Mathieu Choukroun

List of Publications by Year
in descending order

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84	2,456	29	47
papers	citations	h-index	g-index
		172457	214800

87	87	87	2254
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	AMBITION â€“ comet nucleus cryogenic sample return. Experimental Astronomy, 2022, 54, 1077-1128.	3.7	4
2	Discrete element modeling of planetary ice analogs: mechanical behavior upon sintering. Granular Matter, 2022, 24, 1.	2.2	2
3	Reply to the â€˜Comment on Cage occupancy of methane clathrate hydrates in the ternary H₂Oâ€“NH₃â€“CH₄ systemâ€™ by S. Alavi and J. Ripmeester, <i>Chem. Commun.</i>, 2022, 58, DOI: 10.1039/D1CC06526B. Chemical Communications, 2022, 58, 4099-4102.	4.1	1
4	The Dual-Rasp Sampling System Design with Closed Pneumatic Sample Transfer. , 2021, , .		0
5	Sampling Plume Deposits on Enceladusâ€™ Surface to Explore Ocean Materials and Search for Traces of Life or Biosignatures. Planetary Science Journal, 2021, 2, 100.	3.6	8
6	Effect of H₂S on the Near-infrared Spectrum of Irradiation Residue and Applications to the Kuiper Belt Object (486958) Arrokoth. Astrophysical Journal Letters, 2021, 914, L31.	8.3	3
7	A simple gas introduction system for cryogenic powder X-ray diffraction. Journal of Applied Crystallography, 2021, 54, 1268-1270.	4.5	2
8	Vertical compositional variations of liquid hydrocarbons in Titanâ€™s alkanofers. Astronomy and Astrophysics, 2021, 653, A80.	5.1	3
9	Specific Heat Capacity Measurements of Selected Meteorites for Planetary Surface Temperature Modeling. Journal of Geophysical Research E: Planets, 2021, 126, .	3.6	7
10	Properties and Behavior of the Acetonitrileâ€“Acetylene Co-Crystal under Titan Surface Conditions. ACS Earth and Space Chemistry, 2020, 4, 1375-1385.	2.7	13
11	Strength Evolution of Ice Plume Deposit Analogs of Enceladus and Europa. Geophysical Research Letters, 2020, 47, e2020GL088953.	4.0	10
12	Cage occupancy of methane clathrate hydrates in the ternary H2Oâ€“NH3â€“CH4 system. Chemical Communications, 2020, 56, 12391-12394.	4.1	4
13	Phase Behavior of Clathrate Hydrates in the Ternary H₂Oâ€“NH₃â€“Cyclopentane System. ACS Earth and Space Chemistry, 2020, 4, 526-534.	2.7	6
14	Probing Europa's subsurface ocean composition from surface salt minerals using in-situ techniques. Icarus, 2020, 349, 113746.	2.5	15
15	Dust-to-Gas and Refractory-to-Ice Mass Ratios of Comet 67P/Churyumov-Gerasimenko from Rosetta Observations. Space Science Reviews, 2020, 216, 1.	8.1	61
16	Rapid Formation of Clathrate Hydrate From Liquid Ethane and Water Ice on Titan. Geophysical Research Letters, 2020, 47, e2019GL086265.	4.0	19
17	Anisotropic thermal expansion of the acetyleneâ€“ammonia co-crystal under Titan's conditions. Journal of Applied Crystallography, 2020, 53, 1524-1530.	4.5	7
18	Raman Signatures and Thermal Expansivity of Acetylene Clathrate Hydrate. Journal of Physical Chemistry A, 2019, 123, 7051-7056.	2.5	7

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19	No compelling evidence for clathrate hydrate formation under interstellar medium conditions over laboratory time scales. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 14407-14408.	7.1	7
20	Sampling Tool Concepts for Enceladus Lander In-Situ Analysis. , 2019, , .		3
21	Long-term monitoring of the outgassing and composition of comet 67P/Churyumov-Gerasimenko with the Rosetta/MIRO instrument. Astronomy and Astrophysics, 2019, 630, A19.	5.1	78
22	A Co-Crystal between Acetylene and Butane: A Potentially Ubiquitous Molecular Mineral on Titan. ACS Earth and Space Chemistry, 2019, 3, 2808-2815.	2.7	19
23	The Microstructural Evolution of Water Ice in the Solar System Through Sintering. Journal of Geophysical Research E: Planets, 2019, 124, 243-277.	3.6	30
24	Insights into Europa's ocean composition derived from its surface expression. Icarus, 2019, 321, 857-865.	2.5	21
25	Low-temperature specific heat capacity measurements and application to Mars thermal modeling. Icarus, 2019, 321, 824-840.	2.5	11
26	Kinetic effect on the freezing of ammonium-sodium-carbonate-chloride brines and implications for the origin of Ceresâ€™ bright spots. Icarus, 2019, 320, 150-158.	2.5	18
27	The Acetylene-Ammonia Co-crystal on Titan. ACS Earth and Space Chemistry, 2018, 2, 366-375.	2.7	30
28	Phase Diagram of the Ternary Waterâ€“Tetrahydrofuranâ€“Ammonia System at Low Temperatures. Implications for Clathrate Hydrates and Outgassing on Titan. ACS Earth and Space Chemistry, 2018, 2, 135-146.	2.7	12
29	Prospects for mineralogy on Titan. American Mineralogist, 2018, 103, 343-349.	1.9	35
30	Titan Lakes Simulation System (TiLSS): A cryogenic experimental setup to simulate Titanâ€™s liquid hydrocarbon surfaces. Review of Scientific Instruments, 2018, 89, 124502.	1.3	0
31	Long range-Doppler Demonstration of a 95 GHz FMCW Radar. , 2018, , .		1
32	A W-band comet-jet Doppler radar prototype. , 2018, , .		3
33	A submm-wave comet explorer for water isotopic composition measurements. , 2018, , .		0
34	The science planning process on the Rosetta mission. Acta Astronautica, 2017, 133, 244-257.	3.2	22
35	Composition and Evolution of Frozen Chloride Brines under the Surface Conditions of Europa. ACS Earth and Space Chemistry, 2017, 1, 14-23.	2.7	33
36	Preferential formation of sodium salts from frozen sodium-ammonium-chloride-carbonate brines â€“ Implications for Ceresâ€™ bright spots. Planetary and Space Science, 2017, 141, 73-77.	1.7	31

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37	The Rosetta mission orbiter science overview: the comet phase. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160262.	3.4	74
38	Production of Sulfur Allotropes in Electron Irradiated Jupiter Trojans Ice Analogs. Astrophysical Journal, 2017, 846, 148.	4.5	17
39	Development and characteristics of Mechanical Porous Ambient Comet Simulants as comet surface analogs. Planetary and Space Science, 2017, 147, 6-13.	1.7	11
40	Prospects for organic minerals on Saturn's moon Titan. Acta Crystallographica Section A: Foundations and Advances, 2017, 73, C1300-C1300.	0.1	0
41	FMCW radars at 95 and 183 GHz for planetary and earth science remote sensing. , 2016, , .		1
42	A combination millimeter-wave Doppler radar and THz spectrometer for planetary science. , 2016, , .		3
43	Cryolava flow destabilization of crustal methane clathrate hydrate on Titan. Icarus, 2016, 274, 23-32.	2.5	9
44	Unexpected and significant findings in comet 67P/Churyumovâ€“Gerasimenko: an interdisciplinary view. Monthly Notices of the Royal Astronomical Society, 2016, 462, S2-S8.	4.4	53
45	ELECTRON IRRADIATION AND THERMAL PROCESSING OF MIXED-ICES OF POTENTIAL RELEVANCE TO JUPITER TROJAN ASTEROIDS. Astrophysical Journal, 2016, 820, 141.	4.5	13
46	Titanâ€™s surface at 2.18-cm wavelength imaged by the Cassini RADAR radiometer: Results and interpretations through the first ten years of observation. Icarus, 2016, 270, 443-459.	2.5	79
47	CHEMISTRY OF FROZEN SODIUMâ€“MAGNESIUMâ€“SULFATEâ€“CHLORIDE BRINES: IMPLICATIONS FOR SURFACE EXPRESSION OF EUROPAâ€™S OCEAN COMPOSITION. Astrophysical Journal Letters, 2016, 816, L26.	8.3	29
48	Chapter 9 Sample Handling and Instruments for the In Situ Exploration of Ice-Rich Planets. , 2016, , 229-270.		1
49	MIRO observations of subsurface temperatures of the nucleus of 67P/Churyumov-Gerasimenko. Astronomy and Astrophysics, 2015, 583, A29.	5.1	81
50	Spatial and diurnal variation of water outgassing on comet 67P/Churyumov-Gerasimenko observed from Rosetta/MIRO in August 2014. Astronomy and Astrophysics, 2015, 583, A5.	5.1	61
51	Distribution of water around the nucleus of comet 67P/Churyumov-Gerasimenko at 3.4 AU from the Sun as seen by the MIRO instrument on Rosetta. Astronomy and Astrophysics, 2015, 583, A3.	5.1	60
52	Dark side of comet 67P/Churyumov-Gerasimenko in Aug.â€“Oct. 2014. Astronomy and Astrophysics, 2015, 583, A28.	5.1	42
53	Subsurface properties and early activity of comet 67P/Churyumov-Gerasimenko. Science, 2015, 347, aaa0709.	12.6	217
54	Cryovolcanic Features. , 2015, , 487-494.		0

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55	Cryovolcanic Features. , 2014, , 1-10.		0
56	Experimental Study on the Effect of Ammonia on the Phase Behavior of Tetrahydrofuran Clathrates. Journal of Physical Chemistry B, 2014, 118, 13371-13377.	2.6	12
57	Ganymedex³s internal structure including thermodynamics of magnesium sulfate oceans in contact with ice. Planetary and Space Science, 2014, 96, 62-70.	1.7	121
58	Formation of a New Benzeneâ€“Ethane Co-Crystalline Structure Under Cryogenic Conditions. Journal of Physical Chemistry A, 2014, 118, 4087-4094.	2.5	23
59	Sub-millimeter observation of water vapor at 557GHz in Comet C/2002 T7 (LINEAR). Icarus, 2014, 239, 141-153.	2.5	2
60	Equilibrium composition between liquid and clathrate reservoirs on Titan. Icarus, 2014, 239, 39-45.	2.5	22
61	Experimental determination of the kinetics of formation of the benzeneâ€ethane coâ€crystal and implications for Titan. Geophysical Research Letters, 2014, 41, 5396-5401.	4.0	21
62	Reconciling main belt asteroid spectral flux density measurements with a self-consistent thermophysical model. Icarus, 2013, 226, 1086-1102.	2.5	22
63	Clathrate Hydrates: Implications for Exchange Processes in the Outer Solar System. Astrophysics and Space Science Library, 2013, , 409-454.	2.7	27
64	Phase equilibria in the H2Oâ€“CO2 system between 250â€“330K and 0â€“1.7GPa: Stability of the CO2 hydrates and H2O-ice VI at CO2 saturation. Geochimica Et Cosmochimica Acta, 2013, 119, 322-339.	3.9	49
65	The solubility of ⁴⁰Ar and ⁸⁴Kr in liquid hydrocarbons: Implications for Titan's geological evolution. Geophysical Research Letters, 2013, 40, 2935-2940.	4.0	26
66	Is Titan's shape caused by its meteorology and carbon cycle?. Geophysical Research Letters, 2012, 39, .	4.0	84
67	Measurements of thermal properties of icy Mars regolith analogs. Journal of Geophysical Research, 2012, 117, .	3.3	41
68	A HOT GAP AROUND JUPITER'S ORBIT IN THE SOLAR NEBULA. Astrophysical Journal, 2012, 748, 92.	4.5	32
69	Geophysical evolution of Saturnâ€™s satellite Phoebe, a large planetesimal in the outer Solar System. Icarus, 2012, 219, 86-109.	2.5	53
70	Concept for a new frontiers mission to Ganymede: A Planetary Science Summer School study. , 2011, , .		1
71	Phase Behaviour of Ices and Hydrates. Space Science Reviews, 2010, 153, 185-218.	8.1	98
72	Subsurface Water Oceans on Icy Satellites: Chemical Composition and Exchange Processes. Space Science Reviews, 2010, 153, 485-510.	8.1	83

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73	Stability of methane clathrate hydrates under pressure: Influence on outgassing processes of methane on Titan. Icarus, 2010, 205, 581-593.	2.5	107
74	Atmospheric control of the cooling rate of impact melts and cryolavas on Titanâ€™s surface. Icarus, 2010, 208, 887-895.	2.5	14
75	Thermodynamic data and modeling of the water and ammonia-water phase diagrams up to 2.2 GPa for planetary geophysics. Journal of Chemical Physics, 2010, 133, 144502.	3.0	59
76	Subsurface Water Oceans on Icy Satellites: Chemical Composition and Exchange Processes. Space Sciences Series of ISSI, 2010, , 483-508.	0.0	1
77	Phase Behaviour of Ices and Hydrates. Space Sciences Series of ISSI, 2010, , 183-216.	0.0	0
78	The rheology of cryovolcanic slurries: Motivation and phenomenology of methanol-water slurries with implications for Titan. Icarus, 2009, 202, 607-619.	2.5	15
79	The Origin and Evolution of Titan. , 2009, , 35-59.		25
80	Evolution of Titan and implications for its hydrocarbon cycle. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 617-631.	3.4	25
81	Thermodynamic model for water and high-pressure ices up to 2.2GPa and down to the metastable domain. Journal of Chemical Physics, 2007, 127, 124506.	3.0	93
82	Raman study of methane clathrate hydrates under pressure: new evidence for the metastability of structure II. Journal of Raman Spectroscopy, 2007, 38, 440-451.	2.5	48
83	Pressure measurements within optical cells using diamond sensors: accuracy of the method below 1ÂGPa. High Pressure Research, 2005, 25, 255-265.	1.2	13
84	Hf isotopes of MARID (mica-amphibole-rutile-ilmenite-diopside) rutile trace metasomatic processes in the lithospheric mantle. Geology, 2005, 33, 45.	4.4	62