

Akira Kouchi

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/2631674/publications.pdf>

Version: 2024-02-01

63
papers

3,445
citations

159585

30
h-index

138484

58
g-index

63
all docs

63
docs citations

63
times ranked

1704
citing authors

#	ARTICLE	IF	CITATIONS
1	Diffusion Activation Energy and Desorption Activation Energy for Astrochemically Relevant Species on Water Ice Show No Clear Relation. <i>Astrophysical Journal Letters</i> , 2022, 933, L16.	8.3	11
2	Penetration of Nonenergetic Hydrogen Atoms into Amorphous Solid Water and their Reaction with Embedded Benzene and Naphthalene. <i>Astrophysical Journal</i> , 2022, 933, 138.	4.5	2
3	Rapid Ortho-to-para Nuclear Spin Conversion of H ₂ on a Silicate Dust Surface. <i>Astrophysical Journal</i> , 2021, 908, 234.	4.5	11
4	Formation of chiral CO polyhedral crystals on icy interstellar grains. <i>Monthly Notices of the Royal Astronomical Society</i> , 2021, 505, 1530-1542.	4.4	13
5	Transmission Electron Microscopy Study of the Morphology of Ices Composed of H ₂ O, CO ₂ , and CO on Refractory Grains. <i>Astrophysical Journal</i> , 2021, 918, 45.	4.5	27
6	Experimental and Computational Studies on the Physicochemical Behavior of Phosphine Induced by Reactions with H and D Atoms on Interstellar Ice Grains. <i>Astrophysical Journal</i> , 2021, 918, 73.	4.5	9
7	Delivery of Electrons by Proton-Hole Transfer in Ice at 10 K: Role of Surface OH Radicals. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 704-710.	4.6	6
8	Efficient Formation Pathway of Methyl Formate: The Role of OH Radicals on Ice Dust. <i>Astrophysical Journal Letters</i> , 2021, 921, L13.	8.3	11
9	Successive H-atom Addition to Solid OCS on Compact Amorphous Solid Water. <i>Astrophysical Journal</i> , 2021, 922, 146.	4.5	10
10	Measurements of Ortho-to-para Nuclear Spin Conversion of H ₂ on Low-temperature Carbonaceous Grain Analogs: Diamond-like Carbon and Graphite. <i>Astrophysical Journal</i> , 2021, 923, 71.	4.5	5
11	UV-Induced Formation of Ice XI Observed Using an Ultra-High Vacuum Cryogenic Transmission Electron Microscope and its Implications for Planetary Science. <i>Frontiers in Chemistry</i> , 2021, 9, 799851.	3.6	7
12	UV-ray irradiation never causes amorphization of crystalline CO ₂ : A transmission electron microscopy study. <i>Chemical Physics Letters</i> , 2020, 760, 137999.	2.6	10
13	Photostimulated desorption of OH radicals from amorphous solid water: Evidence for the interaction of visible light with an OH-ice complex. <i>Physical Review A</i> , 2020, 102, .	2.5	15
14	Precometary organic matter: A hidden reservoir of water inside the snow line. <i>Scientific Reports</i> , 2020, 10, 7755.	3.3	16
15	Direct Measurements of Activation Energies for Surface Diffusion of CO and CO ₂ on Amorphous Solid Water Using In Situ Transmission Electron Microscopy. <i>Astrophysical Journal Letters</i> , 2020, 891, L22.	8.3	22
16	Diffusive Hydrogenation Reactions of CO Embedded in Amorphous Solid Water at Elevated Temperatures $\hat{a}^{\sim}1470$ K. <i>Astrophysical Journal</i> , 2020, 900, 187.	4.5	9
17	An Experimental Study of Chemical Desorption for Phosphine in Interstellar Ice. <i>Astrophysical Journal Letters</i> , 2020, 898, L52.	8.3	16
18	Nucleobase synthesis in interstellar ices. <i>Nature Communications</i> , 2019, 10, 4413.	12.8	65

#	ARTICLE	IF	CITATIONS
19	Interactions of Atomic and Molecular Hydrogen with a Diamond-like Carbon Surface: H ₂ Formation and Desorption. <i>Astrophysical Journal</i> , 2019, 878, 23.	4.5	11
20	Physico-chemical Behavior of Hydrogen Sulfide Induced by Reactions with H and D Atoms on Different Types of Ice Surfaces at Low Temperature. <i>Astrophysical Journal</i> , 2019, 874, 124.	4.5	13
21	Molecular and isotopic compositions of nitrogen-containing organic molecules formed during UV-irradiation of simulated interstellar ice. <i>Geochemical Journal</i> , 2019, 53, 5-20.	1.0	6
22	An infrared measurement of chemical desorption from interstellar ice analogues. <i>Nature Astronomy</i> , 2018, 2, 228-232.	10.1	59
23	Liquid-like behavior of UV-irradiated interstellar ice analog at low temperatures. <i>Science Advances</i> , 2017, 3, eaao2538.	10.3	32
24	Evolution of Morphological and Physical Properties of Laboratory Interstellar Organic Residues with Ultraviolet Irradiation. <i>Astrophysical Journal</i> , 2017, 837, 35.	4.5	17
25	Deuterium Fractionation upon the Formation of Hexamethylenetetramines through Photochemical Reactions of Interstellar Ice Analogs Containing Deuterated Methanol Isotopologues. <i>Astrophysical Journal</i> , 2017, 849, 122.	4.5	13
26	DEUTERIUM FRACTIONATION DURING AMINO ACID FORMATION BY PHOTOLYSIS OF INTERSTELLAR ICE ANALOGS CONTAINING DEUTERATED METHANOL. <i>Astrophysical Journal Letters</i> , 2016, 827, L18.	8.3	26
27	Hydrogen-deuterium substitution in solid ethanol by surface reactions at low temperatures. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 462, 689-695.	4.4	9
28	Surface Temperature Dependence of Hydrogen Ortho-Para Conversion on Amorphous Solid Water. <i>Physical Review Letters</i> , 2016, 116, 253201.	7.8	25
29	Matrix sublimation method for the formation of high-density amorphous ice. <i>Chemical Physics Letters</i> , 2016, 658, 287-292.	2.6	20
30	Statistical ortho-to-para ratio of water desorbed from ice at 10 kelvin. <i>Science</i> , 2016, 351, 65-67.	12.6	61
31	Signatures of Quantum-Tunneling Diffusion of Hydrogen Atoms on Water Ice at 10ÅK. <i>Physical Review Letters</i> , 2015, 115, 133201.	7.8	47
32	Quantum tunneling observed without its characteristic large kinetic isotope effects. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 7438-7443.	7.1	25
33	Reaction kinetics and isotope effect of water formation by the surface reaction of solid H ₂ O ₂ with H atoms at low temperatures. <i>Faraday Discussions</i> , 2014, 168, 185.	3.2	29
34	Hydrogen isotopic substitution of solid methylamine through atomic surface reactions at low temperatures: A potential contribution to the D/H ratio of methylamine in molecular clouds. <i>Meteoritics and Planetary Science</i> , 2014, 49, 117-132.	1.6	15
35	THE MECHANISM OF SURFACE DIFFUSION OF H AND D ATOMS ON AMORPHOUS SOLID WATER: EXISTENCE OF VARIOUS POTENTIAL SITES. <i>Astrophysical Journal</i> , 2012, 757, 185.	4.5	75
36	WATER FORMATION THROUGH A QUANTUM TUNNELING SURFACE REACTION, OH + H ₂ , AT 10 K. <i>Astrophysical Journal</i> , 2012, 749, 67.	4.5	97

#	ARTICLE	IF	CITATIONS
37	Experimental studies of surface reactions among OH radicals that yield H ₂ O and CO ₂ at 40–60 K. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 15792.	2.8	39
38	FTIR study of ammonia formation via the successive hydrogenation of N atoms trapped in a solid N ₂ matrix at low temperatures. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 15798.	2.8	36
39	DIRECT MEASUREMENTS OF HYDROGEN ATOM DIFFUSION AND THE SPIN TEMPERATURE OF NASCENT H ₂ MOLECULE ON AMORPHOUS SOLID WATER. <i>Astrophysical Journal Letters</i> , 2010, 714, L233-L237.	8.3	98
40	EXPERIMENTAL STUDY OF CO ₂ FORMATION BY SURFACE REACTIONS OF NON-ENERGETIC OH RADICALS WITH CO MOLECULES. <i>Astrophysical Journal Letters</i> , 2010, 712, L174-L178.	8.3	92
41	REACTION ROUTES IN THE CO-H ₂ -CO-D _n -CH ₃ -OH-D _m SYSTEM CLARIFIED FROM H(D) EXPOSURE OF SOLID FORMALDEHYDE AT LOW TEMPERATURES. <i>Astrophysical Journal</i> , 2009, 702, 291-300.	4.5	89
42	FORMATION OF COMPACT AMORPHOUS H ₂ O ICE BY CODEPOSITION OF HYDROGEN ATOMS WITH OXYGEN MOLECULES ON GRAIN SURFACES. <i>Astrophysical Journal</i> , 2009, 701, 464-470.	4.5	115
43	Ice surface reactions: A key to chemical evolution in space. <i>Progress in Surface Science</i> , 2008, 83, 439-489.	8.3	185
44	Formation of hydrogen peroxide and water from the reaction of cold hydrogen atoms with solid oxygen at 10K. <i>Chemical Physics Letters</i> , 2008, 456, 27-30.	2.6	158
45	Temperature, composition, and hydrogen isotope effect in the hydrogenation of CO on amorphous ice surface at 10–20K. <i>Journal of Chemical Physics</i> , 2007, 126, 204707.	3.0	67
46	Laboratory Simulation of Competition between Hydrogenation and Photolysis in the Chemical Evolution of H ₂ -CO Ice Mixtures. <i>Astrophysical Journal</i> , 2007, 668, 1001-1011.	4.5	79
47	Effective Rate Constants for the Surface Reaction between Solid Methanol and Deuterium Atoms at 10 K. <i>Journal of Physical Chemistry A</i> , 2007, 111, 3016-3028.	2.5	59
48	Dependence of the effective rate constants for the hydrogenation of CO on the temperature and composition of the surface. <i>Planetary and Space Science</i> , 2006, 54, 1107-1114.	1.7	46
49	H-D Substitution in Interstellar Solid Methanol: A Key Route for D Enrichment. <i>Astrophysical Journal</i> , 2005, 624, L29-L32.	4.5	92
50	Novel Routes for Diamond Formation in Interstellar Ices and Meteoritic Parent Bodies. <i>Astrophysical Journal</i> , 2005, 626, L129-L132.	4.5	40
51	The role of interstellar organic materials in the formation and evolution of asteroids and meteorites. <i>Gansekai Kobutsu Kagaku</i> , 2005, 34, 114-126.	0.1	0
52	Hydrogenation of CO on Pure Solid CO and CO-H ₂ O Mixed Ice. <i>Astrophysical Journal</i> , 2004, 616, 638-642.	4.5	176
53	Conversion of H ₂ CO to CH ₃ OH by Reactions of Cold Atomic Hydrogen on Ice Surfaces below 20 K. <i>Astrophysical Journal</i> , 2004, 614, 1124-1131.	4.5	107
54	The Dependence of H ₂ CO and CH ₃ OH Formation on the Temperature and Thickness of H ₂ O-CO Ice during the Successive Hydrogenation of CO. <i>Astrophysical Journal</i> , 2003, 588, L121-L124.	4.5	149

#	ARTICLE	IF	CITATIONS
55	Evaporation of Interstellar Organic Materials in the Solar Nebula. <i>Astrophysical Journal</i> , 2003, 592, 1252-1262.	4.5	32
56	Alteration of interstellar organic materials in meteorites' parent bodies. <i>Proceedings of the Japan Academy Series B: Physical and Biological Sciences</i> , 2002, 78, 277-281.	3.8	19
57	Rapid Growth of Asteroids Owing to Very Sticky Interstellar Organic Grains. <i>Astrophysical Journal</i> , 2002, 566, L121-L124.	4.5	63
58	Efficient Formation of Formaldehyde and Methanol by the Addition of Hydrogen Atoms to CO in H ₂ O-CO Ice at 10 K. <i>Astrophysical Journal</i> , 2002, 571, L173-L176.	4.5	443
59	The role of sticky interstellar organic material in the formation of asteroids. <i>Meteoritics and Planetary Science</i> , 2002, 37, 1975-1983.	1.6	23
60	Interstellar dust, chirality, comets and the origins of life: Life from dead stars?. <i>Journal of Biological Physics</i> , 1995, 20, 61-70.	1.5	68
61	Amorphization of cubic ice by ultraviolet irradiation. <i>Nature</i> , 1990, 344, 134-135.	27.8	135
62	Evaporation of H ₂ O-CO ice and its astrophysical implications. <i>Journal of Crystal Growth</i> , 1990, 99, 1220-1226.	1.5	93
63	Vapour pressure of amorphous H ₂ O ice and its astrophysical implications. <i>Nature</i> , 1987, 330, 550-552.	27.8	97