David W Hahn

List of Publications by Year
in descending order

113 papers	6,629 citations	101543 36 h-index	66911 78 g-index
116 all docs	116 docs citations	116 times ranked	4752 citing authors

#	Article	IF	Citations
1	Laser-Induced Breakdown Spectroscopy (LIBS), Part II: Review of Instrumental and Methodological Approaches to Material Analysis and Applications to Different Fields. Applied Spectroscopy, 2012, 66, 347-419.	2.2	1,160
2	Laser-Induced Breakdown Spectroscopy (LIBS), Part I: Review of Basic Diagnostics and Plasmaâ€"Particle Interactions: Still-Challenging Issues within the Analytical Plasma Community. Applied Spectroscopy, 2010, 64, 335A-336A.	2.2	834
3	A Raman Spectroscopic Study of MoS2 and MoO3: Applications to Tribological Systems. Tribology Letters, 2011, 42, 301-310.	2.6	575
4	Detection and Analysis of Aerosol Particles by Laser-Induced Breakdown Spectroscopy. Aerosol Science and Technology, 2000, 33, 30-48.	3.1	202
5	On-line analysis of ambient air aerosols using laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2001, 56, 851-864.	2.9	170
6	On the utilization of principal component analysis in laser-induced breakdown spectroscopy data analysis, a review. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2018, 148, 65-82.	2.9	160
7	Discrete Particle Detection and Metal Emissions Monitoring Using Laser-Induced Breakdown Spectroscopy. Applied Spectroscopy, 1997, 51, 1836-1844.	2.2	136
8	Frictional anisotropy of oriented carbon nanotube surfaces. Tribology Letters, 2005, 18, 59-62.	2.6	136
9	Implementation of laser-induced breakdown spectroscopy as a continuous emissions monitor for toxic metals. Waste Management, 2000, 20, 455-462.	7.4	123
10	Sampling statistics and considerations for single-shot analysis using laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2002, 57, 779-790.	2.9	100
11	Feasibility of Detection and Identification of Individual Bioaerosols Using Laser-Induced Breakdown Spectroscopy. Analytical Chemistry, 2005, 77, 631-638.	6.5	95
12	Temporal Gating for the Optimization of Laser-Induced Breakdown Spectroscopy Detection and Analysis of Toxic Metals. Applied Spectroscopy, 2001, 55, 1312-1319.	2.2	93
13	Assessment of the Upper Particle Size Limit for Quantitative Analysis of Aerosols Using Laser-Induced Breakdown Spectroscopy. Analytical Chemistry, 2002, 74, 5450-5454.	6.5	90
14	Laser-induced breakdown spectroscopy for sizing and elemental analysis of discrete aerosol particles. Applied Physics Letters, 1998, 72, 2960-2962.	3.3	83
15	Laser ablationâ€"laser induced breakdown spectroscopy (LA-LIBS): A means for overcoming matrix effects leading to improved analyte response. Journal of Analytical Atomic Spectrometry, 2009, 24, 1665.	3.0	81
16	Evaluation of XRF and LIBS technologies for on-line sorting of CCA-treated wood waste. Waste Management, 2004, 24, 413-424.	7.4	80
17	Temporal analysis of laser-induced plasma properties as related to laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2004, 59, 327-333.	2.9	72
18	Calibration Effects for Laser-Induced Breakdown Spectroscopy of Gaseous Sample Streams:â€‰ Analyte Response of Gas-Phase Species versus Solid-Phase Species. Analytical Chemistry, 2005, 77, 1118-1124.	6.5	72

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19	Plasmaâ˜Particle Interactions in a Laser-Induced Plasma:Â Implications for Laser-Induced Breakdown Spectroscopy. Analytical Chemistry, 2006, 78, 1509-1514.	6.5	68
20	Laser-induced breakdown spectroscopy for analysis of micro and nanoparticles. Journal of Analytical Atomic Spectrometry, 2012, 27, 1110.	3.0	63
21	Evaluation of Laser-Induced Breakdown Spectroscopy (LIBS) as a Measurement Technique for Evaluation of Total Elemental Concentration in Soils. Applied Spectroscopy, 2012, 66, 99-106.	2.2	60
22	Dual-pulse Laser Induced Breakdown Spectroscopy for analysis of gaseous and aerosol systems: Plasma-analyte interactions. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2006, 61, 788-796.	2.9	59
23	Solar Thermochemical Energy Storage Through Carbonation Cycles of SrCO₃/SrO Supported on SrZrO₃. ChemSusChem, 2015, 8, 3793-3798.	6.8	58
24	100% Efficient Sub-Nanoliter Sample Introduction in Laser-Induced Breakdown Spectroscopy and Inductively Coupled Plasma Spectrometry: Implications for Ultralow Sample Volumes. Analytical Chemistry, 2010, 82, 2568-2573.	6.5	55
25	Detection of Gaseous and Particulate Fluorides by Laser-Induced Breakdown Spectroscopy. Applied Spectroscopy, 2001, 55, 1455-1461.	2.2	54
26	On-Line Sorting of Wood Treated with Chromated Copper Arsenate Using Laser-Induced Breakdown Spectroscopy. Applied Spectroscopy, 2002, 56, 1337-1344.	2.2	54
27	The effect of multi-component aerosol particles on quantitative laser-induced breakdown spectroscopy: Consideration of localized matrix effects. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2007, 62, 1466-1474.	2.9	54
28	Magnesium-manganese oxides for high temperature thermochemical energy storage. Journal of Energy Storage, 2019, 21, 599-610.	8.1	50
29	Investigation of helium addition for laser-induced plasma spectroscopy of pure gas phase systems: Analyte interactions and signal enhancement. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2007, 62, 1390-1398.	2.9	47
30	Study of early laser-induced plasma dynamics: Transient electron density gradients via Thomson scattering and Stark Broadening, and the implications on laser-induced breakdown spectroscopy measurements. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2008, 63, 1038-1046.	2.9	46
31	Reduction of soot emissions by iron pentacarbonyl in isooctane diffusion flames. Combustion and Flame, 2008, 154, 164-180.	5.2	46
32	Comparison of nonintensified and intensified CCD detectors for laser-induced breakdown spectroscopy. Applied Optics, 2003, 42, 6016.	2.1	44
33	Assessment of soot particle vaporization effects during laser-induced incandescence with time-resolved light scattering. Applied Optics, 2005, 44, 4211.	2.1	44
34	Theoretical and Experimental Investigation of Solar Methane Reforming through the Nonstoichiometric Ceria Redox Cycle. Energy Technology, 2017, 5, 2138-2149.	3.8	41
35	Hydrogen Leak Detection Using Laser-Induced Breakdown Spectroscopy. Applied Spectroscopy, 2005, 59, 348-353.	2.2	38
36	Dual-pulse laser induced breakdown spectroscopy: Time-resolved transmission and spectral measurements. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2005, 60, 968-974.	2.9	37

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37	Dynamics of ablation plume particles generated during excimer laser corneal ablation. Lasers in Surgery and Medicine, 1995, 16, 384-389.	2.1	36
38	The effects of oxygen on the detection of mercury using laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2001, 56, 419-430.	2.9	36
39	Plasma volume considerations for analysis of gaseous and aerosol samples using laser-induced breakdown spectroscopy. Journal of Analytical Atomic Spectrometry, 2002, 17, 1534-1539.	3.0	35
40	Particle size limits for quantitative aerosol analysis using laser-induced breakdown spectroscopy: Temporal considerations. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2009, 64, 1153-1158.	2.9	34
41	Quantification of gold and silver in minerals by laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2017, 136, 106-115.	2.9	34
42	Aerosol generation system for development and calibration of laser-induced breakdown spectroscopy instrumentation. Review of Scientific Instruments, 2001, 72, 3706-3713.	1.3	33
43	Double-pulse and single-pulse laser-induced breakdown spectroscopy for distinguishing between gaseous and particulate phase analytes. Applied Optics, 2010, 49, C110.	2.1	31
44	Heat Treatments Modify the Tribological Properties of Nickel Boron Coatings. ACS Applied Materials & Interfaces, 2012, 4, 3069-3076.	8.0	31
45	Laser-Induced Breakdown Spectroscopy for Ambient Air Particulate Monitoring: Correlation of Total and Speciated Aerosol Particle Counts. Applied Spectroscopy, 2006, 60, 237-245.	2.2	29
46	Effects of laser repetition rate on corneal tissue ablation for 193â€nm excimer laser light. Lasers in Surgery and Medicine, 2008, 40, 483-493.	2.1	29
47	Laser ablation methods for analysis of urinary calculi: Comparison study based on calibration pellets. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2013, 81, 43-49.	2.9	29
48	Investigation of long term reactive stability of ceria for use in solar thermochemical cycles. Energy, 2015, 89, 924-931.	8.8	29
49	Conditional data processing for single-shot spectral analysis by use of laser-induced breakdown spectroscopy. Applied Optics, 2003, 42, 6022.	2.1	26
50	Raman spectroscopy for detection of ammonium nitrate as an explosive precursor used in improvised explosive devices. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2020, 233, 118204.	3.9	26
51	Laser ablationâ€“laser induced breakdown spectroscopy for the measurement of total elemental concentration in soils. Applied Optics, 2013, 52, 2470.	1.8	25
52	Interaction between iron based compound and soot particles in diffusion flame. Energy, 2016, 116, 933-941.	8.8	25
53	A transient heat transfer model for high temperature solar thermochemical reactors. International Journal of Hydrogen Energy, 2016, 41, 2307-2325.	7.1	25
54	Laser-Induced Breakdown Spectroscopy and Principal Component Analysis for the Classification of Spectra from Gold-Bearing Ores. Applied Spectroscopy, 2020, 74, 42-54.	2.2	25

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55	Alternative Statistical Methods for Spectral Data Processing: Applications to Laser-Induced Breakdown Spectroscopy of Gaseous and Aerosol Systems. Applied Spectroscopy, 2008, 62, 1144-1152.	2.2	24
56	Effects of aerosols and laser cavity seeding on spectral and temporal stability of laser-induced plasmas: applications to LIBS. Journal of Analytical Atomic Spectrometry, 2004, 19, 1289.	3.0	23
57	Development and numerical solution of a mechanistic model for corneal tissue ablation with the 193 nm argon fluoride excimer laser. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2007, 24, 265.	1.5	23
58	Numerical simulation of laser-induced breakdown spectroscopy: Modeling of aerosol analysis with finite diffusion and vaporization effects. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2008, 63, 293-304.	2.9	23
59	Plasma chemistry produced during laser ablation of graphite in air, argon, helium and nitrogen. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2020, 166, 105800.	2.9	23
60	Characterization of submicron polyethylene wear debris from synovial-fluid samples of revised knee replacements using a light-scattering technique. , 1996, 31, 355-363.		21
61	Assessment of Transient Changes in Corneal Hydration Using Confocal Raman Spectroscopy. Cornea, 2003, 22, 363-370.	1.7	21
62	Measurement of small-signal absorption coefficient and absorption cross section of collagen for 193-nm excimer laser light and the role of collagen in tissue ablation. Applied Optics, 2004, 43, 5443.	2.1	21
63	Study of analyte dissociation and diffusion in laser-induced plasmas: implications for laser-induced breakdown spectroscopy. Journal of Analytical Atomic Spectrometry, 2010, 25, 1921.	3.0	21
64	Oxidation reaction kinetics for the steam-iron process in support of hydrogen production. International Journal of Hydrogen Energy, 2011, 36, 15125-15135.	7.1	21
65	Effect of laser irradiance and wavelength on the analysis of gold- and silver-bearing minerals with laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2018, 145, 86-95.	2.9	21
66	The role of iron additives in sooting premixed flames. Proceedings of the Combustion Institute, 1992, 24, 1007-1014.	0.3	20
67	Investigation of polarization effects for nanosecond laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2010, 65, 1033-1040.	2.9	19
68	Laser-induced breakdown spectroscopy: an introduction to the feature issue. Applied Optics, 2003, 42, 5937.	2.1	18
69	Plasmonic Diagnostics for Tribology: In Situ Observations Using Surface Plasmon Resonance in Combination with Surface-Enhanced Raman Spectroscopy. Tribology Letters, 2013, 49, 95-102.	2.6	18
70	Largeâ€area diamond deposition in an atmospheric pressure stagnationâ€flow reactor. Applied Physics Letters, 1996, 68, 2158-2160.	3.3	16
71	The influence of laser-particle interaction in laser induced breakdown spectroscopy and laser ablation inductively coupled plasma spectrometry. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2011, 66, 179-185.	2.9	16
72	Magnesioferrites for solar thermochemical fuel production. Solar Energy, 2018, 163, 1-15.	6.1	16

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73	Analysis of polyethylene wear debris using micro-Raman spectroscopy: A report on the presence of beta-carotene. , 1997, 35, 31-37.		15
74	Iron oxidation kinetics for H2 and CO production via chemical looping. International Journal of Hydrogen Energy, 2015, 40, 1675-1689.	7.1	15
75	Enhanced ArF laser absorption in a collagen target under ablative conditions. Lasers in Surgery and Medicine, 1994, 15, 107-111.	2.1	14
76	High-Temperature Vapor Phase Lubrication Using Carbonaceous Gases. Tribology Letters, 2010, 40, 3-9.	2.6	13
77	Ablation plume particle dynamics during excimer laser ablation of polyimide. Journal of Applied Physics, 1995, 77, 2759-2766.	2.5	12
78	A simple finite element model to study the effect of plasma plume expansion on the nanosecond pulsed laser ablation of aluminum. Applied Physics A: Materials Science and Processing, 2019, 125, 1.	2.3	12
79	Determination of Excimer Laser Ablation Rates of Corneal Tissue Using Wax Impressions of Ablation Craters and White-Light Interferometry. Ophthalmic Surgery Lasers and Imaging Retina, 2004, 35, 41-51.	0.7	12
80	Fiber-coupled laser-induced breakdown and Raman spectroscopy for flexible sample characterization with depth profiling capabilities. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2014, 100, 116-122.	2.9	11
81	Aerosol measurements with laser-induced breakdown spectroscopy and conditional analysis. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2021, 179, 106107.	2.9	11
82	The use of multi-element aerosol particles for determining temporal variations in temperature and electron density in laser-induced plasmas in support of quantitative laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2015, 109, 1-7.	2.9	10
83	Laser Induced Plasma Spectroscopy for the Characterization of Aerosols and Particulates. KONA Powder and Particle Journal, 2001, 19, 25-33.	1.7	10
84	Extinction efficiencies of elongated soot particles. Journal of Quantitative Spectroscopy and Radiative Transfer, 1989, 42, 219-224.	2.3	9
85	Double-pulse laser ablation coupled to laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2014, 98, 48-53.	2.9	9
86	Uncertainty quantification for modeling pulsed laser ablation of aluminum considering uncertainty in the temperature-dependent absorption coefficient. International Journal of Heat and Mass Transfer, 2018, 120, 515-522.	4.8	8
87	Laser-Induced Breakdown Spectroscopy for the Analysis of Cobaltâ€"Chromium Orthopaedic Wear Debris Particles. Applied Spectroscopy, 2002, 56, 984-993.	2.2	7
88	Geiger photodiode array for compact, lightweight laser-induced breakdown spectroscopy instrumentation. Applied Optics, 2003, 42, 6072.	2.1	7
89	Laser-induced breakdown spectroscopy (LIBS) for detection of ammonium nitrate in soils. Proceedings of SPIE, 2009, , .	0.8	6
90	Real-time measurement of ArF excimer laser corneal tissue ablation rates using cross-correlation of laser waveforms. Optics Express, 2011, 19, 4231.	3.4	6

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91	Differential laser-induced perturbation spectroscopy using a deep-ultraviolet excimer laser. Optics Letters, 2011, 36, 2116.	3.3	6
92	Heat Transfer Between Colliding Surfaces and Particles. Journal of Heat Transfer, 2012, 134, .	2.1	6
93	Analysis of Air Cargo Temperature Variations During Transport Operations. Transactions of the ASABE, 2018, 61, 723-732.	1.1	6
94	Laser ablation at high repetition rate coupled to laser-induced breakdown spectroscopy for analysis of non-matrix matched standards. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2020, 166, 105795.	2.9	6
95	On the optical properties of submicrometre inhomogeneous flame particulates. Journal Physics D: Applied Physics, 1993, 26, 1851-1858.	2.8	5
96	Comparative evaluation of differential laser-induced perturbation spectroscopy as a technique to discriminate emerging skin pathology. Journal of Biomedical Optics, 2012, 17, 067002.	2.6	5
97	Investigation of Iron Oxide Morphology in a Cyclic Redox Water Splitting Process for Hydrogen Generation. Materials, 2012, 5, 2003-2014.	2.9	5
98	Optical properties of polyimide during ArF excimer laser ablation. Journal of Applied Physics, 1994, 76, 1830-1832.	2.5	4
99	Differential Laserâ€Induced Perturbation Spectroscopy for Analysis of Mixtures of the Fluorophores <scp>l</scp>â€Phenylalanine, <scp>l</scp>â€Tyrosine and <scp>l</scp>â€Tryptophan Using a Fluorescence Probe. Photochemistry and Photobiology, 2016, 92, 658-666.	2.5	4
100	LIBS for aerosol analysis. , 2020, , 499-535.		4
101	Chemical Characterization Using Laser-Induced Breakdown Spectroscopy of Products Released from Lithium-Ion Battery Cells at Thermal Runaway Conditions. Applied Spectroscopy, 2022, 76, 967-977.	2.2	4
102	Differential laser-induced perturbation Raman spectroscopy: a comparison with Raman spectroscopy for analysis and classification of amino acids and dipeptides. Journal of Biomedical Optics, 2015, 20, 047006.	2.6	3
103	Detection of Explosives Using Differential Laser-Induced Perturbation Spectroscopy with a Raman-based Probe. Applied Spectroscopy, 2016, 70, 676-687.	2.2	3
104	Induction of Lambda Prophage by 213 nm Laser Radiation: A Quantitative Comparison with 193 nm Excimer Radiation Using Image Analysis. Photochemistry and Photobiology, 1996, 63, 281-285.	2.5	2
105	Modeling Analysis for the Optimization of Diamond Deposition in a Stagnation-Flow Flame Reactor. Combustion Science and Technology, 1997, 126, 175-199.	2.3	2
106	A Kinetic Model for Ammonia Adsorption on a Titanium Nitride Surface. IEEE Sensors Journal, 2012, 12, 843-848.	4.7	2
107	Systematic study of diamond film deposition in an atmospheric-pressure stagnation-flow flame reactor. Diamond and Related Materials, 1998, 7, 1320-1327.	3.9	1
108	Response to Rebuttal to â€œTheoretical and Experimental Investigation of Solar Methane Reforming through the Nonstoichiometric Ceria Redox Cycleâ€• Energy Technology, 2017, 5, 2153-2155.	3.8	1

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109	Ablation Characteristics of Nanosecond Laser Pulsed Ablation of Aluminum. , 2018, , .		1
110	Excimer Laser Photofragmentation/Fragment Detection for Analysis of the Oxygenated Hydrocarbon Ethyl-3-Ethyoxypropionate: Implications for Atmospheric Monitoring. Applied Spectroscopy, 2008, 62, 1028-1037.	2.2	0
111	Laser-induced breakdown spectroscopy (LIBS) for aerosol analysis. , 2008, , .		0
112	Heat Transfer Between Colliding Surfaces and Particles. , 2011, , .		0
113	Differential Laser-Induced Perturbation Spectroscopy Method for Biological Material Classification. , 2016, , .		0