William B Brinckerhoff

List of Publications by Year
in descending order

80 papers	7,862 citations	136950 32 h-index	118850 62 g-index
83 all docs	83 docs citations	83 times ranked	4936 citing authors

#	Article	IF	Citations
1	Europan Molecular Indicators of Life Investigation (EMILI) for a Future Europa Lander Mission. Frontiers in Space Technologies, 2022, 2, .	1.4	7
2	Science Goals and Mission Architecture of the Europa Lander Mission Concept. Planetary Science Journal, 2022, 3, 22.	3.6	42
3	Science Autonomy and Space Science: Application to the ExoMars Mission. Frontiers in Astronomy and Space Sciences, 2022, 9, .	2.8	3
4	Revealing the Mysteries of Venus: The DAVINCI Mission. Planetary Science Journal, 2022, 3, 117.	3.6	62
5	ExoMars Mars Organic Molecule Analyzer (MOMA) Laser Desorption/Ionization Mass Spectrometry (LDI-MS) Analysis of Phototrophic Communities from a Silica-Depositing Hot Spring in Yellowstone National Park, USA. Astrobiology, 2021, 21, 1515-1525.	3.0	5
6	Non-Robotic Science Autonomy Development. , 2021, 53, .		5
7	Development of a compact ion trap - time-of-flight mass spectrometer for space missions. , 2021, , .		0
8	Science Goals and Objectives for the Dragonfly Titan Rotorcraft Relocatable Lander. Planetary Science Journal, 2021, 2, 130.	3.6	80
9	Science Autonomy and the ExoMars Mission: Machine Learning to Help Find Life on Mars. Computer, 2021, 54, 69-77.	1.1	5
10	Laser Desorption Mass Spectrometry at Saturnâ€™s moon Titan. International Journal of Mass Spectrometry, 2021, 470, 116707.	1.5	22
11	Planetary Mass Spectrometry for Agnostic Life Detection in the Solar System. Frontiers in Astronomy and Space Sciences, 2021, 8, .	2.8	19
12	A prospective microwave plasma source for in situ spaceflight applications. Journal of Analytical Atomic Spectrometry, 2020, 35, 2740-2747.	3.0	8
13	Linear Ion Trap Mass Spectrometer (LITMS) for in situ Astrobiology. , 2019, , .		3
14	Investigating the effects of gamma radiation on selected chemicals for use in biosignature detection instruments on the surface of Jupiter's moon Europa. Planetary and Space Science, 2019, 175, 1-12.	1.7	11
15	Radiation Tolerance of Nanopore Sequencing Technology for Life Detection on Mars and Europa. Scientific Reports, 2019, 9, 5370.	3.3	23
16	The next frontier for planetary and human exploration. Nature Astronomy, 2019, 3, 116-120.	10.1	39
17	The NASA Roadmap to Ocean Worlds. Astrobiology, 2019, 19, 1-27.	3.0	209
18	Future planetary instrument capabilities made possible by micro- and nanotechnology. , 2019, , .		0

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19	IR resonance-enhanced organic detection with two-step laser desorption time-of-flight mass spectrometry. Icarus, 2018, 299, 15-21.	2.5	10
20	EMILI: Europan Molecular Indicators of Life Investigation. , 2018, , .		1
21	Searching for Traces of Life With the ExoMars Rover. , 2018, , 309-347.		14
22	Influence of trace aromatics on the chemical growth mechanisms of Titan aerosol analogues. Planetary and Space Science, 2017, 140, 27-34.	1.7	27
23	Molecular analyzer for Complex Refractory Organic-rich Surfaces (MACROS). , 2017, , .		5
24	Mars Organic Molecule Analyzer (MOMA) laser desorption/ionization source design and performance characterization. International Journal of Mass Spectrometry, 2017, 422, 177-187.	1.5	40
25	Unique capabilities of AC frequency scanning and its implementation on a Mars Organic Molecule Analyzer linear ion trap. Analyst, The, 2017, 142, 2109-2117.	3.5	5
26	Habitability on Early Mars and the Search for Biosignatures with the ExoMars Rover. Astrobiology, 2017, 17, 471-510.	3.0	371
27	The Mars Organic Molecule Analyzer (MOMA) Instrument: Characterization of Organic Material in Martian Sediments. Astrobiology, 2017, 17, 655-685.	3.0	185
28	The Characterization of Biosignatures in Caves Using an Instrument Suite. Astrobiology, 2017, 17, 1203-1218.	3.0	11
29	Advanced laser architecture for the two-step laser tandem mass spectrometer. , 2016, , .		1
30	Tandem mass spectrometry on a miniaturized laser desorption time-of-flight mass spectrometer. , 2016, , .		2
31	Excess of l-alanine in amino acids synthesized in a plasma torch generated by a hypervelocity meteorite impact reproduced in the laboratory. Planetary and Space Science, 2016, 131, 70-78.	1.7	8
32	MOMA: the challenge to search for organics and biosignatures on Mars. International Journal of Astrobiology, 2016, 15, 239-250.	1.6	52
33	Carbonization in Titan Tholins: implication for low albedo on surfaces of Centaurs and trans-Neptunian objects. International Journal of Astrobiology, 2016, 15, 231-238.	1.6	7
34	Organic molecules in the Sheepbed Mudstone, Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2015, 120, 495-514.	3.6	375
35	Analysis of aqueous environments by laser desorption/ionization time-of-flight mass spectrometry. , 2015, , .		1
36	Detection of Trace Organics in Mars Analog Samples Containing Perchlorate by Laser Desorption/Ionization Mass Spectrometry. Astrobiology, 2015, 15, 104-110.	3.0	33

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37	Design and demonstration of the Mars Organic Molecule Analyzer (MOMA) on the ExoMars 2018 rover. , 2015, , .		17
38	A compact tandem two-step laser time-of-flight mass spectrometer for in situ analysis of non-volatile organics on planetary surfaces. , 2014, , .		6
39	Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1245267.	12.6	323
40	A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1242777.	12.6	687
41	Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1243480.	12.6	508
42	Marsâ€™ Surface Radiation Environment Measured with the Mars Science Laboratoryâ€™s Curiosity Rover. Science, 2014, 343, 1244797.	12.6	475
43	In Situ Radiometric and Exposure Age Dating of the Martian Surface. Science, 2014, 343, 1247166.	12.6	224
44	Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1244734.	12.6	246
45	A comparative study of in situ biosignature detection spectroscopy techniques on planetary surfaces. , 2014, , .		1
46	X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater. Science, 2013, 341, 1238932.	12.6	327
47	Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. Science, 2013, 341, 1239505.	12.6	280
48	Abundance and Isotopic Composition of Gases in the Martian Atmosphere from the Curiosity Rover. Science, 2013, 341, 263-266.	12.6	327
49	Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. Science, 2013, 341, 1238937.	12.6	367
50	Isotope Ratios of H, C, and O in CO ₂ and H ₂ O of the Martian Atmosphere. Science, 2013, 341, 260-263.	12.6	241
51	Science Potential from a Europa Lander. Astrobiology, 2013, 13, 740-773.	3.0	98
52	Mars Organic Molecule Analyzer (MOMA) mass spectrometer for ExoMars 2018 and beyond. , 2013, , .		21
53	Coordinated analyses of Antarctic sediments as Mars analog materials using reflectance spectroscopy and current flight-like instruments for CheMin, SAM and MOMA. Icarus, 2013, 224, 309-325.	2.5	21
54	Martian Fluvial Conglomerates at Gale Crater. Science, 2013, 340, 1068-1072.	12.6	326

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55	The Petrochemistry of Jake_M: A Martian Mugearite. Science, 2013, 341, 1239463.	12.6	134
56	Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. Science, 2013, 341, 1238670.	12.6	215
57	Low Upper Limit to Methane Abundance on Mars. Science, 2013, 342, 355-357.	12.6	103
58	Evidence for perchlorates and the origin of chlorinated hydrocarbons detected by SAM at the Rocknest aeolian deposit in Gale Crater. Journal of Geophysical Research E: Planets, 2013, 118, 1955-1973.	3.6	306
59	Precision Subsampling System for Planetary Exploration. , 2012, , .		2
60	Compact twoâ€•step laser timeâ€•ofâ€•flight mass spectrometer for in situ analyses of aromatic organics on planetary missions. Rapid Communications in Mass Spectrometry, 2012, 26, 2786-2790.	1.5	42
61	Rapid assessment of high value samples: An AOTF-LDTOF spectrometer suite for planetary surfaces. , 2012, , .		8
62	The Sample Analysis at Mars Investigation and Instrument Suite. Space Science Reviews, 2012, 170, 401-478.	8.1	435
63	An AOTF-LDTOF spectrometer suite for in situ organic detection and characterization. , 2011, , .		10
64	The laser ablation ion funnel: Sampling for in situ mass spectrometry on Mars. Planetary and Space Science, 2011, 59, 387-393.	1.7	10
65	Precision Subsampling System for Mars and Beyond. , 2010, , .		2
66	Development of an evolved gas-time-of-flight mass spectrometer for the Volatile Analysis by Pyrolysis of Regolith (VAPoR) instrument. International Journal of Mass Spectrometry, 2010, 295, 124-132.	1.5	18
67	Simulation of a miniature, low-power time-of-flight mass spectrometer for in situ analysis of planetary atmospheres. Proceedings of SPIE, 2008, , .	0.8	9
68	A miniature MEMS and NEMS enabled time-of-flight mass spectrometer for investigations in planetary science. Proceedings of SPIE, 2008, , .	0.8	12
69	On the possible in situ elemental analysis of small bodies with laser ablation TOF-MS. Planetary and Space Science, 2005, 53, 817-838.	1.7	14
70	Pulsed laser ablation TOF-MS analysis of planets and small bodies. Applied Physics A: Materials Science and Processing, 2004, 79, 953-956.	2.3	13
71	Did life exist on Mars? Search for organic and inorganic signatures, one of the goals for â€œSAMâ€• (sample analysis at Mars). Advances in Space Research, 2004, 33, 2240-2245.	2.6	32
72	Possible synthesis of organic molecular ions in plasmas similar to those generated in hypervelocity Impacts. International Journal of Impact Engineering, 2003, 29, 449-458.	5.0	8

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73	Miniature time-of-flight mass spectrometers for in situ composition studies. Acta Astronautica, 2003, 52, 397-404.	3.2	22
74	Molecular synthesis in hypervelocity impact plasmas on the primitive Earth and in interstellar clouds. Geophysical Research Letters, 2003, 30, n/a-n/a.	4.0	24
75	Miniature time-of-flight mass spectrometer using a flexible circuitboard reflector. Rapid Communications in Mass Spectrometry, 2000, 14, 2408-2411.	1.5	35
76	Laser time-of-flight mass spectrometry for space. Review of Scientific Instruments, 2000, 71, 536-545.	1.3	64
77	Magnetic Ground State and its Control in Porphyrin-Based Magnets. Molecular Crystals and Liquid Crystals, 1997, 305, 321-332.	0.3	24
78	Magnetic Dipoleâ^'Dipole Interactions and Single-Ion Anisotropy:â€‰ Revisiting a Classical Approach to Magnets. Chemistry of Materials, 1997, 9, 2156-2163.	6.7	89
79	Magnetization and dynamics of reentrant ferrimagnetic spin-glass [MnTPP]::+[TCNE].â^'â‹…2PhMe. Journal of Applied Physics, 1996, 79, 6147.	2.5	31
80	Magnetization of High-T_c Molecule-Based Magnet V/TCNE/CH₂Cl₂. Molecular Crystals and Liquid Crystals, 1995, 272, 195-205.	0.3	13