remote sensing measurements. <i>Analytica Chimica Acta</i> , 1993, 279, 309-322.	2.6	4
92	Performance Enhancement of Vector-Based Search Systems: Application to Carbon-13 Nuclear Magnetic Resonance Chemical Shift Prediction. <i>Journal of Chemical Information and Computer Sciences</i> , 1996, 36, 46-53.	2.8	4
93	Digital Filtering Implementations for the Detection of Broad Spectral Features by Direct Analysis of Passive Fourier Transform Infrared Interferograms. <i>Applied Spectroscopy</i> , 2004, 58, 432-441.	1.2	4
94	Application of Dynamical Analysis Techniques in the Extraction of Compound-Specific Information from Fourier Transform Infrared Interferograms. <i>Applied Spectroscopy</i> , 1992, 46, 1790-1798.	1.2	3
95	Effects of Bandwidth and Overlap on Multivariate Calibration Models Based on Simulated Fourier Transform Infrared Interferogram Data. <i>Applied Spectroscopy</i> , 1999, 53, 1556-1566.	1.2	3
96	Synthetic training sets for the development of discriminant functions for the detection of volatile organic compounds from passive infrared remote sensing data. <i>Analyst, The</i> , 2011, 136, 309-316.	1.7	3
97	Threshold concentration monitoring based on pattern recognition analysis of differential near-infrared spectra. <i>RSC Advances</i> , 2014, 4, 35405-35414.	1.7	3
98	Determination of temperatures of polyamide 66 directly from near-infrared spectra. <i>Journal of Applied Polymer Science</i> , 2014, 131, .	1.3	3
99	Determination of temperatures of aqueous-based samples directly from near infrared spectra. <i>Journal of Near Infrared Spectroscopy</i> , 2017, 25, 289-300.	0.8	3
100	Nocturnal hypoglycemic alarm based on near-infrared spectroscopy: In vitro simulation studies. <i>Analytica Chimica Acta</i> , 2017, 987, 81-90.	2.6	3
101	Neural networks for the automated detection of methanol vapour from airborne passive infrared multispectral imaging data. <i>International Journal of Remote Sensing</i> , 2020, 41, 6698-6717.	1.3	3
102	Longitudinal Study Comparing Orthogonal Signal Correction Algorithms Coupled with Partial Least-Squares for Quantitative Near-Infrared Spectroscopy. <i>Analytical Letters</i> , 2022, 55, 449-466.	1.0	3
103	Real-Time Radionuclide Identification and Mapping Capabilities of the U.S. Environmental Protection Agency's Airborne Spectral Photometric Environmental Collection Technology. <i>NATO Science for Peace and Security Series B: Physics and Biophysics</i> , 2015, , 105-116.	0.2	3
104	Application of parallel processing techniques to improving the efficiency of MM2 molecular mechanics calculations. <i>Journal of Computational Chemistry</i> , 1993, 14, 977-985.	1.5	2
105	Effects of Spectral Resolution on the Determination of Glucose in a Simulated Biological Matrix by Fourier Transform near Infrared Spectrometry. <i>Journal of Near Infrared Spectroscopy</i> , 2006, 14, 291-299.	0.8	2
106	Design and characterization of protein films for modeling near-infrared spectra of human tissue. <i>Analyst, The</i> , 2015, 140, 3981-3988.	1.7	2
107	Determination of structural similarity by quantitative comparisons of Wiswesser Line Notation entries. <i>Journal of Chemical Information and Computer Sciences</i> , 1990, 30, 73-80.	2.8	1
108	Calibration diagnostic and updating strategy based on quantitative modeling of near-infrared spectral residuals. <i>Analyst, The</i> , 2015, 140, 786-796.	1.7	1

#	ARTICLE	IF	CITATIONS
109	Nocturnal Hypoglycemic Alarm Based on Near-Infrared Spectroscopy: In Vivo Studies with a Rat Animal Model. <i>Analytical Chemistry</i> , 2019, 91, 1855-1862.	3.2	1
110	Computer Software Review. Microsoft, Version 4.0. <i>Journal of Chemical Information and Computer Sciences</i> , 1988, 28, 234-235.	2.8	0
111	Computer Software Reviews. NMR simulator and IR simulator. <i>Journal of Chemical Information and Computer Sciences</i> , 1988, 28, 232-234.	2.8	0
112	Books: Fourier Transform for Beginners. <i>Analytical Chemistry</i> , 1996, 68, 738A-738A.	3.2	0
113	Software: Fitting Data to Models. <i>Analytical Chemistry</i> , 1996, 68, 368A-369A.	3.2	0
114	Books: Advanced methods and data processing. <i>Analytical Chemistry</i> , 1997, 69, 424A-424A.	3.2	0
115	Passive Airborne Fourier Transform Infrared Remote Detection of Methanol by Use of Wavelet Analysis as A Feature Extraction Method. <i>Analytical Letters</i> , 2019, 52, 2251-2265.	1.0	0
116	Temperature correction strategy for improving concentration predictions with near-infrared spectra of aqueous-based samples. <i>Analytica Chimica Acta</i> , 2020, 1095, 20-29.	2.6	0