Matti P Rissanen

List of Publications by Year
in descending order

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89 papers	8,514 citations	71102 41 h-index	48315 88 g-index
133 all docs	133 docs citations	133 times ranked	4540 citing authors

#	Article	IF	Citations
1	A large source of low-volatility secondary organic aerosol. Nature, 2014, 506, 476-479.	27.8	1,448
2	Molecular understanding of sulphuric acidâ€“amine particle nucleation in the atmosphere. Nature, 2013, 502, 359-363.	27.8	774
3	The role of low-volatility organic compounds in initial particle growth in the atmosphere. Nature, 2016, 533, 527-531.	27.8	540
4	Ion-induced nucleation of pure biogenic particles. Nature, 2016, 533, 521-526.	27.8	528
5	Highly Oxygenated Organic Molecules (HOM) from Gas-Phase Autoxidation Involving Peroxy Radicals: A Key Contributor to Atmospheric Aerosol. Chemical Reviews, 2019, 119, 3472-3509.	47.7	460
6	Global atmospheric particle formation from CERN CLOUD measurements. Science, 2016, 354, 1119-1124.	12.6	289
7	Molecular-scale evidence of aerosol particle formation via sequential addition of HIO3. Nature, 2016, 537, 532-534.	27.8	237
8	The Formation of Highly Oxidized Multifunctional Products in the Ozonolysis of Cyclohexene. Journal of the American Chemical Society, 2014, 136, 15596-15606.	13.7	236
9	Neutral molecular cluster formation of sulfuric acidâ€“dimethylamine observed in real time under atmospheric conditions. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15019-15024.	7.1	208
10	Causes and importance of new particle formation in the presentâ€•day and preindustrial atmospheres. Journal of Geophysical Research D: Atmospheres, 2017, 122, 8739-8760.	3.3	198
11	Rapid growth of new atmospheric particles by nitric acid and ammonia condensation. Nature, 2020, 581, 184-189.	27.8	169
12	Multicomponent new particle formation from sulfuric acid, ammonia, and biogenic vapors. Science Advances, 2018, 4, eaau5363.	10.3	164
13	Formation of highly oxidized multifunctional compounds: autoxidation of peroxy radicals formed in the ozonolysis of alkenes â€“ deduced from structureâ€“product relationships. Atmospheric Chemistry and Physics, 2015, 15, 6745-6765.	4.9	162
14	Source characterization of highly oxidized multifunctional compounds in a boreal forest environment using positive matrix factorization. Atmospheric Chemistry and Physics, 2016, 16, 12715-12731.	4.9	118
15	Rapid growth of organic aerosol nanoparticles over a wide tropospheric temperature range. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 9122-9127.	7.1	118
16	The effect of acidâ€“base clustering and ions on the growth of atmospheric nano-particles. Nature Communications, 2016, 7, 11594.	12.8	116
17	Reduced anthropogenic aerosol radiative forcing caused by biogenic new particle formation. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 12053-12058.	7.1	107
18	Effects of Chemical Complexity on the Autoxidation Mechanisms of Endocyclic Alkene Ozonolysis Products: From Methylcyclohexenes toward Understanding Î±-Pinene. Journal of Physical Chemistry A, 2015, 119, 4633-4650.	2.5	101

#	ARTICLE	IF	CITATIONS
19	Modeling the Charging of Highly Oxidized Cyclohexene Ozonolysis Products Using Nitrate-Based Chemical Ionization. Journal of Physical Chemistry A, 2015, 119, 6339-6345.	2.5	99
20	Î±-Pinene Autoxidation Products May Not Have Extremely Low Saturation Vapor Pressures Despite High O:C Ratios. Journal of Physical Chemistry A, 2016, 120, 2569-2582.	2.5	95
21	Reactivity of stabilized Criegee intermediates (sCIs) from isoprene and monoterpene ozonolysis toward SO&lt;sub&gt;2&lt;/sub&gt; and organic acids. Atmospheric Chemistry and Physics, 2014, 14, 12143-12153.	4.9	94
22	Role of iodine oxoacids in atmospheric aerosol nucleation. Science, 2021, 371, 589-595.	12.6	94
23	New particle formation in the sulfuric acidâ€“dimethylamineâ€“water system: reevaluation of CLOUD chamber measurements and comparison to an aerosol nucleation and growth model. Atmospheric Chemistry and Physics, 2018, 18, 845-863.	4.9	92
24	The role of highly oxygenated organic molecules in the Boreal aerosol-cloud-climate system. Nature Communications, 2019, 10, 4370.	12.8	91
25	Computational Study of Hydrogen Shifts and Ring-Opening Mechanisms in Î±-Pinene Ozonolysis Products. Journal of Physical Chemistry A, 2015, 119, 11366-11375.	2.5	89
26	Multi-generation OH oxidation as a source for highly oxygenated organic molecules from aromatics. Atmospheric Chemistry and Physics, 2020, 20, 515-537.	4.9	78
27	Sub-3 nm particle size and composition dependent response of a nano-CPC battery. Atmospheric Measurement Techniques, 2014, 7, 689-700.	3.1	73
28	Experimental particle formation rates spanning tropospheric sulfuric acid and ammonia abundances, ion production rates, and temperatures. Journal of Geophysical Research D: Atmospheres, 2016, 121, 12,377.	3.3	71
29	Ambient observations of dimers from terpene oxidation in the gas phase: Implications for new particle formation and growth. Geophysical Research Letters, 2017, 44, 2958-2966.	4.0	71
30	Molecular understanding of new-particle formation from &lt;i&gt;Î±&lt;/i&gt;-pinene between âˆ’50 and +25â€‰Â°C. Atmospheric Chemistry and Physics, 2020, 20, 9183-9207.	4.9	68
31	The role of highly oxygenated moleculesÂ (HOMs) in determining the composition of ambient ions in the boreal forest. Atmospheric Chemistry and Physics, 2017, 17, 13819-13831.	4.9	66
32	Photo-oxidation of Aromatic Hydrocarbons Produces Low-Volatility Organic Compounds. Environmental Science & Technology, 2020, 54, 7911-7921.	10.0	66
33	Size-dependent influence of NO _x on the growth rates of organic aerosol particles. Science Advances, 2020, 6, eaay4945.	10.3	61
34	Enhanced growth rate of atmospheric particles from sulfuric acid. Atmospheric Chemistry and Physics, 2020, 20, 7359-7372.	4.9	58
35	Influence of temperature on the molecular composition of ions and charged clusters during pure biogenic nucleation. Atmospheric Chemistry and Physics, 2018, 18, 65-79.	4.9	56
36	CH₂NH₂ + O₂ and CH₃CHNH₂ + O₂ Reaction Kinetics: Photoionization Mass Spectrometry Experiments and Master Equation Calculations. Journal of Physical Chemistry A, 2014, 118, 2176-2186.	2.5	52

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37	Insight into Acidâ€“Base Nucleation Experiments by Comparison of the Chemical Composition of Positive, Negative, and Neutral Clusters. Environmental Science & Technology, 2014, 48, 13675-13684.	10.0	51
38	The role of ions in new particle formation in the CLOUD chamber. Atmospheric Chemistry and Physics, 2017, 17, 15181-15197.	4.9	50
39	Molecular understanding of the suppression of new-particle formation by isoprene. Atmospheric Chemistry and Physics, 2020, 20, 11809-11821.	4.9	49
40	Molecular mechanism for rapid autoxidation in Î±-pinene ozonolysis. Nature Communications, 2021, 12, 878.	12.8	47
41	Computational Comparison of Different Reagent Ions in the Chemical Ionization of Oxidized Multifunctional Compounds. Journal of Physical Chemistry A, 2018, 122, 269-279.	2.5	43
42	How well can we predict cluster fragmentation inside a mass spectrometer?. Chemical Communications, 2019, 55, 5946-5949.	4.1	43
43	The driving factors of new particle formation and growth in the polluted boundary layer. Atmospheric Chemistry and Physics, 2021, 21, 14275-14291.	4.9	38
44	Chemical transformations in monoterpene-derived organic aerosol enhanced by inorganic composition. Npj Climate and Atmospheric Science, 2019, 2, .	6.8	36
45	NO₂ Suppression of Autoxidationâ€“Inhibition of Gas-Phase Highly Oxidized Dimer Product Formation. ACS Earth and Space Chemistry, 2018, 2, 1211-1219.	2.7	35
46	Unprecedented Ambient Sulfur Trioxide (SO₃) Detection: Possible Formation Mechanism and Atmospheric Implications. Environmental Science and Technology Letters, 2020, 7, 809-818.	8.7	34
47	Efficient alkane oxidation under combustion engine and atmospheric conditions. Communications Chemistry, 2021, 4, .	4.5	33
48	Molecular Composition and Volatility of Nucleated Particles from Î±-Pinene Oxidation between âˆ’50 Â°C and +25 Â°C. Environmental Science & Technology, 2019, 53, 12357-12365.	10.0	32
49	Computational and Experimental Investigation of the Detection of HO₂ Radical and the Products of Its Reaction with Cyclohexene Ozonolysis Derived RO₂ Radicals by an Iodide-Based Chemical Ionization Mass Spectrometer. Journal of Physical Chemistry A, 2017, 121, 6778-6789.	2.5	31
50	Evidence for Diverse Biogeochemical Drivers of Boreal Forest New Particle Formation. Geophysical Research Letters, 2018, 45, 2038-2046.	4.0	31
51	Bisulfate â€“ cluster based atmospheric pressure chemical ionization mass spectrometer for high-sensitivity (&lt; 100 ppqV) detection of atmospheric dimethyl amine: proof-of-concept and first ambient data from boreal forest. Atmospheric Measurement Techniques, 2015, 8, 4001-4011.	3.1	30
52	Hygroscopicity of nanoparticles produced from homogeneous nucleation in the CLOUD experiments. Atmospheric Chemistry and Physics, 2016, 16, 293-304.	4.9	29
53	Modeling the role of highly oxidized multifunctional organicÂmolecules for the growth of new particles overÂtheÂborealÂforestÂregion. Atmospheric Chemistry and Physics, 2017, 17, 8887-8901.	4.9	29
54	Modelling studies of HOMs and their contributions to new particle formation and growth: comparison of boreal forest in Finland and a polluted environment in China. Atmospheric Chemistry and Physics, 2018, 18, 11779-11791.	4.9	29

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55	Structures and reactivity of peroxy radicals and dimeric products revealed by online tandem mass spectrometry. Nature Communications, 2021, 12, 300.	12.8	28
56	Computational Comparison of Acetate and Nitrate Chemical Ionization of Highly Oxidized Cyclohexene Ozonolysis Intermediates and Products. Journal of Physical Chemistry A, 2017, 121, 2172-2179.	2.5	25
57	Unexpectedly acidic nanoparticles formed in dimethylamineâ€"ammoniaâ€"sulfuric-acid nucleation experiments at CLOUD. Atmospheric Chemistry and Physics, 2016, 16, 13601-13618.	4.9	24
58	Multi-scheme chemical ionization inlet (MION) for fast switching of reagent ion chemistry in atmospheric pressure chemical ionization mass spectrometry (CIMS) applications. Atmospheric Measurement Techniques, 2019, 12, 6635-6646.	3.1	24
59	Kinetics of the Reactions of Chlorinated Methyl Radicals (CH2Cl, CHCl2, and CCl3) with NO2in the Temperature Range 220âˆ'360 K. Journal of Physical Chemistry A, 2005, 109, 5376-5381.	2.5	21
60	Unimolecular HO₂ Loss from Peroxy Radicals Formed in Autoxidation Is Unlikely under Atmospheric Conditions. Journal of Physical Chemistry A, 2016, 120, 3588-3595.	2.5	21
61	Theoretical kinetic study of the formic acid catalyzed Criegee intermediate isomerization: multistructural anharmonicity and atmospheric implications. Physical Chemistry Chemical Physics, 2018, 20, 10806-10814.	2.8	21
62	Measurementâ€"model comparison of stabilized Criegee intermediateÂand highly oxygenated molecule productionÂinÂtheÂCLOUDÂchamber. Atmospheric Chemistry and Physics, 2018, 18, 2363-2380.	4.9	21
63	Kinetic (T = 201â€"298 K) and Equilibrium (T = 320â€"420 K) Measurements of the C3H5 + O2 â‡† C3H5O2 Reaction. Journal of Physical Chemistry A, 2012, 116, 3969-3978.	2.5	19
64	Computational Investigation of RO₂ + HO₂ and RO₂ + RO₂ Reactions of Monoterpene Derived First-Generation Peroxy Radicals Leading to Radical Recycling. Journal of Physical Chemistry A, 2018, 122, 9542-9552.	2.5	19
65	Boreal forest BVOC exchange: emissions versus in-canopy sinks. Atmospheric Chemistry and Physics, 2017, 17, 14309-14332.	4.9	18
66	Determination of the collision rate coefficient between charged iodic acid clusters and iodic acid using the appearance time method. Aerosol Science and Technology, 2021, 55, 231-242.	3.1	18
67	Elemental composition and clustering behaviour of Î±-pinene oxidation products for different oxidation conditions. Atmospheric Chemistry and Physics, 2015, 15, 4145-4159.	4.9	17
68	Effect of dimethylamine on the gas phase sulfuric acid concentration measured by Chemical Ionization Mass Spectrometry. Journal of Geophysical Research D: Atmospheres, 2016, 121, 3036-3049.	3.3	17
69	Gas-to-Particle Partitioning of Cyclohexene- and Î±-Pinene-Derived Highly Oxygenated Dimers Evaluated Using COSMO<i>therm</i>. Journal of Physical Chemistry A, 2021, 125, 3726-3738.	2.5	16
70	Kinetics of the R + NO2 Reactions (R = i-C3H7, n-C3H7, s-C4H9, and t-C4H9) in the Temperature Range 201âˆ'489 K. Journal of Physical Chemistry A, 2010, 114, 4811-4817.	2.5	15
71	Modeling the thermodynamics and kinetics of sulfuric acid-dimethylamine-water nanoparticle growth in the CLOUD chamber. Aerosol Science and Technology, 2016, 50, 1017-1032.	3.1	13
72	Measurement of iodine species and sulfuric acid using bromide chemical ionization mass spectrometers. Atmospheric Measurement Techniques, 2021, 14, 4187-4202.	3.1	13

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73	Experimental and Modeling Study of the Temperature and Pressure Dependence of the Reaction C₂H₅ + O₂ (+ M) â†’ C₂H₅O₂ (+) Tj ET Q q1 1 0.78431 4	2.5	12
74	Reaction between Peroxy and Alkoxy Radicals Can Form Stable Adducts. Journal of Physical Chemistry Letters, 2019, 10, 2051-2057.	4.6	11
75	Kinetics of the Reactions of CH3CH2, CH3CHCl, and CH3CCl2 Radicals with NO2 in the Temperature Range 221âˆ’363 K. Journal of Physical Chemistry A, 2009, 113, 1753-1759.	2.5	10
76	Observations of ozone depletion events in a Finnish boreal forest. Atmospheric Chemistry and Physics, 2018, 18, 49-63.	4.9	9
77	Kinetics of Several Oxygenated Carbon-Centered Free Radical Reactions with NO₂. Journal of Physical Chemistry A, 2013, 117, 3902-3908.	2.5	8
78	Anthropogenic Volatile Organic Compound (AVOC) Autoxidation as a Source of Highly Oxygenated Organic Molecules (HOM). Journal of Physical Chemistry A, 2021, 125, 9027-9039.	2.5	8
79	Modelling the gasâ€“particle partitioning and water uptake of isoprene-derived secondary organic aerosol at high and low relative humidity. Atmospheric Chemistry and Physics, 2022, 22, 215-244.	4.9	8
80	Measurement report: Atmospheric new particle formation in a coastal agricultural site explained with binPMF analysis of nitrate CI-APi-TOF spectra. Atmospheric Chemistry and Physics, 2022, 22, 8097-8115.	4.9	8
81	Gas Phase Kinetics and Equilibrium of Allyl Radical Reactions with NO and NO₂. Journal of Physical Chemistry A, 2013, 117, 793-805.	2.5	7
82	Kinetics of the Reactions of CH₂Cl, CH₃CHCl, and CH₃CCl₂ Radicals with Cl₂ in the Temperature Range 191âˆ’363 K. Journal of Physical Chemistry A, 2010, 114, 4805-4810.	2.5	6
83	Kinetics of the brominated alkyl radical (CHBr₂, CH₃CHBr) reactions with NO₂ in the temperature range 250â€“480 K. International Journal of Chemical Kinetics, 2012, 44, 767-777.	1.6	5
84	Kinetics of Several Oxygen-Containing Carbon-Centered Free Radical Reactions with Nitric Oxide. Journal of Physical Chemistry A, 2015, 119, 7734-7741.	2.5	5
85	Measurement report: Effects of NO_{<i>x</i>} and seed aerosol on highly oxygenated organic molecules (HOMs) from cyclohexene ozonolysis. Atmospheric Chemistry and Physics, 2021, 21, 7357-7372.	4.9	5
86	Investigation of several proxies to estimate sulfuric acid concentration under volcanic plume conditions. Atmospheric Chemistry and Physics, 2021, 21, 4541-4560.	4.9	3
87	An Experimental Study of the Kinetics of the Reactions of Isopropyl,<i>sec</i>-Butyl, and<i>tert</i>-Butyl Radicals with Molecular Chlorine at Low Pressures (0.5-7.0 Torr) in the Temperature Range 190-480 K. International Journal of Chemical Kinetics, 2016, 48, 796-805.	1.6	2
88	Kinetics of resonance stabilized CH3CCCH2 radical reactions with NO and NO2. Chemical Physics Letters, 2012, 543, 28-33.	2.6	1
89	A modelling study of OH, NO₃ and H₂SO₄ in 2007â€“2018 at SMEAR II, Finland: analysis of long-term trends. Environmental Science Atmospheres, 2021, 1, 449-472.	2.4	1