Jason I Gerhard

List of Publications by Year
in descending order

118 papers	5,296 citations	81900 39 h-index	98798 67 g-index
120 all docs	120 docs citations	120 times ranked	4201 citing authors

#	Article	IF	Citations
1	Global vulnerability of peatlands to fire and carbon loss. Nature Geoscience, 2015, 8, 11-14.	12.9	547
2	The severity of smouldering peat fires and damage to the forest soil. Catena, 2008, 74, 304-309.	5.0	262
3	Predicting colloid transport through saturated porous media: A critical review. Water Resources Research, 2015, 51, 6804-6845.	4.2	209
4	Application of genetic algorithms and thermogravimetry to determine the kinetics of polyurethane foam in smoldering combustion. Combustion and Flame, 2006, 146, 95-108.	5.2	200
5	Pyrolysis of Medium-Density Fiberboard: Optimized Search for Kinetics Scheme and Parameters via a Genetic Algorithm Driven by Kissingerâ€™s Method. Energy & Fuels, 2014, 28, 6130-6139.	5.1	165
6	Increased fire activity at the Triassic/Jurassic boundary in Greenland due to climate-driven floral change. Nature Geoscience, 2010, 3, 426-429.	12.9	156
7	Smouldering combustion of peat in wildfires: Inverse modelling of the drying and the thermal and oxidative decomposition kinetics. Combustion and Flame, 2014, 161, 1633-1644.	5.2	129
8	Measurement and prediction of the relationship between capillary pressure, saturation, and interfacial area in a NAPLâ€waterâ€glass bead system. Water Resources Research, 2010, 46, .	4.2	114
9	Computational smoldering combustion: Predicting the roles of moisture and inert contents in peat wildfires. Proceedings of the Combustion Institute, 2015, 35, 2673-2681.	3.9	98
10	Small-scale forward smouldering experiments for remediation of coal tar in inert media. Proceedings of the Combustion Institute, 2009, 32, 1957-1964.	3.9	95
11	Downward spread of smouldering peat fire: the role of moisture, density and oxygen supply. International Journal of Wildland Fire, 2017, 26, 907.	2.4	93
12	Study of the competing chemical reactions in the initiation and spread of smouldering combustion in peat. Proceedings of the Combustion Institute, 2013, 34, 2547-2553.	3.9	90
13	Self-Sustaining Smoldering Combustion: A Novel Remediation Process for Non-Aqueous-Phase Liquids in Porous Media. Environmental Science & Technology, 2009, 43, 5871-5877.	10.0	89
14	Remediation of PFAS-Contaminated Soil and Granular Activated Carbon by Smoldering Combustion. Environmental Science & Technology, 2020, 54, 12631-12640.	10.0	87
15	Processes defining smouldering combustion: Integrated review and synthesis. Progress in Energy and Combustion Science, 2020, 81, 100869.	31.2	86
16	DNAPL mapping by ground penetrating radar examined via numerical simulation. Journal of Applied Geophysics, 2009, 69, 140-149.	2.1	78
17	Smouldering combustion as a treatment technology for faeces: Exploring the parameter space. Fuel, 2015, 147, 108-116.	6.4	77
18	Application of self-sustaining smouldering combustion for the destruction of wastewater biosolids. Waste Management, 2016, 50, 201-212.	7.4	74

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19	pH control for enhanced reductive bioremediation of chlorinated solvent source zones. Science of the Total Environment, 2009, 407, 4560-4573.	8.0	72
20	Self-Sustaining Smoldering Combustion for NAPL Remediation: Laboratory Evaluation of Process Sensitivity to Key Parameters. Environmental Science & Technology, 2011, 45, 2980-2986.	10.0	72
21	Thermochemical conversion of biomass in smouldering combustion across scales: The roles of heterogeneous kinetics, oxygen and transport phenomena. Bioresource Technology, 2016, 207, 409-421.	9.6	72
22	Electrokinetic-enhanced permanganate delivery and remediation of contaminated low permeability porous media. Water Research, 2017, 113, 215-222.	11.3	68
23	Variability of point source infiltration rates for two-phase flow in heterogeneous porous media. Water Resources Research, 1995, 31, 2971-2980.	4.2	66
24	Time Scales of DNAPL Migration in Sandy Aquifers Examined via Numerical Simulation. Ground Water, 2007, 45, 147-157.	1.3	65
25	Smoldering Combustion. , 2016, , 581-603.		62
26	Smoldering Remediation of Coal-Tar-Contaminated Soil: Pilot Field Tests of STAR. Environmental Science & Technology, 2015, 49, 14334-14342.	10.0	61
27	Computational study of critical moisture and depth of burn in peat fires. International Journal of Wildland Fire, 2015, 24, 798.	2.4	61
28	Review of the Transition From Smouldering to Flaming Combustion in Wildfires. Frontiers in Mechanical Engineering, 2019, 5, .	1.8	61
29	Computational model of forward and opposed smoldering combustion in microgravity. Proceedings of the Combustion Institute, 2007, 31, 2677-2684.	3.9	59
30	Sensor Assisted Fire Fighting. Fire Technology, 2010, 46, 719-741.	3.0	58
31	Volumetric scale-up of smouldering remediation of contaminated materials. Journal of Hazardous Materials, 2014, 268, 51-60.	12.4	57
32	Propagation probability and spread rates of self-sustained smouldering fires under controlled moisture content and bulk density conditions. International Journal of Wildland Fire, 2016, 25, 456.	2.4	55
33	Improved time-lapse electrical resistivity tomography monitoring of dense non-aqueous phase liquids with surface-to-horizontal borehole arrays. Journal of Applied Geophysics, 2015, 112, 1-13.	2.1	54
34	Low Permeability Zone Remediation via Oxidant Delivered by Electrokinetics and Activated by Electrical Resistance Heating: Proof of Concept. Environmental Science & Technology, 2017, 51, 13295-13303.	10.0	52
35	Field test of electrokinetically-delivered thermally activated persulfate for remediation of chlorinated solvents in clay. Water Research, 2020, 183, 116061.	11.3	49
36	Evaluating four-dimensional time-lapse electrical resistivity tomography for monitoring DNAPL source zone remediation. Journal of Contaminant Hydrology, 2014, 162-163, 27-46.	3.3	45

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37	Delineating and explaining the limits of self-sustained smouldering combustion. Combustion and Flame, 2019, 201, 78-92.	5.2	45
38	Continuous, self-sustaining smouldering destruction of simulated faeces. Fuel, 2017, 190, 58-66.	6.4	43
39	Remediation of trichloroethylene-contaminated soils by star technology using vegetable oil smoldering. Journal of Hazardous Materials, 2015, 285, 346-355.	12.4	42
40	Influence of wettability variations on dynamic effects in capillary pressure. Water Resources Research, 2010, 46, .	4.2	41
41	Radiant Ignition of Polyurethane Foam: The Effect of Sample Size. Fire Technology, 2014, 50, 673-691.	3.0	40
42	Determination of the interfacial heat transfer coefficient between forced air and sand at Reynoldâ€™s numbers relevant to smouldering combustion. International Journal of Heat and Mass Transfer, 2017, 114, 90-104.	4.8	39
43	The influence of precipitate formation on the chemical oxidation of TCE DNAPL with potassium permanganate. Advances in Water Resources, 2008, 31, 324-338.	3.8	38
44	A Novel Multiscale Methodology for Simulating Tunnel Ventilation Flows During Fires. Fire Technology, 2011, 47, 221-253.	3.0	38
45	Effects of spatial heterogeneity in moisture content on the horizontal spread of peat fires. Science of the Total Environment, 2016, 572, 1422-1430.	8.0	38
46	Organic liquid mobility induced by smoldering remediation. Journal of Hazardous Materials, 2017, 325, 101-112.	12.4	37
47	Biological reduction of chlorinated solvents: Batch-scale geochemical modeling. Advances in Water Resources, 2010, 33, 969-986.	3.8	36
48	Interactions of Earth's atmospheric oxygen and fuel moisture in smouldering wildfires. Science of the Total Environment, 2016, 572, 1440-1446.	8.0	36
49	Experimental study on the burning behaviour of Pinus halepensis needles using smallâ€scale fire calorimetry of live, aged and dead samples. Fire and Materials, 2016, 40, 385-395.	2.0	35
50	The impact of immobile zones on the transport and retention of nanoparticles in porous media. Water Resources Research, 2015, 51, 8973-8994.	4.2	33
51	Experimental Study of Self-heating Ignition of Lithium-Ion Batteries During Storage: Effect of the Number of Cells. Fire Technology, 2020, 56, 2649-2669.	3.0	33
52	Development of the Thermal Decomposition Mechanism of Polyether Polyurethane Foam Using Both Condensed and Gas-Phase Release Data. Combustion Science and Technology, 2011, 183, 627-644.	2.3	30
53	Self-sustaining smouldering combustion of coal tar for the remediation of contaminated sand: Two-dimensional experiments and computational simulations. Fuel, 2015, 150, 288-297.	6.4	29
54	Smouldering wildfires in peatlands, forests and the arctic: Challenges and perspectives. Current Opinion in Environmental Science and Health, 2021, 24, 100296.	4.1	29

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55	Modeling of one-dimensional smoldering of polyurethane in microgravity conditions. Proceedings of the Combustion Institute, 2005, 30, 2327-2334.	3.9	27
56	Multidimensional validation of a numerical model for simulating a DNAPL release in heterogeneous porous media. Journal of Contaminant Hydrology, 2007, 92, 109-128.	3.3	25
57	Past and Present Post-Fire Environments. Science of the Total Environment, 2016, 573, 1275-1277.	8.0	25
58	The role of local thermal non-equilibrium in modelling smouldering combustion of organic liquids. Proceedings of the Combustion Institute, 2019, 37, 3109-3117.	3.9	25
59	Heat losses in a smouldering system: The key role of non-uniform air flux. Combustion and Flame, 2021, 227, 309-321.	5.2	25
60	Determining the conditions that lead to self-sustained smouldering combustion by means of numerical modelling. Proceedings of the Combustion Institute, 2019, 37, 4043-4051.	3.9	24
61	Scaling up self-sustained smouldering of sewage sludge for waste-to-energy. Waste Management, 2021, 135, 298-308.	7.4	24
62	Impact of surfactant-induced wettability alterations on DNAPL invasion in quartz and iron oxide-coated sand systems. Journal of Contaminant Hydrology, 2011, 119, 1-12.	3.3	23
63	A new coupled model for simulating the mapping of dense nonaqueous phase liquids using electrical resistivity tomography. Geophysics, 2013, 78, EN1-EN15.	2.6	23
64	Understanding pressure changes in smouldering thermal porous media reactors. Chemical Engineering Journal, 2021, 412, 128642.	12.7	23
65	Thermal and oxidative decomposition of bitumen at the Microscale: Kinetic inverse modelling. Fuel, 2020, 264, 116704.	6.4	22
66	Experimental and numerical investigation of weak, self-sustained conditions in engineered smouldering combustion. Combustion and Flame, 2020, 222, 27-35.	5.2	22
67	STARx Hottpad for smoldering treatment of waste oil sludge: Proof of concept and sensitivity to key design parameters. Waste Management and Research, 2020, 38, 554-566.	3.9	22
68	Analysis of the Thermomechanical Response of Structural Cables Subject to Fire. Fire Technology, 2020, 56, 515-543.	3.0	21
69	The improved energy efficiency of applied smouldering systems with increasing scale. International Journal of Heat and Mass Transfer, 2021, 177, 121548.	4.8	21
70	Phosphorus recovery and reuse potential from smouldered sewage sludge ash. Waste Management, 2022, 137, 241-252.	7.4	21
71	Numerical investigation of downward smoldering combustion in an organic soil column. International Journal of Heat and Mass Transfer, 2015, 84, 253-261.	4.8	20
72	Reduced chemical kinetics for microscale pyrolysis of softwood and hardwood. Bioresource Technology, 2020, 301, 122619.	9.6	19

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73	Wettability contrasts between fresh and weathered diesel fuels. Journal of Contaminant Hydrology, 2013, 144, 46-57.	3.3	18
74	Heat losses in applied smouldering systems: Sensitivity analysis via analytical modelling. International Journal of Heat and Mass Transfer, 2021, 172, 121150.	4.8	17
75	Analysis of acidity production during enhanced reductive dechlorination using a simplified reactive transport model. Advances in Water Resources, 2012, 43, 14-27.	3.8	16
76	A novel method for simulating smoldering propagation and its application to STAR (Self-sustaining) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	4.5	16
77	Electrokinetically-enhanced emplacement of lactate in a chlorinated solvent contaminated clay site to promote bioremediation. Water Research, 2021, 201, 117305.	11.3	16
78	Method for Obtaining Silver Nanoparticle Concentrations within a Porous Medium via Synchrotron X-ray Computed Microtomography. Environmental Science & Technology, 2014, 48, 1114-1122.	10.0	15
79	Probabilistic Study of the Resistance of a Simply-Supported Reinforced Concrete Slab According to Eurocode Parametric Fire. Fire Technology, 2019, 55, 1377-1404.	3.0	15
80	The influence of porous media heterogeneity on smouldering remediation. Journal of Contaminant Hydrology, 2021, 237, 103756.	3.3	15
81	Mapping and Monitoring of DNAPL Source Zones With Combined Direct Current Resistivity and Induced Polarization: A Fieldâ€Scale Numerical Investigation. Water Resources Research, 2021, 57, e2021WR031366.	4.2	15
82	Burning and Water Suppression of Smoldering Coal Fires in Small-Scale Laboratory Experiments. , 2011, , 317-326.		14
83	Flame extension and the near field under the ceiling for travelling fires inside large compartments. Fire and Materials, 2020, 44, 423-436.	2.0	14
84	Numerical Study of Self-Heating Ignition of a Box of Lithium-Ion Batteries During Storage. Fire Technology, 2020, 56, 2603-2621.	3.0	14
85	Thermal Response of Timber Slabs Exposed to Travelling Fires and Traditional Design Fires. Fire Technology, 2021, 57, 393-414.	3.0	14
86	Parameter and process significance in mechanistic modeling of cellulose hydrolysis. Bioresource Technology, 2008, 99, 5738-5748.	9.6	13
87	Hydraulic Displacement of Dense Nonaqueous Phase Liquids for Source Zone Stabilization. Ground Water, 2012, 50, 765-774.	1.3	13
88	Field scale impacts of spatially correlated relative permeability in heterogeneous multiphase systems. Advances in Water Resources, 2007, 30, 1144-1159.	3.8	12
89	Comparative Study To Evaluate the Drying Kinetics of Boreal Peats from Micro to Macro Scales. Energy & Fuels, 2012, 26, 349-356.	5.1	12
90	Quantified Pore-Scale Nanoparticle Transport in Porous Media and the Implications for Colloid Filtration Theory. Langmuir, 2016, 32, 7841-7853.	3.5	11

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91	Fire dynamics inside a large and openâ€plan compartment with exposed timber ceiling and columns: <scp>CodeRed</scp> #01. Fire and Materials, 2023, 47, 542-568.	2.0	11
92	Factors Affecting the Make-Up Air and Their Influence on the Dynamics of Atrium Fires. Fire Technology, 2018, 54, 1067-1091.	3.0	10
93	Wettability Effects on Primary Drainage Mechanisms and NAPL Distribution: A Poreâ€Scale Study. Water Resources Research, 2020, 56, e2019WR025381.	4.2	10
94	Time-lapse electrical resistivity tomography mapping of DNAPL remediation at a STAR field site. Journal of Applied Geophysics, 2021, 184, 104244.	2.1	9
95	Smouldering and its transition to flaming combustion of polyurethane foam: An experimental study. Fuel, 2022, 309, 122249.	6.4	9
96	Even Greater than the Sum of Its Parts. Fire Technology, 2014, 50, 1-1.	3.0	8
97	Flammability hazards of typical fuels used in wind turbine nacelle. Fire and Materials, 2018, 42, 770-781.	2.0	8
98	Haze emissions from smouldering peat: The roles of inorganic content and bulk density. Fire Safety Journal, 2020, 113, 102940.	3.1	8
99	Star: a uniquely sustainable inÂsitu and ex situ remediation process. , 2020, , 221-246.		8
100	Multiphase modelling of water evaporation and condensation in an air-heated porous medium. Applied Thermal Engineering, 2022, 212, 118516.	6.0	7
101	Ignition and Burning of Fibreboard Exposed to Transient Irradiation. Fire Technology, 2021, 57, 1095-1113.	3.0	6
102	Exploring PCDD/Fs and potentially toxic elements in sewage sludge during smouldering treatment. Journal of Environmental Management, 2022, 317, 115384.	7.8	6
103	Modeling the effectiveness of U(VI) biomineralization in dual-porosity porous media. Journal of Hydrology, 2011, 402, 14-24.	5.4	5
104	Probabilistic risk assessment of contaminant transport in groundwater and vapour intrusion following remediation of a contaminant source. Stochastic Environmental Research and Risk Assessment, 2016, 30, 1017-1031.	4.0	5
105	9/11 World Trade Center Attacks: Lessons in Fire Safety Engineering After the Collapse of the Towers. Fire Technology, 2013, 49, 583-585.	3.0	4
106	A three-dimensional numerical model for linking community-wide vapour risks. Journal of Contaminant Hydrology, 2014, 156, 38-51.	3.3	4
107	Computer simulation of sunlight concentration due to faÃ§ade shape: application to the 2013 Death Ray at Fenchurch Street, London. Journal of Building Performance Simulation, 2019, 12, 378-387.	2.0	4
108	USEPA LEAF methods for characterizing phosphorus and potentially toxic elements in raw and thermally treated sewage sludge. Chemosphere, 2021, 275, 130081.	8.2	4

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109	Understanding, controlling and optimising the cooling of waste thermal treatment beds including STARx Hottpads. Waste Management and Research, 2022, 40, 1390-1401.	3.9	4
110	Simulation of fingering behavior in smoldering combustion using a cellular automaton. Physical Review E, 2019, 99, 023314.	2.1	3
111	Acceptance Criteria for Unbonded Post-Tensioned Concrete Exposed to Travelling and Traditional Design Fires. Fire Technology, 2020, 56, 1229-1252.	3.0	2
112	Breakthrough in the understanding of flaming wildfires. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 9795-9796.	7.1	1
113	Selfâ€potential for monitoring soil remediation by smouldering: a proof of concept. Near Surface Geophysics, 2017, 15, 475-485.	1.2	1
114	Using fire to remediate contaminated soils. , 2018, , 601-625.		1
115	Guest Editorial: Wildfires, Fire Science and Fire Safety Engineering. Fire Technology, 2011, 47, 293-294.	3.0	0
116	Editorial: Knowing is Not Enough, We Must Apply. Fire Technology, 2013, 49, 3-3.	3.0	0
117	Geoelectrical monitoring of dense non-aqueous phase liquid (DNAPL) remediation: Numerical, experimental, and field studies. , 2021, , .		0
118	Modeling Source Zone Remediation. , 2014, , 113-144.		0