Alian Wang

List of Publications by Year
in descending order

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84	6,643	76196	60497
papers	citations	40 h-index	81 g-index

85	85	85	4542
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Gammaâ€CaSO₄ With Abnormally High Stability From a Hyperarid Region on Earth and From Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	1.5	3
2	Crystallinity effects on the vibrational spectral features of saponite: Implications for characterizing variable crystalline phyllosilicates on Mars. Icarus, 2022, 379, 114951.	1.1	5
3	Mars: new insights and unresolved questions. International Journal of Astrobiology, 2021, 20, 394-426.	0.9	19
4	Thermal stability of akaganeite and its desiccation process under conditions relevant to Mars. Icarus, 2020, 336, 113435.	1.1	11
5	Quantification of fluorescence emission from extraterrestrial materials and its significance for planetary Raman spectroscopy. Journal of Raman Spectroscopy, 2020, 51, 1636-1651.	1.2	5
6	MIR, VNIR, NIR, and Raman spectra of magnesium chlorides with six hydration degrees: Implication for Mars and Europa. Journal of Raman Spectroscopy, 2020, 51, 1589-1602.	1.2	18
7	Amorphization of S, Clâ€Salts Induced by Martian Dust Activities. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006701.	1.5	8
8	Chlorine Release From Common Chlorides by Martian Dust Activity. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006283.	1.5	14
9	Subsurface Cl-bearing salts as potential contributors to recurring slope lineae (RSL) on Mars. Icarus, 2019, 333, 464-480.	1.1	24
10	Petrogenesis and Shock Metamorphism of Basaltic Lunar Meteorites Northwest Africa 4734 and 10597. Journal of Geophysical Research E: Planets, 2019, 124, 2583-2598.	1.5	12
11	Presolar silicates in the matrix and fine-grained rims around chondrules in primitive CO3.0 chondrites: Evidence for pre-accretionary aqueous alteration of the rims in the solar nebula. Geochimica Et Cosmochimica Acta, 2018, 221, 379-405.	1.6	44
12	Spectral and stratigraphic mapping of hydrated minerals associated with interior layered deposits near the southern wall of Melas Chasma, Mars. Icarus, 2018, 302, 62-79.	1.1	14
13	Forming perchlorates on Mars through plasma chemistry during dust events. Earth and Planetary Science Letters, 2018, 504, 94-105.	1.8	39
14	Dalangtan Saline Playa in a Hyperarid Region on Tibet Plateau: II. Preservation of Salts with High Hydration Degrees in Subsurface. Astrobiology, 2018, 18, 1254-1276.	1.5	15
15	Dalangtan Saline Playa in a Hyperarid Region on Tibet Plateau: I. Evolution and Environments. Astrobiology, 2018, 18, 1243-1253.	1.5	23
16	Dalangtan Saline Playa in a Hyperarid Region of Tibet Plateau: III. Correlated Multiscale Surface Mineralogy and Geochemistry Survey. Astrobiology, 2018, 18, 1277-1304.	1.5	6
17	Characterizing amorphous silicates in extraterrestrial materials: Polymerization effects on Raman and midâ€IR spectral features of alkali and alkali earth silicate glasses. Journal of Geophysical Research E: Planets, 2017, 122, 839-855.	1.5	26
18	Application of laser Raman micro-analyses to Earth and planetary materials. Journal of Asian Earth Sciences, 2017, 145, 309-333.	1.0	52

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19	Setting constraints on the nature and origin of the two major hydrous sulfates on Mars: Monohydrated and polyhydrated sulfates. Journal of Geophysical Research E: Planets, 2016, 121, 678-694.	1.5	40
20	VNIR multispectral observations of aqueous alteration materials by the Pancams on the Spirit and Opportunity Mars Exploration Rovers. American Mineralogist, 2016, 101, 2005-2019.	0.9	25
21	Spectroscopic study of perchlorates and other oxygen chlorides in a Martian environmental chamber. Earth and Planetary Science Letters, 2016, 452, 123-132.	1.8	17
22	Spatial distributions of secondary minerals in the Martian meteorite MIL 03346,168 determined by Raman spectroscopic imaging. Journal of Geophysical Research E: Planets, 2015, 120, 1141-1159.	1.5	32
23	Dehydration of Naâ€jarosite, ferricopiapite, and rhomboclase at temperatures of 50 and 95â€‰Â°C: implications for Martian ferric sulfates. Journal of Raman Spectroscopy, 2015, 46, 493-500.	1.2	14
24	Understanding the Raman spectral features of phyllosilicates. Journal of Raman Spectroscopy, 2015, 46, 829-845.	1.2	135
25	Autonomous soil analysis by the Mars Microâ€beam Raman Spectrometer (MMRS) onâ€board a rover in the Atacama Desert: a terrestrial test for planetary exploration. Journal of Raman Spectroscopy, 2015, 46, 810-821.	1.2	36
26	Raman imaging of extraterrestrial materials. Planetary and Space Science, 2015, 112, 23-34.	0.9	43
27	Silica polymorphs in lunar granite: Implications for granite petrogenesis on the Moon. American Mineralogist, 2015, 100, 1533-1543.	0.9	32
28	Detection of iron substitution in natroalunite-natrojarosite solid solutions and potential implications for Mars. American Mineralogist, 2014, 99, 948-964.	0.9	32
29	Experimental comparison of the pathways and rates of the dehydration of Al-, Fe-, Mg- and Ca-sulfates under Mars relevant conditions. Icarus, 2014, 234, 162-173.	1.1	32
30	Nature and degree of aqueous alteration in <scp>CM</scp> and <scp>CI</scp> carbonaceous chondrites. Meteoritics and Planetary Science, 2013, 48, 1618-1637.	0.7	94
31	The preservation of subsurface sulfates with mid-to-high degree of hydration in equatorial regions on Mars. Icarus, 2013, 226, 980-991.	1.1	24
32	The stability of sulfate and hydrated sulfate minerals near ambient conditions and their significance in environmental and planetary sciences. Journal of Asian Earth Sciences, 2013, 62, 734-758.	1.0	73
33	Lambert albedo retrieval and analyses over Aram Chaos from OMEGA hyperspectral imaging data. Journal of Geophysical Research, 2012, 117, .	3.3	14
34	Extraction of compositional and hydration information of sulfates from laser-induced plasma spectra recorded under Mars atmospheric conditions â€" Implications for ChemCam investigations on Curiosity rover. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2012, 68, 1-16.	1.5	58
35	Stability field and phase transition pathways of hydrous ferric sulfates in the temperature range 50Â°C to 5Â°C: Implication for martian ferric sulfates. Icarus, 2012, 218, 622-643.	1.1	26
36	A planetary environment and analysis chamber (PEACh) for coordinated Ramanâ€"LIBSâ€"IR measurements under planetary surface environmental conditions. Journal of Raman Spectroscopy, 2012, 43, 212-227.	1.2	23

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37	Ferric sulfates on Mars: A combined mission data analysis of salty soils at Gusev crater and laboratory experimental investigations. Journal of Geophysical Research, 2011, 116, .	3.3	25
38	Stability of Mg-sulfates at â˜'10Â°C and the rates of dehydration/rehydration processes under conditions relevant to Mars. Journal of Geophysical Research, 2011, 116, .	3.3	35
39	Experimental determination of the phase boundary between kornelite and pentahydrated ferric sulfate at 0.1MPa. Chemical Geology, 2011, 284, 333-338.	1.4	15
40	Mineralogy and geochemistry of four lunar soils by laser-Raman study. Icarus, 2011, 211, 101-113.	1.1	44
41	A systematic spectroscopic study of four Apollo lunar soils. Journal of Earth Science (Wuhan, China), 2011, 22, 578-585.	1.1	5
42	A comprehensive spectroscopic study of synthetic Fe²⁺, Fe³⁺, Mg²⁺ and Al³⁺ copiapite by Raman, XRD, LIBS, MIR and visâ€"NIR. Journal of Raman Spectroscopy, 2011, 42, 1120-1129.	1.2	32
43	Silica-rich deposits and hydrated minerals at Gusev Crater, Mars: Vis-NIR spectral characterization and regional mapping. Icarus, 2010, 205, 375-395.	1.1	93
44	A systematic spectroscopic study of eight hydrous ferric sulfates relevant to Mars. Icarus, 2010, 209, 422-433.	1.1	64
45	Spirit Mars Rover Mission: Overview and selected results from the northern Home Plate Winter Haven to the side of Scamander crater. Journal of Geophysical Research, 2010, 115, .	3.3	127
46	Phase transition pathways of the hydrates of magnesium sulfate in the temperature range 50Â°C to 5Â°C: Implication for sulfates on Mars. Journal of Geophysical Research, 2009, 114, .	3.3	44
47	Lightâ€toned salty soils and coexisting Siâ€rich species discovered by the Mars Exploration Rover Spirit in Columbia Hills. Journal of Geophysical Research, 2008, 113, .	3.3	108
48	Spirit Mars Rover Mission to the Columbia Hills, Gusev Crater: Mission overview and selected results from the Cumberland Ridge to Home Plate. Journal of Geophysical Research, 2008, 113, .	3.3	99
49	CHARACTERIZATION OF NATURAL FELDSPARS BY RAMAN SPECTROSCOPY FOR FUTURE PLANETARY EXPLORATION. Canadian Mineralogist, 2008, 46, 1477-1500.	0.3	279
50	Detection of Silica-Rich Deposits on Mars. Science, 2008, 320, 1063-1067.	6.0	399
51	Mineralogic constraints on sulfurâ€rich soils from Pancam spectra at Gusev crater, Mars. Geophysical Research Letters, 2007, 34, .	1.5	89
52	Characterization and petrologic interpretation of olivine-rich basalts at Gusev Crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	227
53	Overview of the Spirit Mars Exploration Rover Mission to Gusev Crater: Landing site to Backstay Rock in the Columbia Hills. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	238
54	Sulfate deposition in subsurface regolith in Gusev crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	95

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55	Evidence of phyllosilicates in Wooly Patch, an altered rock encountered at West Spur, Columbia Hills, by the Spirit rover in Gusev crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	40
56	Geochemical and mineralogical indicators for aqueous processes in the Columbia Hills of Gusev crater, Mars. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	234
57	Rocks of the Columbia Hills. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	146
58	Sulfates on Mars: A systematic Raman spectroscopic study of hydration states of magnesium sulfates. Geochimica Et Cosmochimica Acta, 2006, 70, 6118-6135.	1.6	175
59	Extracting olivine (Foâ€“Fa) compositions from Raman spectral peak positions. Geochimica Et Cosmochimica Acta, 2006, 70, 6201-6222.	1.6	215
60	Mars Exploration Rover Geologic traverse by the Spirit rover in the Plains of Gusev Crater, Mars. Geology, 2005, 33, 809.	2.0	35
61	An integrated view of the chemistry and mineralogy of martian soils. Nature, 2005, 436, 49-54.	13.7	348
62	Water alteration of rocks and soils on Mars at the Spirit rover site in Gusev crater. Nature, 2005, 436, 66-69.	13.7	240
63	Raman spectroscopy of Fe-Ti-Cr-oxides, case study: Martian meteorite EETA79001. American Mineralogist, 2004, 89, 665-680.	0.9	180
64	Wind-Related Processes Detected by the Spirit Rover at Gusev Crater, Mars. Science, 2004, 305, 810-813.	6.0	94
65	Textures of the Soils and Rocks at Gusev Crater from Spirit's Microscopic Imager. Science, 2004, 305, 824-826.	6.0	130
66	Pancam Multispectral Imaging Results from the Spirit Rover at Gusev Crater. Science, 2004, 305, 800-806.	6.0	153
67	Localization and Physical Properties Experiments Conducted by Spirit at Gusev Crater. Science, 2004, 305, 821-824.	6.0	166
68	Basaltic Rocks Analyzed by the Spirit Rover in Gusev Crater. Science, 2004, 305, 842-845.	6.0	244
69	Mineralogy of a Martian meteorite as determined by Raman spectroscopy. Journal of Raman Spectroscopy, 2004, 35, 504-514.	1.2	110
70	Basaltic rocks analyzed by the Spirit Rover in Gusev Crater. Science, 2004, 305, 842-5.	6.0	9
71	Textures of the soils and rocks at Gusev Crater from Spirit's Microscopic Imager. Science, 2004, 305, 824-6.	6.0	7
72	Development of the Mars microbeam Raman spectrometer (MMRS). Journal of Geophysical Research, 2003, 108, .	3.3	84

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73	Characterization and comparison of structural and compositional features of planetary quadrilateral pyroxenes by Raman spectroscopy. American Mineralogist, 2001, 86, 790-806.	0.9	161
74	Raman spectroscopic characterization of a highly weathered basalt: Igneous mineralogy, alteration products, and a microorganism. Journal of Geophysical Research, 1999, 104, 27067-27077.	3.3	38
75	Raman spectroscopic characterization of a Martian SNC meteorite: Zagami. Journal of Geophysical Research, 1999, 104, 8509-8519.	3.3	62
76	Prototype Raman Spectroscopic Sensor for in Situ Mineral Characterization on Planetary Surfaces. Applied Spectroscopy, 1998, 52, 477-487.	1.2	100
77	Raman spectroscopy for mineral identification and quantification for in situ planetary surface analysis: A point count method. Journal of Geophysical Research, 1997, 102, 19293-19306.	3.3	129
78	Magnesite-bearing inclusion assemblage in natural diamond. Earth and Planetary Science Letters, 1996, 141, 293-306.	1.8	121
79	Raman spectroscopy as a method for mineral identification on lunar robotic exploration missions. Journal of Geophysical Research, 1995, 100, 21189.	3.3	94
80	Database of Standard Raman Spectra of Minerals and Related Inorganic Crystals. Applied Spectroscopy, 1994, 48, 959-968.	1.2	87
81	Characterization of graphite alteration in an uranium deposit by micro-Raman spectroscopy, X-ray diffraction, transmission electron microscopy and scanning electron microscopy. Carbon, 1989, 27, 209-218.	5.4	98
82	Raman and infrared spectroscopic investigation of the cation distributions in amphiboles. Journal of Molecular Structure, 1988, 175, 183-188.	1.8	6
83	Raman Microspectroscopic Study of the Cation Distribution in Amphiboles. Applied Spectroscopy, 1988, 42, 1441-1450.	1.2	21
84	Infrared and Low-Temperature Micro-Raman Spectra of the OH Stretching Vibrations in Cummingtonite. Applied Spectroscopy, 1988, 42, 1451-1457.	1.2	9