

# Thomas F Mentel

## List of Publications by Year in descending order

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109  
papers

14,833  
citations

41627

51  
h-index

29333

108  
g-index

159  
all docs

159  
docs citations

159  
times ranked

8519  
citing authors

#	ARTICLE	IF	CITATIONS
1	The formation, properties and impact of secondary organic aerosol: current and emerging issues. <i>Atmospheric Chemistry and Physics</i> , 2009, 9, 5155-5236.	1.9	3,486
2	A large source of low-volatility secondary organic aerosol. <i>Nature</i> , 2014, 506, 476-479.	13.7	1,448
3	Direct Observations of Atmospheric Aerosol Nucleation. <i>Science</i> , 2013, 339, 943-946.	6.0	876
4	The effect of physical and chemical aerosol properties on warm cloud droplet activation. <i>Atmospheric Chemistry and Physics</i> , 2006, 6, 2593-2649.	1.9	690
5	Aging of Organic Aerosol: Bridging the Gap Between Laboratory and Field Studies. <i>Annual Review of Physical Chemistry</i> , 2007, 58, 321-352.	4.8	492
6	Highly Oxygenated Organic Molecules (HOM) from Gas-Phase Autoxidation Involving Peroxy Radicals: A Key Contributor to Atmospheric Aerosol. <i>Chemical Reviews</i> , 2019, 119, 3472-3509.	23.0	460
7	A novel method for online analysis of gas and particle composition: description and evaluation of a Filter Inlet for Gases and AEROsols (FIGAERO). <i>Atmospheric Measurement Techniques</i> , 2014, 7, 983-1001.	1.2	345
8	General overview: European Integrated project on Aerosol Cloud Climate and Air Quality interactions (EUCAARI) – integrating aerosol research from nano to global scales. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 13061-13143.	1.9	278
9	New particle formation in forests inhibited by isoprene emissions. <i>Nature</i> , 2009, 461, 381-384.	13.7	253
10	Aging of biogenic secondary organic aerosol via gas-phase OH radical reactions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 13503-13508.	3.3	251
11	The Formation of Highly Oxidized Multifunctional Products in the Ozonolysis of Cyclohexene. <i>Journal of the American Chemical Society</i> , 2014, 136, 15596-15606.	6.6	236
12	Gas phase formation of extremely oxidized pinene reaction products in chamber and ambient air. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 5113-5127.	1.9	222
13	Secondary organic aerosol reduced by mixture of atmospheric vapours. <i>Nature</i> , 2019, 565, 587-593.	13.7	222
14	Isoprene oxidation by nitrate radical: alkyl nitrate and secondary organic aerosol yields. <i>Atmospheric Chemistry and Physics</i> , 2009, 9, 6685-6703.	1.9	208
15	Cloud Condensation Nuclei properties of model and atmospheric HULIS. <i>Atmospheric Chemistry and Physics</i> , 2006, 6, 2465-2482.	1.9	202
16	Formation of 3-methyl-1,2,3-butanetricarboxylic acid via gas phase oxidation of pinonic acid – a mass spectrometric study of SOA aging. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 1483-1496.	1.9	200
17	Temperature dependence of yields of secondary organic aerosols from the ozonolysis of $\alpha$ -pinene and limonene. <i>Atmospheric Chemistry and Physics</i> , 2009, 9, 1551-1577.	1.9	190
18	On the Reactive Uptake of Gaseous Compounds by Organic-Coated Aqueous Aerosols: A Theoretical Analysis and Application to the Heterogeneous Hydrolysis of N <sub>2</sub> O <sub>5</sub> . <i>Journal of Physical Chemistry A</i> , 2006, 110, 10435-10443.	1.1	168

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19	Formation of highly oxidized multifunctional compounds: autoxidation of peroxy radicals formed in the ozonolysis of alkenes " deduced from structure" product relationships. <i>Atmospheric Chemistry and Physics</i> , 2015, 15, 6745-6765.	1.9	162
20	Missing Gas-Phase Source of HONO Inferred from Zeppelin Measurements in the Troposphere. <i>Science</i> , 2014, 344, 292-296.	6.0	154
21	The density of humic acids and humic like substances (HULIS) from fresh and aged wood burning and pollution aerosol particles. <i>Atmospheric Chemistry and Physics</i> , 2006, 6, 5213-5224.	1.9	147
22	Atmospheric nucleation: highlights of the EUCAARI project and future directions. <i>Atmospheric Chemistry and Physics</i> , 2010, 10, 10829-10848.	1.9	144
23	Heterogeneous freezing of droplets with immersed mineral dust particles " measurements and parameterization. <i>Atmospheric Chemistry and Physics</i> , 2010, 10, 3601-3614.	1.9	138
24	Nitrate effect in the heterogeneous hydrolysis of dinitrogen pentoxide on aqueous aerosols. <i>Physical Chemistry Chemical Physics</i> , 1999, 1, 5451-5457.	1.3	137
25	Photochemical production of aerosols from real plant emissions. <i>Atmospheric Chemistry and Physics</i> , 2009, 9, 4387-4406.	1.9	133
26	Influence of an organic coating on the reactivity of aqueous aerosols probed by the heterogeneous hydrolysis of N <sub>2</sub> O <sub>5</sub> . <i>Geophysical Research Letters</i> , 2003, 30, .	1.5	130
27	Phase partitioning and volatility of secondary organic aerosol components formed from $\alpha$ -pinene ozonolysis and OH oxidation: the importance of accretion products and other low volatility compounds. <i>Atmospheric Chemistry and Physics</i> , 2015, 15, 7765-7776.	1.9	126
28	Effects of NO <sub>2</sub> and SO <sub>2</sub> on the secondary organic aerosol formation from photooxidation of $\alpha$ -pinene and limonene. <i>Atmospheric Chemistry and Physics</i> , 2018, 18, 1611-1628.	1.9	110
29	A study of nighttime nitrogen oxide oxidation in a large reaction chamber"the fate of NO <sub>2</sub> , N <sub>2</sub> O <sub>5</sub> , HNO <sub>3</sub> , and O <sub>3</sub> at different humidities. <i>Atmospheric Environment</i> , 1996, 30, 4007-4020.	1.9	109
30	Heterogeneous reaction of N <sub>2</sub> O <sub>5</sub> on sodium nitrate aerosol. <i>Journal of Geophysical Research</i> , 1998, 103, 31103-31112.	3.3	109
31	Hygroscopic growth of atmospheric and model humic-like substances. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	104
32	Secondary aerosol formation from stress-induced biogenic emissions and possible climate feedbacks. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 8755-8770.	1.9	96
33	Relative importance of organic coatings for the heterogeneous hydrolysis of N <sub>2</sub> O <sub>5</sub> during summer in Europe. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	92
34	Impact of NO <sub>2</sub> and OH on secondary organic aerosol formation from $\alpha$ -pinene photooxidation. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 11237-11248.	1.9	89
35	Irreversible impacts of heat on the emissions of monoterpenes, sesquiterpenes, phenolic BVOC and green leaf volatiles from several tree species. <i>Biogeosciences</i> , 2012, 9, 5111-5123.	1.3	84
36	Gas-phase reaction of N <sub>2</sub> O <sub>5</sub> with water vapor: Importance of heterogeneous hydrolysis of N <sub>2</sub> O <sub>5</sub> and surface desorption of HNO <sub>3</sub> in a large Teflon chamber. <i>Geophysical Research Letters</i> , 1998, 25, 2169-2172.	1.5	83

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37	Enhanced Volatile Organic Compounds emissions and organic aerosol mass increase the oligomer content of atmospheric aerosols. <i>Scientific Reports</i> , 2016, 6, 35038.	1.6	80
38	Multi-generation OH oxidation as a source for highly oxygenated organic molecules from aromatics. <i>Atmospheric Chemistry and Physics</i> , 2020, 20, 515-537.	1.9	78
39	Intercomparison of measurements of NO <sub>2</sub> concentrations in the atmosphere simulation chamber SAPHIR during the NO <sub>3</sub> Comp campaign. <i>Atmospheric Measurement Techniques</i> , 2010, 3, 21-37.	1.2	77
40	Aerosol Mass Spectrometric Features of Biogenic SOA: Observations from a Plant Chamber and in Rural Atmospheric Environments. <i>Environmental Science &amp; Technology</i> , 2009, 43, 8166-8172.	4.6	75
41	Urban stress-induced biogenic VOC emissions and SOA-forming potentials in Beijing. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 2901-2920.	1.9	74
42	Formation of anthropogenic secondary organic aerosol (SOA) and its influence on biogenic SOA properties. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 2837-2855.	1.9	73
43	Reactive Uptake of N <sub>2</sub> O <sub>5</sub> by Aerosols Containing Dicarboxylic Acids. Effect of Particle Phase, Composition, and Nitrate Content. <i>Journal of Physical Chemistry A</i> , 2009, 113, 5082-5090.	1.1	71
44	Experimental study of the role of physicochemical surface processing on the IN ability of mineral dust particles. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 11131-11144.	1.9	70
45	Secondary organic aerosol formation from hydroxyl radical oxidation and ozonolysis of monoterpenes. <i>Atmospheric Chemistry and Physics</i> , 2015, 15, 991-1012.	1.9	67
46	Volatility of secondary organic aerosol during OH radical induced ageing. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 11055-11067.	1.9	66
47	Suppression of new particle formation from monoterpene oxidation by NO <sub>x</sub> . <i>Atmospheric Chemistry and Physics</i> , 2014, 14, 2789-2804.	1.9	63
48	Environmental conditions regulate the impact of plants on cloud formation. <i>Nature Communications</i> , 2017, 8, 14067.	5.8	62
49	Influence of relative humidity and temperature on the production of pinonaldehyde and OH radicals from the ozonolysis of $\pm$ -pinene. <i>Atmospheric Chemistry and Physics</i> , 2010, 10, 7057-7072.	1.9	61
50	Surface modification of mineral dust particles by sulphuric acid processing: implications for ice nucleation abilities. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 7839-7858.	1.9	60
51	Aerosol chemical composition at Cabauw, The Netherlands as observed in two intensive periods in May 2008 and March 2009. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 4723-4742.	1.9	60
52	Evolution of the complex refractive index in the UV spectral region in ageing secondary organic aerosol. <i>Atmospheric Chemistry and Physics</i> , 2014, 14, 5793-5806.	1.9	60
53	Hygroscopic growth and droplet activation of soot particles: uncoated, succinic or sulfuric acid coated. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 4525-4537.	1.9	57
54	The chemical and microphysical properties of secondary organic aerosols from Holm Oak emissions. <i>Atmospheric Chemistry and Physics</i> , 2010, 10, 7253-7265.	1.9	55

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55	Determination of the biogenic secondary organic aerosol fraction in the boreal forest by NMR spectroscopy. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 941-959.	1.9	51
56	Intercomparison of NO <sub>3</sub> radical detection instruments in the atmosphere simulation chamber SAPHIR. <i>Atmospheric Measurement Techniques</i> , 2013, 6, 1111-1140.	1.2	49
57	Isoprene in poplar emissions: effects on new particle formation and OH concentrations. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 1021-1030.	1.9	47
58	Organic Nitrate Contribution to New Particle Formation and Growth in Secondary Organic Aerosols from $\pm$ -Pinene Ozonolysis. <i>Environmental Science &amp; Technology</i> , 2016, 50, 6334-6342.	4.6	47
59	Cloud condensation nuclei activity, droplet growth kinetics, and hygroscopicity of biogenic and anthropogenic secondary organic aerosol (SOA). <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 1105-1121.	1.9	43
60	Highly Oxygenated Molecules from Atmospheric Autoxidation of Hydrocarbons: A Prominent Challenge for Chemical Kinetics Studies. <i>International Journal of Chemical Kinetics</i> , 2017, 49, 821-831.	1.0	43
61	Soluble mass, hygroscopic growth, and droplet activation of coated soot particles during LACIS Experiment in November (LExNo). <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	40
62	Biotic stress: a significant contributor to organic aerosol in Europe?. <i>Atmospheric Chemistry and Physics</i> , 2014, 14, 13643-13660.	1.9	40
63	Impact of NO <sub>3</sub> on secondary organic aerosol (SOA) formation from $\pm$ -pinene and $\gamma$ -pinene photooxidation: the role of highly oxygenated organic nitrates. <i>Atmospheric Chemistry and Physics</i> , 2020, 20, 10125-10147.	1.9	40
64	Size dependent partitioning of organic material: evidence for the formation of organic coatings on aqueous aerosols. <i>Journal of Atmospheric Chemistry</i> , 2007, 57, 215-237.	1.4	38
65	Evidence for an unidentified non-photochemical ground-level source of formaldehyde in the Po Valley with potential implications for ozone production. <i>Atmospheric Chemistry and Physics</i> , 2015, 15, 1289-1298.	1.9	36
66	Effect of NO <sub>3</sub> on 1,3,5-trimethylbenzene (TMB) oxidation product distribution and particle formation. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 15073-15086.	1.9	36
67	Impacts of soil moisture on de novo monoterpene emissions from European beech, Holm oak, Scots pine, and Norway spruce. <i>Biogeosciences</i> , 2015, 12, 177-191.	1.3	35
68	Carboxylic acids from limonene oxidation by ozone and hydroxyl radicals: insights into mechanisms derived using a FIGAERO-CIMS. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 13037-13052.	1.9	35
69	Intercomparison of cloud condensation nuclei and hygroscopic fraction measurements: Coated soot particles investigated during the LACIS Experiment in November (LExNo). <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	34
70	Studying the vertical aerosol extinction coefficient by comparing in situ airborne data and elastic backscatter lidar. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 4539-4554.	1.9	33
71	Hygroscopic growth and CCN activity of HULIS from different environments. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	32
72	Morphological characterization of soot aerosol particles during LACIS Experiment in November (LExNo). <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	31

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73	Size-dependent hygroscopicity parameter ( $\kappa$ ) and chemical composition of secondary organic cloud condensation nuclei. <i>Geophysical Research Letters</i> , 2015, 42, 10,920.	1.5	31
74	Highly oxygenated organic molecule (HOM) formation in the isoprene oxidation by $\text{NO}_3$ radical. <i>Atmospheric Chemistry and Physics</i> , 2021, 21, 9681-9704.	1.9	30
75	Morphological transformation of soot: investigation of microphysical processes during the condensation of sulfuric acid and limonene ozonolysis product vapors. <i>Atmospheric Chemistry and Physics</i> , 2018, 18, 9845-9860.	1.9	27
76	Examination of laboratory-generated coated soot particles: An overview of the LACIS Experiment in November (LEXNo) campaign. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	25
77	Updated aerosol module and its application to simulate secondary organic aerosols during IMPACT campaign May 2008. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 6289-6304.	1.9	25
78	Aerosol mass spectrometric measurements of stable crystal hydrates of oxalates and inferred relative ionization efficiency of water. <i>Journal of Aerosol Science</i> , 2011, 42, 11-19.	1.8	24
79	Characterization of total ecosystem-scale biogenic VOC exchange at a Mediterranean oak "hornbeam forest. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 7171-7194.	1.9	24
80	Novel method of generation of $\text{Ca}(\text{HCO}_3)_2$ and $\text{CaCO}_3$ aerosols and first determination of hygroscopic and cloud condensation nuclei activation properties. <i>Atmospheric Chemistry and Physics</i> , 2010, 10, 8601-8616.	1.9	22
81	Comparison of $\text{N}_2\text{O}_5$ mixing ratios during NO <sub>3</sub> Comp 2007 in SAPHIR. <i>Atmospheric Measurement Techniques</i> , 2012, 5, 2763-2777.	1.2	21
82	Modelling the contribution of biogenic volatile organic compounds to new particle formation in the JÄlich plant atmosphere chamber. <i>Atmospheric Chemistry and Physics</i> , 2015, 15, 10777-10798.	1.9	19
83	Molecular composition and volatility of multi-generation products formed from isoprene oxidation by nitrate radical. <i>Atmospheric Chemistry and Physics</i> , 2021, 21, 10799-10824.	1.9	19
84	Sub-Doppler infrared spectroscopy of $\text{HCCCN}=\text{BF}_3$ (v1) and $\text{HCN}=\text{BF}_3$ (v1 and 2v1). <i>Journal of Chemical Physics</i> , 1994, 101, 2762-2771.	1.2	18
85	OH-initiated degradation of several hydrocarbons in the atmosphere simulation chamber SAPHIR. <i>Journal of Atmospheric Chemistry</i> , 2007, 57, 203-214.	1.4	18
86	Measurements of hydroperoxy radicals ( $\text{HO}_2$ ) at atmospheric concentrations using bromide chemical ionisation mass spectrometry. <i>Atmospheric Measurement Techniques</i> , 2019, 12, 891-902.	1.2	18
87	Vertical profiling of aerosol hygroscopic properties in the planetary boundary layer during the PEGASOS campaigns. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 7295-7315.	1.9	17
88	Highly Oxygenated Organic Nitrates Formed from $\text{NO}_3$ Radical-Initiated Oxidation of $\beta$ -Pinene. <i>Environmental Science &amp; Technology</i> , 2021, 55, 15658-15671.	4.6	17
89	Pressure dependence of hydroxyl stretching vibrations. 2. Complexes of perfluoro-tert-butyl alcohol with aromatic acceptors. <i>The Journal of Physical Chemistry</i> , 1991, 95, 68-74.	2.9	16
90	Chemical characterisation of benzene oxidation products under high- and low- $\text{NO}_3$ conditions using chemical ionisation mass spectrometry. <i>Atmospheric Chemistry and Physics</i> , 2021, 21, 3473-3490.	1.9	16

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91	Gas-Particle Partitioning and SOA Yields of Organonitrate Products from NO <sub>3</sub> -Initiated Oxidation of Isoprene under Varied Chemical Regimes. ACS Earth and Space Chemistry, 2021, 5, 785-800.	1.2	15
92	Parameterization of Thermal Properties of Aging Secondary Organic Aerosol Produced by Photo-Oxidation of Selected Terpene Mixtures. Environmental Science & Technology, 2014, 48, 6168-6176.	4.6	14
93	Ambient and laboratory observations of organic ammonium salts in PM <sub>1</sub> . Faraday Discussions, 2017, 200, 331-351.	1.6	14
94	Pressure dependence of hydroxyl stretching vibrations. 1. Fluoroalkyl alcohols in nonpolar solvents. The Journal of Physical Chemistry, 1990, 94, 1059-1065.	2.9	11
95	Response to Comment on "Missing gas-phase source of HONO inferred from Zeppelin measurements in the troposphere". Science, 2015, 348, 1326-1326.	6.0	10
96	O-H frequency shifts of fluorinated alcohols in nonpolar solvents for high pressures and low temperatures. Journal of Molecular Structure, 1986, 143, 321-324.	1.8	9
97	A chamber study of the influence of boreal BVOC emissions and sulfuric acid on nanoparticle formation rates at ambient concentrations. Atmospheric Chemistry and Physics, 2016, 16, 1955-1970.	1.9	9
98	Zeppelin-led study on the onset of new particle formation in the planetary boundary layer. Atmospheric Chemistry and Physics, 2021, 21, 12649-12663.	1.9	9
99	Infrared spectroscopic structure investigations of 1-hexanol: dependence on high pressure. Journal of Molecular Structure, 1985, 129, 237-247.	1.8	8
100	A Four Carbon Organonitrate as a Significant Product of Secondary Isoprene Chemistry. Geophysical Research Letters, 2022, 49, .	1.5	8
101	The Rotationally Resolved 3-1/4M Spectrum and the Structure of the ICCH Dimer. Journal of Molecular Spectroscopy, 1993, 162, 342-352.	0.4	5
102	Cloud condensation nuclei activity of CaCO <sub>3</sub> particles with oleic acid and malonic acid coatings. Atmospheric Chemistry and Physics, 2018, 18, 7345-7359.	1.9	5
103	High-pressure and density dependence of H-bond complexes in solutions. A spectroscopic study of intermolecular interactions. Journal of Molecular Structure, 1990, 237, 233-247.	1.8	4
104	The pressure dependence of the OH anharmonicity constant of perfluoro-tertbutanol in non solar solvents.. Journal of Molecular Structure, 1990, 218, 333-338.	1.8	4
105	Temperature dependence of the rate coefficient for the 1-pinene reaction with ozone in the range between 243 K and 303 K. Physical Chemistry Chemical Physics, 2009, 11, 2323.	1.3	4
106	Simulation of atmospheric organic aerosol using its volatility "oxygen-content distribution during the PEGASOS 2012 campaign. Atmospheric Chemistry and Physics, 2018, 18, 10759-10772.	1.9	3
107	Monitoring intermolecular forces by high pressure infrared spectroscopy?. Journal of Molecular Liquids, 1990, 46, 239-254.	2.3	1
108	Calibration and evaluation of a broad supersaturation scanning (BS2) cloud condensation nuclei counter for rapid measurement of particle hygroscopicity and cloud condensation nuclei (CCN) activity. Atmospheric Measurement Techniques, 2021, 14, 6991-7005.	1.2	1

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109	Probing aerosol formation by comprehensive measurements of gas phase oxidation products. , 2013, , .		0