Sergio Ioppolo

List of Publications by Year
in descending order

77 papers	3,095 citations	172457 29 h-index	161849 54 g-index
79 all docs	79 docs citations	79 times ranked	1379 citing authors

#	Article	IF	Citations
1	Hydrogenation reactions in interstellar COÂice analogues. Astronomy and Astrophysics, 2009, 505, 629-639.	5.1	343
2	Laboratory Evidence for Efficient Water Formation in Interstellar Ices. Astrophysical Journal, 2008, 686, 1474-1479.	4.5	206
3	Grain Surface Models and Data for Astrochemistry. Space Science Reviews, 2017, 212, 1-58.	8.1	177
4	H-atom addition and abstraction reactions in mixed CO, H2CO and CH3OH ices â€“ an extended view on complex organic molecule formation. Monthly Notices of the Royal Astronomical Society, 2016, 455, 1702-1712.	4.4	157
5	Experimental evidence for glycolaldehyde and ethylene glycol formation by surface hydrogenation of CO molecules under dense molecular cloud conditions. Monthly Notices of the Royal Astronomical Society, 2015, 448, 1288-1297.	4.4	138
6	Atom addition reactions in interstellar ice analogues. International Reviews in Physical Chemistry, 2015, 34, 205-237.	2.3	133
7	Water formation at low temperatures by surface O2 hydrogenation II: the reaction network. Physical Chemistry Chemical Physics, 2010, 12, 12077.	2.8	117
8	Surface formation of CO2 ice at low temperatures. Monthly Notices of the Royal Astronomical Society, 2011, 413, 2281-2287.	4.4	117
9	Water formation at low temperatures by surface O2 hydrogenation I: characterization of ice penetration. Physical Chemistry Chemical Physics, 2010, 12, 12065.	2.8	92
10	Formation of Glycerol through Hydrogenation of CO Ice under Prestellar Core Conditions. Astrophysical Journal, 2017, 842, 52.	4.5	80
11	A non-energetic mechanism for glycine formation in the interstellar medium. Nature Astronomy, 2021, 5, 197-205.	10.1	69
12	Water formation by surface O3 hydrogenation. Journal of Chemical Physics, 2011, 134, 084504.	3.0	68
13	Complementary and Emerging Techniques for Astrophysical Ices Processed in the Laboratory. Space Science Reviews, 2013, 180, 101-175.	8.1	68
14	Simultaneous hydrogenation and UV-photolysis experiments of NO in CO-rich interstellar ice analogues; linking HNCO, OCN^{âˆ’}, NH₂CHO, and NH₂OH. Monthly Notices of the Royal Astronomical Society, 2016, 460, 4297-4309.	4.4	67
15	Low-temperature surface formation of NH3 and HNCO: hydrogenation of nitrogen atoms in CO-rich interstellar ice analogues. Monthly Notices of the Royal Astronomical Society, 2015, 446, 439-448.	4.4	62
16	NO ICE HYDROGENATION: A SOLID PATHWAY TO NH ₂ OH FORMATION IN SPACE. Astrophysical Journal Letters, 2012, 750, L12.	8.3	57
17	Water formation at low temperatures by surface O2 hydrogenation III: Monte Carlo simulation. Physical Chemistry Chemical Physics, 2013, 15, 8287.	2.8	54
18	DYNAMICS OF CO IN AMORPHOUS WATER-ICE ENVIRONMENTS. Astrophysical Journal, 2014, 781, 16.	4.5	52

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19	Reactive Desorption of CO Hydrogenation Products under Cold Pre-stellar Core Conditions. Astrophysical Journal, 2018, 853, 102.	4.5	51
20	Surface formation of HCOOH at low temperature. Monthly Notices of the Royal Astronomical Society, 2011, 410, 1089-1095.	4.4	50
21	An experimental study of the surface formation of methane in interstellar molecular clouds. Nature Astronomy, 2020, 4, 781-785.	10.1	50
22	SURFRESIDE2: An ultrahigh vacuum system for the investigation of surface reaction routes of interstellar interest. Review of Scientific Instruments, 2013, 84, 073112.	1.3	49
23	Formation of interstellar solid CO₂after energetic processing of icy grain mantles. Astronomy and Astrophysics, 2009, 493, 1017-1028.	5.1	46
24	Efficient surface formation route of interstellar hydroxylamine through NO hydrogenation. II. The multilayer regime in interstellar relevant ices. Journal of Chemical Physics, 2012, 137, 054714.	3.0	41
25	Nitrogen oxides and carbon chain oxides formed after ion irradiation of CO:N₂ice mixtures. Astronomy and Astrophysics, 2012, 543, A155.	5.1	39
26	Production of complex organic molecules:H-atom addition versus UV irradiation. Monthly Notices of the Royal Astronomical Society, 0, , stx222.	4.4	39
27	Formation of interstellar methanol ice prior to the heavy CO freeze-out stage. Astronomy and Astrophysics, 2018, 612, A83.	5.1	36
28	Spectroscopic constraints on CH₃OH formation: CO mixed with CH₃OH ices towards young stellar objects. Monthly Notices of the Royal Astronomical Society, 2015, 454, 531-540.	4.4	34
29	Solid state chemistry of nitrogen oxides â€“ Part II: surface consumption of NO₂. Physical Chemistry Chemical Physics, 2014, 16, 8270-8282.	2.8	32
30	Solid state chemistry of nitrogen oxides â€“ Part I: surface consumption of NO. Physical Chemistry Chemical Physics, 2014, 16, 8257-8269.	2.8	29
31	THz and mid-IR spectroscopy of interstellar ice analogs: methyl and carboxylic acid groups. Faraday Discussions, 2014, 168, 461-484.	3.2	29
32	Formation of interstellar propanal and 1-propanol ice: a pathway involving solid-state CO hydrogenation. Astronomy and Astrophysics, 2019, 627, A1.	5.1	29
33	Formation of complex molecules in translucent clouds: acetaldehyde, vinyl alcohol, ketene, and ethanol via â€œnonenergeticâ€•processing of C₂H₂ice. Astronomy and Astrophysics, 2020, 635, A199.	5.1	29
34	The structure and dynamics of carbon dioxide and water containing ices investigated via THz and mid-IR spectroscopy. Physical Chemistry Chemical Physics, 2014, 16, 3442.	2.8	25
35	Solid CO₂in low-mass young stellar objects. Astronomy and Astrophysics, 2013, 554, A34.	5.1	24
36	Relevance of the H₂â€‰+â€‰O reaction pathway for the surface formation of interstellar water. Astronomy and Astrophysics, 2014, 570, A57.	5.1	23

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37	Sulfur Ice Astrochemistry: A Review of Laboratory Studies. Space Science Reviews, 2021, 217, 1.	8.1	22
38	Electron irradiation and thermal chemistry studies of interstellar and planetary ice analogues at the ICA astrochemistry facility. European Physical Journal D, 2021, 75, 1.	1.3	21
39	Surface formation routes of interstellar molecules: hydrogenation reactions in simple ices. Rendiconti Lincei, 2011, 22, 211.	2.2	19
40	Thermal H/D exchange in polar ice â€“ deuteron scrambling in space. Monthly Notices of the Royal Astronomical Society, 2015, 448, 3820-3828.	4.4	19
41	H₂chemistry in interstellar ices: the case of CO ice hydrogenation in UV irradiated CO:H₂ice mixtures. Astronomy and Astrophysics, 2018, 617, A87.	5.1	17
42	A cryogenic ice setup to simulate carbon atom reactions in interstellar ices. Review of Scientific Instruments, 2020, 91, 054501.	1.3	17
43	Deuterium enrichment of ammonia produced by surface N+H/D addition reactions at low temperature. Monthly Notices of the Royal Astronomical Society, 2015, 446, 449-458.	4.4	15
44	Importance of tunneling in H-abstraction reactions by OH radicals. Astronomy and Astrophysics, 2017, 599, A132.	5.1	15
45	The Ice Chamber for Astrophysicsâ€“Astrochemistry (ICA): A new experimental facility for ion impact studies of astrophysical ice analogs. Review of Scientific Instruments, 2021, 92, 084501.	1.3	15
46	First Experimental Confirmation of the CH₃O + H₂CO â†’ CH₃OH + HCO Reaction: Expanding the CH₃OH Formation Mechanism in Interstellar Ices. Astrophysical Journal Letters, 2022, 931, L33.	8.3	15
47	The influence of temperature on the synthesis of molecules on icy grain mantles in dense molecular clouds. Astronomy and Astrophysics, 2011, 528, A118.	5.1	14
48	Extension of the HCOOH and CO₂ solid-state reaction network during the CO freeze-out stage: inclusion of H₂CO. Astronomy and Astrophysics, 2019, 626, A118.	5.1	14
49	Vacuum ultraviolet photoabsorption spectroscopy of space-related ices: formation and destruction of solid carbonic acid upon 1 keV electron irradiation. Astronomy and Astrophysics, 2021, 646, A172.	5.1	14
50	Searches for Interstellar HCCSH and H₂CCS. Astrophysical Journal, 2019, 883, 201.	4.5	13
51	Alcohols on the Rocks: Solid-State Formation in a H₃CCâ‰¡CH + OH Cocktail under Dark Cloud Conditions. ACS Earth and Space Chemistry, 2019, 3, 986-999.	2.7	13
52	Hydrogenation of Accreting C Atoms and CO Moleculesâ€“Simulating Ketene and Acetaldehyde Formation Under Dark and Translucent Cloud Conditions. Astrophysical Journal, 2022, 924, 110.	4.5	13
53	THz time-domain spectroscopy of mixed CO2â€“CH3OH interstellar ice analogs. Physical Chemistry Chemical Physics, 2016, 18, 20199-20207.	2.8	12
54	Infrared Resonant Vibrationally Induced Restructuring of Amorphous Solid Water. Journal of Physical Chemistry C, 2020, 124, 20864-20873.	3.1	12

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55	Vacuum ultraviolet photoabsorption spectroscopy of space-related ices: 1 keV electron irradiation of nitrogen- and oxygen-rich ices. Astronomy and Astrophysics, 2020, 641, A154.	5.1	11
56	Solid State Pathways towards Molecular Complexity in Space. Proceedings of the International Astronomical Union, 2011, 7, 390-404.	0.0	10
57	Mid-IR and VUV spectroscopic characterisation of thermally processed and electron irradiated CO2 astrophysical ice analogues. Journal of Molecular Spectroscopy, 2022, 385, 111599.	1.2	9
58	Solid CO₂ in quiescent dense molecular clouds. Astronomy and Astrophysics, 2017, 608, A12.	5.1	8
59	The Role of Terahertz and Far-IR Spectroscopy in Understanding the Formation and Evolution of Interstellar Prebiotic Molecules. Frontiers in Astronomy and Space Sciences, 2021, 8, .	2.8	8
60	Laboratory experiments on the radiation astrochemistry of water ice phases. European Physical Journal D, 2022, 76, .	1.3	8
61	Methoxymethanol formation starting from CO hydrogenation. Astronomy and Astrophysics, 2022, 659, A65.	5.1	7
62	Comparative electron irradiations of amorphous and crystalline astrophysical ice analogues. Physical Chemistry Chemical Physics, 2022, 24, 10974-10984.	2.8	7
63	Systematic investigation of CO₂â€‰:â€‰NH₃ ice mixtures using mid-IR and VUV spectroscopy â€“ part 1: thermal processing. RSC Advances, 2020, 10, 37515-37528.	3.6	6
64	Systematic Study on the Absorption Features of Interstellar Ices in the Presence of Impurities. ACS Earth and Space Chemistry, 2020, 4, 920-946.	2.7	6
65	Infrared free-electron laser irradiation of carbon dioxide ice. Journal of Molecular Spectroscopy, 2022, 385, 111601.	1.2	6
66	Low-temperature chemistry between water and hydroxyl radicals: H/D isotopic effects. Monthly Notices of the Royal Astronomical Society, 2016, 455, 634-641.	4.4	5
67	IRFEL Selective Irradiation of Amorphous Solid Water: from Dangling to Bulk Modes. Journal of Physical Chemistry A, 2022, 126, 2262-2269.	2.5	4
68	On the origin of molecular oxygen on the surface of Ganymede. Icarus, 2022, 383, 115074.	2.5	3
69	Nanoscale structure of amorphous solid water: What determines the porosity in ASW?. Proceedings of the International Astronomical Union, 2019, 15, 368-369.	0.0	2
70	Systematic investigation of CO₂ : NH₃ ice mixtures using mid-IR and VUV spectroscopy â€“ part 2: electron irradiation and thermal processing. RSC Advances, 2021, 11, 33055-33069.	3.6	2
71	Formation of alcohols on ice surfaces. Proceedings of the International Astronomical Union, 2008, 4, 377-382.	0.0	0
72	Highlights from Faraday Discussion 168: Astrochemistry of Dust, Ice and Gas, Leiden, The Netherlands, April 2014. Chemical Communications, 2014, 50, 13636-13644.	4.1	0

#	Article	IF	Citations
73	H₂ photochemistry in interstellar ices:The formation of HCO in UV irradiated CO:H₂ ice mixtures. Proceedings of the International Astronomical Union, 2019, 15, 404-405.	0.0	0
74	Synthesis of solid-state complex organic molecules through accretion of simple species at low temperatures. Proceedings of the International Astronomical Union, 2019, 15, 46-50.	0.0	0
75	THz TIME-DOMAIN SPECTROSCOPY OF COMPLEX INTERSTELLAR ICE ANALOGS. , 2014, , .		0
76	TIME-DOMAIN TERAHERTZ SPECTROSCOPY (0.3Â-Â7.5ÂTHz) OF MOLECULAR ICES OF SIMPLE ALCOHOLS. , 2014, , .		0
77	UNTANGLING MOLECULAR SIGNALS OF ASTROCHEMICAL ICES IN THE THz: DISTINGUISHING AMORPHOUS, CRYSTALLINE, AND INTRAMOLECULAR MODES WITH BROADBAND THz SPECTROSCOPY. , 2015, , .		0