Michael P Hannigan

List of Publications by Year
in descending order

110 papers	4,945 citations	101543 36 h-index	114465 63 g-index
116 all docs	116 docs citations	116 times ranked	5888 citing authors

#	Article	IF	Citations
1	Characterization of Primary Organic Aerosol Emissions from Meat Cooking, Trash Burning, and Motor Vehicles with High-Resolution Aerosol Mass Spectrometry and Comparison with Ambient and Chamber Observations. Environmental Science & Technology, 2009, 43, 2443-2449.	10.0	365
2	Seasonal Variability in Bacterial and Fungal Diversity of the Near-Surface Atmosphere. Environmental Science & Technology, 2013, 47, 12097-12106.	10.0	349
3	The next generation of low-cost personal air quality sensors for quantitative exposure monitoring. Atmospheric Measurement Techniques, 2014, 7, 3325-3336.	3.1	206
4	Respeciation of organic gas emissions and the detection of excess unburned gasoline in the atmosphere. Environmental Science & Technology, 1992, 26, 2395-2408.	10.0	175
5	Source Apportionment of in Vitro Reactive Oxygen Species Bioassay Activity from Atmospheric Particulate Matter. Environmental Science & Technology, 2008, 42, 7502-7509.	10.0	156
6	The Temporal Lag Structure of Short-term Associations of Fine Particulate Matter Chemical Constituents and Cardiovascular and Respiratory Hospitalizations. Environmental Health Perspectives, 2012, 120, 1094-1099.	6.0	148
7	Bioassay-Directed Chemical Analysis of Los Angeles Airborne Particulate Matter Using a Human Cell Mutagenicity Assay. Environmental Science & Technology, 1998, 32, 3502-3514.	10.0	144
8	Low-Cost Air Quality Monitoring Tools: From Research to Practice (A Workshop Summary). Sensors, 2017, 17, 2478.	3.8	144
9	A Macrophage-Based Method for the Assessment of the Reactive Oxygen Species (ROS) Activity of Atmospheric Particulate Matter (PM) and Application to Routine (Daily-24 h) Aerosol Monitoring Studies. Aerosol Science and Technology, 2008, 42, 946-957.	3.1	142
10	ARIEL. , 2012, , .		126
11	Trends in Fine Particle Concentration and Chemical Composition in Southern California. Journal of the Air and Waste Management Association, 2000, 50, 43-53.	1.9	109
12	Hallway based automatic indoor floorplan construction using room fingerprints. , 2013, , .		93
13	Natural soiling of photovoltaic cover plates and the impact on transmission. Renewable Energy, 2015, 77, 166-173.	8.9	91
14	Approach for quantification of metal oxide type semiconductor gas sensors used for ambient air quality monitoring. Sensors and Actuators B: Chemical, 2015, 208, 339-345.	7.8	87
15	Characterization of organic aerosol in Big Bend National Park, Texas. Atmospheric Environment, 2002, 36, 5807-5818.	4.1	85
16	MAQS. , 2011, , .		84
17	Source Apportionment of Fine (PM_{1.8}) and Ultrafine (PM_{0.1}) Airborne Particulate Matter during a Severe Winter Pollution Episode. Environmental Science & Technology, 2009, 43, 272-279.	10.0	69
18	Concentrations and source insights for trace elements in fine and coarse particulate matter. Atmospheric Environment, 2014, 89, 373-381.	4.1	68

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19	New Emission Factors and Efficiencies from in-Field Measurements of Traditional and Improved Cookstoves and Their Potential Implications. Environmental Science & Technology, 2017, 51, 12508-12517.	10.0	67
20	Organic compounds in radiation fogs in Davis (California). Atmospheric Research, 2002, 64, 99-108.	4.1	64
21	Assessment of cookstove stacking in Northern Ghana using surveys and stove use monitors. Energy for Sustainable Development, 2016, 34, 67-76.	4.5	64
22	Size Distribution of Trace Organic Species Emitted from Heavy-Duty Diesel Vehicles. Environmental Science & Technology, 2007, 41, 1962-1969.	10.0	62
23	Quantification Method for Electrolytic Sensors in Long-Term Monitoring of Ambient Air Quality. Sensors, 2015, 15, 27283-27302.	3.8	59
24	Performance of artificial neural networks and linear models to quantify 4 trace gas species in an oil and gas production region with low-cost sensors. Sensors and Actuators B: Chemical, 2019, 283, 504-514.	7.8	52
25	Source apportionment using positive matrix factorization on daily measurements of inorganic and organic speciated PM2.5. Atmospheric Environment, 2010, 44, 2731-2741.	4.1	50
26	Light absorption of organic carbon and its sources at a southeastern U.S. location in summer. Environmental Pollution, 2019, 244, 38-46.	7.5	48
27	Adoption of improved biomass stoves and stove/fuel stacking in the REACCTING intervention study in Northern Ghana. Energy Policy, 2019, 130, 361-374.	8.8	47
28	Use of Synthetic Data to Evaluate Positive Matrix Factorization as a Source Apportionment Tool for PM2.5 Exposure Data. Environmental Science & Technology, 2006, 40, 1892-1901.	10.0	46
29	PM2.5 characterization for time series studies: Pointwise uncertainty estimation and bulk speciation methods applied in Denver. Atmospheric Environment, 2009, 43, 1136-1146.	4.1	45
30	Drop size-dependent chemical composition of clouds and fogs. Part II: Relevance to interpreting the aerosol/trace gas/fog system. Atmospheric Environment, 2004, 38, 1403-1415.	4.1	44
31	Gas/particle partitioning of n-alkanes, PAHs and oxygenated PAHs in urban Denver. Atmospheric Environment, 2014, 95, 355-362.	4.1	44
32	Coupling between Land Ecosystems and the Atmospheric Hydrologic Cycle through Biogenic Aerosol Pathways. Bulletin of the American Meteorological Society, 2005, 86, 1738-1742.	3.3	43
33	Positive Matrix Factorization of PM_{2.5}: Comparison and Implications of Using Different Speciation Data Sets. Environmental Science & Technology, 2012, 46, 11962-11970.	10.0	42
34	The contribution of biological particles to observed particulate organic carbon at a remote high altitude site. Atmospheric Environment, 2009, 43, 4278-4282.	4.1	41
35	Positive matrix factorization of PM_{2.5} â€“ eliminating the effects of gas/particle partitioning of semivolatile organic compounds. Atmospheric Chemistry and Physics, 2013, 13, 7381-7393.	4.9	41
36	Understanding the ability of low-cost MOx sensors to quantify ambient VOCs. Atmospheric Measurement Techniques, 2019, 12, 1441-1460.	3.1	40

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37	Size-Resolved Source Apportionment of Airborne Particle Mass in a Roadside Environment. Environmental Science & Technology, 2008, 42, 6580-6586.	10.0	39
38	Water soluble organic aerosols in the Colorado Rocky Mountains, USA: composition, sources and optical properties. Scientific Reports, 2016, 6, 39339.	3.3	39
39	Assessing positive matrix factorization model fit: a new method to estimate uncertainty and bias in factor contributions at the measurement time scale. Atmospheric Chemistry and Physics, 2009, 9, 497-513.	4.9	38
40	Gas/Particle Partitioning of 2-Methyltetrols and Levoglucosan at an Urban Site in Denver. Environmental Science & Technology, 2014, 48, 2835-2842.	10.0	38
41	Assessment of PM dry deposition on solar energy harvesting systems: Measurementâ€“model comparison. Aerosol Science and Technology, 2016, 50, 380-391.	3.1	38
42	Assessing a low-cost methane sensor quantification system for use in complex rural and urban environments. Atmospheric Measurement Techniques, 2018, 11, 3569-3594.	3.1	38
43	Research on Emissions, Air quality, Climate, and Cooking Technologies in Northern Ghana (REACCTING): study rationale and protocol. BMC Public Health, 2015, 15, 126.	2.9	37
44	Bacterial Mutagenicity of Urban Organic Aerosol Sources in Comparison to Atmospheric Samples. Environmental Science & Technology, 1994, 28, 2014-2024.	10.0	36
45	Effects of Plug-In Hybrid Electric Vehicles on Ozone Concentrations in Colorado. Environmental Science & Technology, 2010, 44, 6256-6262.	10.0	36
46	Deliberating performance targets workshop: Potential paths for emerging PM2.5 and O3 air sensor progress. Atmospheric Environment: X, 2019, 2, 100031.	1.4	36
47	PM2.5 characterization for time series studies: Organic molecular marker speciation methods and observations from daily measurements in Denver. Atmospheric Environment, 2009, 43, 2018-2030.	4.1	34
48	Positive matrix factorization of a 32-month series of daily PM2.5 speciation data with incorporation of temperature stratification. Atmospheric Environment, 2013, 65, 11-20.	4.1	34
49	A Hybrid Sensor System for Indoor Air Quality Monitoring. , 2013, , .		33
50	Liquified Petroleum Gas (LPG) Supply and Demand for Cooking in Northern Ghana. EcoHealth, 2018, 15, 716-728.	2.0	33
51	Community-Based Health and Exposure Study around Urban Oil Developments in South Los Angeles. International Journal of Environmental Research and Public Health, 2018, 15, 138.	2.6	31
52	Intra-urban spatial variability of surface ozone in Riverside, CA: viability and validation of low-cost sensors. Atmospheric Measurement Techniques, 2018, 11, 1777-1792.	3.1	31
53	Source Contributions to the Mutagenicity of Urban Particulate Air Pollution. Journal of the Air and Waste Management Association, 2005, 55, 399-410.	1.9	30
54	Size Distribution of Trace Organic Species Emitted from Light-Duty Gasoline Vehicles. Environmental Science & Technology, 2007, 41, 7464-7471.	10.0	28

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55	Impact of Gas/Particle Partitioning of Semivolatile Organic Compounds on Source Apportionment with Positive Matrix Factorization. Environmental Science & Technology, 2014, 48, 9053-9060.	10.0	28
56	Comparisons of urban and rural PM_{10â^'2.5} and PM_{2.5} mass concentrations and semi-volatile fractions in northeastern Colorado. Atmospheric Chemistry and Physics, 2016, 16, 7469-7484.	4.9	28
57	Ruralâ€“urban differences in cooking practices and exposures in Northern Ghana. Environmental Research Letters, 2017, 12, 065009.	5.2	27
58	Multi-Group Encoder-Decoder Networks to Fuse Heterogeneous Data for Next-Day Air Quality Prediction. , 2019, , .		27
59	Title is missing!. Water, Air and Soil Pollution, 2001, 1, 303-312.	0.8	26
60	Source identification of personal exposure to fine particulate matter using organic tracers. Atmospheric Environment, 2009, 43, 1972-1981.	4.1	25
61	Temporal patterns in daily measurements of inorganic and organic speciated PM2.5 in Denver. Atmospheric Environment, 2010, 44, 987-998.	4.1	25
62	Using A Low-Cost Sensor Array and Machine Learning Techniques to Detect Complex Pollutant Mixtures and Identify Likely Sources. Sensors, 2019, 19, 3723.	3.8	25
63	Human Cell Mutagens in Los Angeles Air. Environmental Science & Technology, 1997, 31, 438-447.	10.0	24
64	Collaborative calibration and sensor placement for mobile sensor networks. , 2012, , .		23
65	Exposures to and origins of carbonaceous PM2.5 in a cookstove intervention in Northern Ghana. Science of the Total Environment, 2017, 576, 178-192.	8.0	22
66	Quantifying Neighborhood-Scale Spatial Variations of Ozone at Open Space and Urban Sites in Boulder, Colorado Using Low-Cost Sensor Technology. Sensors, 2017, 17, 2072.	3.8	22
67	Characterization and Nonparametric Regression of Rural and Urban Coarse Particulate Matter Mass Concentrations in Northeastern Colorado. Aerosol Science and Technology, 2012, 46, 108-123.	3.1	21
68	The short-term association of selected components of fine particulate matter and mortality in the Denver Aerosol Sources and Health (DASH) study. Environmental Health, 2015, 14, 49.	4.0	21
69	Testing the performance of field calibration techniques for low-cost gas sensors in new deployment locations: across a county line and across Colorado. Atmospheric Measurement Techniques, 2018, 11, 6351-6378.	3.1	21
70	Evaluating and improving the reliability of gas-phase sensor system calibrations across new locations for ambient measurements and personal exposure monitoring. Atmospheric Measurement Techniques, 2019, 12, 4211-4239.	3.1	21
71	Intra-urban spatial variability of PM2.5-bound carbonaceous components. Atmospheric Environment, 2012, 60, 486-494.	4.1	20
72	Seasonal and spatial variation of the bacterial mutagenicity of fine organic aerosol in southern california.. Environmental Health Perspectives, 1996, 104, 428-436.	6.0	19

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73	Improving present day and future estimates of anthropogenic sectoral emissions and the resulting air quality impacts in Africa. Faraday Discussions, 2017, 200, 397-412.	3.2	19
74	Intra-urban spatial variability and uncertainty assessment of PM2.5 sources based on carbonaceous species. Atmospheric Environment, 2012, 60, 305-315.	4.1	18
75	Impact of natural soiling on the transmission of PV cover plates. , 2013, , .		16
76	Predicting Photovoltaic Soiling From Air Quality Measurements. IEEE Journal of Photovoltaics, 2020, 10, 1142-1147.	2.5	16
77	Using gas-phase air quality sensors to disentangle potential sources in a Los Angeles neighborhood. Atmospheric Environment, 2020, 233, 117519.	4.1	14
78	Collocated speciation of PM2.5 using tandem quartz filters in northern nanjing, China: Sampling artifacts and measurement uncertainty. Atmospheric Environment, 2021, 246, 118066.	4.1	14
79	Characterizing methane and total non-methane hydrocarbon levels in Los Angeles communities with oil and gas facilities using air quality monitors. Science of the Total Environment, 2021, 777, 146194.	8.0	14
80	Photochemical Aging of Atmospheric Particulate Matter in the Aqueous Phase. Environmental Science & Technology, 2021, 55, 13152-13163.	10.0	14
81	Indoor Pollutant Levels from the Use of Unvented Natural Gas Fireplaces in Boulder, Colorado. Journal of the Air and Waste Management Association, 2001, 51, 1654-1661.	1.9	13
82	Characterization of coarse particulate matter in the western United States: a comparison between observation and modeling. Atmospheric Chemistry and Physics, 2013, 13, 1311-1327.	4.9	13
83	MAQS. , 2011, , .		12
84	Evaluation of retrofit crankcase ventilation controls and diesel oxidation catalysts for reducing air pollution in school buses. Atmospheric Environment, 2009, 43, 5916-5922.	4.1	11
85	Intra-community spatial variation of size-fractionated organic compounds in Long Beach, California. Air Quality, Atmosphere and Health, 2009, 2, 69-88.	3.3	11
86	Development and validation of inexpensive, automated, dynamic flux chambers. Atmospheric Measurement Techniques, 2015, 8, 267-280.	3.1	11
87	Comparing Building and Neighborhood-Scale Variability of CO2 and O3 to Inform Deployment Considerations for Low-Cost Sensor System Use. Sensors, 2018, 18, 1349.	3.8	11
88	User-Centric Indoor Air Quality Monitoring on Mobile Devices. AI Magazine, 2013, 34, 11.	1.6	10
89	Attributing Air Pollutant Exposure to Emission Sources with Proximity Sensing. Atmosphere, 2019, 10, 395.	2.3	10
90	Kitchen Area Air Quality Measurements in Northern Ghana: Evaluating the Performance of a Low-Cost Particulate Sensor within a Household Energy Study. Atmosphere, 2019, 10, 400.	2.3	10

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91	Low-cost measurement techniques to characterize the influence of home heating fuel on carbon monoxide in Navajo homes. Science of the Total Environment, 2018, 625, 608-618.	8.0	9
92	The sensitivity of health effect estimates from time-series studies to fine particulate matter component sampling schedule. Journal of Exposure Science and Environmental Epidemiology, 2013, 23, 481-486.	3.9	8
93	Errors in coarse particulate matter mass concentrations and spatiotemporal characteristics when using subtraction estimation methods. Journal of the Air and Waste Management Association, 2013, 63, 1386-1398.	1.9	8
94	Iron Speciation in PM 2.5 From Urban, Agriculture, and Mixed Environments in Colorado, USA. Earth and Space Science, 2020, 7, e2020EA001262.	2.6	8
95	Prices, peers, and perceptions (P3): study protocol for improved biomass cookstove project in northern Ghana. BMC Public Health, 2018, 18, 1209.	2.9	7
96	Exposures to Carbon Monoxide in a Cookstove Intervention in Northern Ghana. Atmosphere, 2019, 10, 402.	2.3	7
97	Comparing Multipollutant Emissions-Based Mobile Source Indicators to Other Single Pollutant and Multipollutant Indicators in Different Urban Areas. International Journal of Environmental Research and Public Health, 2014, 11, 11727-11752.	2.6	6
98	Enhanced Photovoltaic Soiling In An Urban Environment. , 2019, , .		6
99	On the development and implementation of a project-based learning curriculum for air quality in K-12 schools. , 2015, , .		5
100	Updated Emission Factors from Diffuse Combustion Sources in Sub-Saharan Africa and Their Effect on Regional Emission Estimates. Environmental Science & Technology, 2019, 53, 6392-6401.	10.0	5
101	A glimpse into real-world kitchens: Improving our understanding of cookstove usage through in-field photo-observations and improved cooking event detection (CookED) analytics. Development Engineering, 2021, 6, 100065.	1.8	5
102	Improving Air Pollutant Metal Oxide Sensor Quantification Practices through: An Exploration of Sensor Signal Normalization, Multi-Sensor and Universal Calibration Model Generation, and Physical Factors Such as Co-Location Duration and Sensor Age. Atmosphere, 2021, 12, 645.	2.3	5
103	Regional and National Scale Spatial Variability of Photovoltaic Cover Plate Soiling and Subsequent Solar Transmission Losses. IEEE Journal of Photovoltaics, 2017, 7, 1354-1361.	2.5	4
104	Health impacts of a randomized biomass cookstove intervention in northern Ghana. BMC Public Health, 2021, 21, 2211.	2.9	3
105	Integrating a K-12 Education and Outreach Initiative into a Sustainability Research Network (Work in) Tj ETQq1 1 0.784314 rgBT /Ove		2
106	Initial results of a five site study comparing spatial variability of soiling and ambient particulate concentrations. , 2015, , .		2
107	Natural and Unnatural Organic Matter in the Atmosphere: Recent Perspectives on the High Molecular Weight Fraction of Organic Aerosol. ACS Symposium Series, 2014, , 87-111.	0.5	1
108	Applications and Limitations of Quantifying Speciated and Source-Apportioned VOCs with Metal Oxide Sensors. Atmosphere, 2021, 12, 1383.	2.3	1

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109	Letters to the Editor. Journal of the Air and Waste Management Association, 2002, 52, 1133-1138.	1.9	0
110	Introducing university laboratory tools into K-12 classrooms: Benefits and challenges. , 2017, , .		0