

David Gabriel

List of Publications by Year in descending order

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126
papers

3,878
citations

94433

37
h-index

149698

56
g-index

128
all docs

128
docs citations

128
times ranked

2977
citing authors

#	ARTICLE	IF	CITATIONS
1	Retrofitting existing chemical scrubbers to biotrickling filters for H ₂ S emission control. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 6308-6312.	7.1	194
2	Biological sweetening of energy gases mimics in biotrickling filters. Chemosphere, 2008, 71, 10-17.	8.2	146
3	Simultaneous methylmercaptan and hydrogen sulfide removal in the desulfurization of biogas in aerobic and anoxic biotrickling filters. Chemical Engineering Journal, 2012, 200-202, 237-246.	12.7	121
4	Microfluidic lab-on-a-chip platforms for environmental monitoring. TrAC - Trends in Analytical Chemistry, 2017, 95, 62-68.	11.4	110
5	Effect of internal recycle on the nitrogen removal efficiency of an anaerobic/anoxic/oxic (A ₂ /O) wastewater treatment plant (WWTP). Process Biochemistry, 2004, 39, 1615-1624.	3.7	106
6	Greenhouse gas emissions from organic waste composting. Environmental Chemistry Letters, 2015, 13, 223-238.	16.2	103
7	Performance of a full-scale biotrickling filter treating H ₂ S at a gas contact time of 1.6 to 2.2 seconds. Environmental Progress, 2003, 22, 111-118.	0.7	92
8	A detailed model of a biofilter for ammonia removal: Model parameters analysis and model validation. Chemical Engineering Journal, 2005, 113, 205-214.	12.7	91
9	Fungal biofilters for toluene biofiltration: Evaluation of the performance with four packing materials under different operating conditions. Chemosphere, 2007, 67, 684-692.	8.2	90
10	Treatment of high-strength sulfate wastewater using an autotrophic biocathode in view of elemental sulfur recovery. Water Research, 2016, 105, 395-405.	11.3	83
11	Biotrickling filters for biogas sweetening: Oxygen transfer improvement for a reliable operation. Chemical Engineering Research and Design, 2014, 92, 261-268.	5.6	75
12	Modeling of a bacterial and fungal biofilter applied to toluene abatement: Kinetic parameters estimation and model validation. Chemical Engineering Journal, 2008, 140, 52-61.	12.7	71
13	Operational aspects of the desulfurization process of energy gases mimics in biotrickling filters. Water Research, 2011, 45, 5665-5674.	11.3	67
14	Operational aspects, pH transition and microbial shifts of a H ₂ S desulfurizing biotrickling filter with random packing material. Chemosphere, 2013, 93, 2675-2682.	8.2	67
15	Aerobic desulfurization of biogas by acidic biotrickling filtration in a randomly packed reactor. Journal of Hazardous Materials, 2014, 280, 200-208.	12.4	66
16	Examining thiosulfate-driven autotrophic denitrification through respirometry. Chemosphere, 2014, 113, 1-8.	8.2	64
17	Technical and economical analysis of the conversion of a full-scale scrubber to a biotrickling filter for odor control. Water Science and Technology, 2004, 50, 309-318.	2.5	63
18	A comparative study based on physical characteristics of suitable packing materials in biofiltration. Environmental Technology (United Kingdom), 2010, 31, 193-204.	2.2	63

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19	Cost and effluent quality controllers design based on the relative gain array for a nutrient removal WWTP. <i>Water Research</i> , 2009, 43, 5129-5141.	11.3	62
20	Kinetic and stoichiometric characterization of anoxic sulfide oxidation by SO-NR mixed cultures from anoxic biotrickling filters. <i>Applied Microbiology and Biotechnology</i> , 2015, 99, 77-87.	3.6	58
21	Life cycle assessment of different physical-chemical and biological technologies for biogas desulfurization in sewage treatment plants. <i>Journal of Cleaner Production</i> , 2018, 181, 663-674.	9.3	58
22	Bacterial community analysis of a gas-phase biotrickling filter for biogas mimics desulfurization through the rRNA approach. <i>Chemosphere</i> , 2010, 80, 872-880.	8.2	56
23	Conversion of Full-Scale Wet Scrubbers to Biotrickling Filters for H ₂ S Control at Publicly Owned Treatment Works. <i>Journal of Environmental Engineering, ASCE</i> , 2004, 130, 1110-1117.	1.4	53
24	Biomass accumulation in a biofilter treating toluene at high loads – Part 1: Experimental performance from inoculation to clogging. <i>Chemical Engineering Journal</i> , 2012, 209, 661-669.	12.7	52
25	Respirometric characterization of aerobic sulfide, thiosulfate and elemental sulfur oxidation by S-oxidizing biomass. <i>Water Research</i> , 2016, 89, 282-292.	11.3	52
26	A systematic study on the VOCs characterization and odour emissions in a full-scale sewage sludge composting plant. <i>Journal of Hazardous Materials</i> , 2019, 373, 733-740.	12.4	50
27	The effect of the composting time on the gaseous emissions and the compost stability in a full-scale sewage sludge composting plant. <i>Science of the Total Environment</i> , 2019, 654, 311-323.	8.0	50
28	Improving the nitrogen removal efficiency of an A ₂ /O based WWTP by using an on-line Knowledge Based Expert System. <i>Water Research</i> , 2002, 36, 2109-2123.	11.3	48
29	Technical and economical study of a full-scale biotrickling filter for H ₂ S removal from biogas. <i>Water Practice and Technology</i> , 2009, 4, .	2.0	48
30	Systematic identifiability study based on the Fisher Information Matrix for reducing the number of parameters calibration of an activated sludge model. <i>Environmental Modelling and Software</i> , 2009, 24, 1274-1284.	4.5	46
31	Influence of trickling liquid velocity and flow pattern in the improvement of oxygen transport in aerobic biotrickling filters for biogas desulfurization. <i>Journal of Chemical Technology and Biotechnology</i> , 2016, 91, 1031-1039.	3.2	44
32	Treatment of real flue gas desulfurization wastewater in an autotrophic biocathode in view of elemental sulfur recovery: Microbial communities involved. <i>Science of the Total Environment</i> , 2019, 657, 945-952.	8.0	42
33	Evaluation of key parameters on simultaneous sulfate reduction and sulfide oxidation in an autotrophic biocathode. <i>Water Research</i> , 2017, 123, 301-310.	11.3	41
34	Performance, limitations and microbial diversity of a biotrickling filter for the treatment of high loads of ammonia. <i>Chemical Engineering Journal</i> , 2017, 311, 91-99.	12.7	41
35	Effect of gas-liquid flow pattern and microbial diversity analysis of a pilot-scale biotrickling filter for anoxic biogas desulfurization. <i>Chemosphere</i> , 2016, 157, 215-223.	8.2	40
36	An expert supervisory system for a pilot WWTP. <i>Environmental Modelling and Software</i> , 1999, 14, 383-390.	4.5	39

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37	Evaluation of Mass Transfer Coefficients in Biotrickling Filters: Experimental Determination and Comparison to Correlations. <i>Chemical Engineering and Technology</i> , 2009, 32, 1941-1950.	1.5	39
38	Dynamic characterization of external and internal mass transport in heterotrophic biofilms from microsensors measurements. <i>Water Research</i> , 2016, 102, 551-560.	11.3	39
39	Economical assessment of the design, construction and operation of open-bed biofilters for waste gas treatment. <i>Journal of Environmental Management</i> , 2009, 90, 2515-2523.	7.8	38
40	Long-term ammonia removal in a coconut fiber-packed biofilter: Analysis of N fractionation and reactor performance under steady-state and transient conditions. <i>Water Research</i> , 2009, 43, 2293-2301.	11.3	37
41	The role of water in the performance of biofilters: Parameterization of pressure drop and sorption capacities for common packing materials. <i>Journal of Hazardous Materials</i> , 2010, 180, 693-702.	12.4	37
42	Characterisation and performance of coconut fibre as packing material in the removal of ammonia in gas-phase biofilters. <i>Biosystems Engineering</i> , 2007, 97, 481-490.	4.3	36
43	Modeling an aerobic biotrickling filter for biogas desulfurization through a multi-step oxidation mechanism. <i>Chemical Engineering Journal</i> , 2016, 294, 447-457.	12.7	36
44	Development and application of a hybrid inert/organic packing material for the biofiltration of composting off-gases mimics. <i>Journal of Hazardous Materials</i> , 2010, 178, 665-672.	12.4	34
45	Inventory and treatment of compost maturation emissions in a municipal solid waste treatment facility. <i>Waste Management</i> , 2014, 34, 344-351.	7.4	34
46	Investigating the kinetics of autotrophic denitrification with thiosulfate: Modeling the denitrification mechanisms and the effect of the acclimation of SO-NR cultures to nitrite. <i>Chemical Engineering Journal</i> , 2015, 262, 235-241.	12.7	33
47	Monitoring and performance of a desulphurizing biotrickling filter with an integrated continuous gas/liquid flow analyser. <i>Chemical Engineering Journal</i> , 2010, 165, 500-507.	12.7	32
48	Simultaneous Removal of H ₂ S, NH ₃ , and Ethyl Mercaptan in Biotrickling Filters Packed with Poplar Wood and Polyurethane Foam: Impact of pH During Startup and Crossed Effects Evaluation. <i>Water, Air, and Soil Pollution</i> , 2012, 223, 3485-3497.	2.4	32
49	Feedforward control application in aerobic and anoxic biotrickling filters for H ₂ S removal from biogas. <i>Journal of Chemical Technology and Biotechnology</i> , 2018, 93, 2307-2315.	3.2	26
50	Oxidation of biologically produced elemental sulfur under neutrophilic conditions. <i>Journal of Chemical Technology and Biotechnology</i> , 2010, 85, 378-386.	3.2	25
51	Analysis of MSW full-scale facilities based on anaerobic digestion and/or composting using respiration indices as performance indicators. <i>Bioresource Technology</i> , 2017, 236, 87-96.	9.6	24
52	Filling in sewage sludge biodrying gaps: Greenhouse gases, volatile organic compounds and odour emissions. <i>Bioresource Technology</i> , 2019, 291, 121857.	9.6	24
53	A novel FIA configuration for the simultaneous determination of nitrate and nitrite and its use for monitoring an urban waste water treatment plant based on N/D criteria. <i>Analytica Chimica Acta</i> , 1998, 359, 173-183.	5.4	23
54	On-line monitoring of gas-phase bioreactors for biogas treatment: hydrogen sulfide and sulfide analysis by automated flow systems. <i>Analytical and Bioanalytical Chemistry</i> , 2008, 391, 789-798.	3.7	23

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55	Application of a novel respirometric methodology to characterize mass transfer and activity of H ₂ S-oxidizing biofilms in biotrickling filter beds. <i>Biochemical Engineering Journal</i> , 2015, 99, 24-34.	3.6	23
56	Conversion of chemical scrubbers to biotrickling filters for VOCs and H ₂ S treatment at low contact times. <i>Applied Microbiology and Biotechnology</i> , 2015, 99, 67-76.	3.6	23
57	Characterization of the Gaseous and Odour Emissions from the Composting of Conventional Sewage Sludge. <i>Atmosphere</i> , 2020, 11, 211.	2.3	22
58	A comparative study of eubacterial communities by PCR-DGGE fingerprints in anoxic and aerobic biotrickling filters used for biogas desulfurization. <i>Bioprocess and Biosystems Engineering</i> , 2018, 41, 1165-1175.	3.4	21
59	Fully integrated screen-printed sulfide-selective sensor on a 3D-printed potentiometric microfluidic platform. <i>Sensors and Actuators B: Chemical</i> , 2019, 290, 364-370.	7.8	21
60	Removal of Quebracho and Tara tannins in fungal bioreactors: Performance and biofilm stability analysis. <i>Journal of Environmental Management</i> , 2019, 231, 137-145.	7.8	21
61	Characterization of odorous compounds and odor load in indoor air of modern complex MBT facilities. <i>Chemical Engineering Journal</i> , 2017, 313, 1311-1319.	12.7	20
62	Recovery of elemental sulfur with a novel integrated bioelectrochemical system with an electrochemical cell. <i>Science of the Total Environment</i> , 2019, 677, 175-183.	8.0	20
63	In-line fast OUR (oxygen uptake rate) measurements for monitoring and control of WWTP. <i>Water Science and Technology</i> , 2002, 45, 19-28.	2.5	19
64	Methanol determination in <i>Pichia pastoris</i> cultures by flow injection analysis. <i>Biotechnology Letters</i> , 2002, 24, 413-417.	2.2	19
65	Characterization of the bacterial community in a biotrickling filter treating high loads of H ₂ S by molecular biology tools. <i>Water Science and Technology</i> , 2009, 59, 1331-1337.	2.5	19
66	Biomass accumulation in a biofilter treating toluene at high loads – Part 2: Model development, calibration and validation. <i>Chemical Engineering Journal</i> , 2012, 209, 670-676.	12.7	18
67	A review of biotechnologies for the abatement of ammonia emissions. <i>Chemosphere</i> , 2021, 273, 128606.	8.2	18
68	Optimization of oxygen transfer through venturi-based systems applied to the biological sweetening of biogas. <i>Journal of Chemical Technology and Biotechnology</i> , 2012, 87, 854-860.	3.2	17
69	Startup and long-term performance of biotrickling filters packed with polyurethane foam and poplar wood chips treating a mixture of ethylmercaptan, H ₂ S, and NH ₃ . <i>Journal of the Air and Waste Management Association</i> , 2013, 63, 462-471.	1.9	17
70	Evaluation of sustainable manufacturing of pellets combining wastes from olive oil and forestry industries. <i>Industrial Crops and Products</i> , 2019, 134, 338-346.	5.2	17
71	Optimisation of the operational parameters for a comprehensive bioelectrochemical treatment of acid mine drainage. <i>Journal of Hazardous Materials</i> , 2021, 409, 124944.	12.4	17
72	Successful sulphide-driven partial denitrification: Efficiency, stability and resilience in SRT-controlled conditions. <i>Chemosphere</i> , 2022, 295, 133936.	8.2	17

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73	Development of a kinetic model for elemental sulfur and sulfate formation from the autotrophic sulfide oxidation using respirometric techniques. <i>Water Science and Technology</i> , 2009, 59, 1323-1329.	2.5	16
74	Greenhouse Gas from Organic Waste Composting: Emissions and Measurement. <i>Environmental Chemistry for A Sustainable World</i> , 2015, , 33-70.	0.5	16
75	Versatile Three-Dimensional-Printed Platform for Nitrite Ion Analyses Using a Smartphone with Real-Time Location. <i>Analytical Chemistry</i> , 2019, 91, 13916-13923.	6.5	16
76	Coupling respirometry and titrimetry for the characterization of the biological activity of a SO-NR consortium. <i>Chemical Engineering Journal</i> , 2014, 251, 111-115.	12.7	15
77	Inkjet-Printed Sulfide-Selective Electrode. <i>Analytical Chemistry</i> , 2017, 89, 12231-12236.	6.5	15
78	Retrofitting of an Industrial Chemical Scrubber into a Biotrickling Filter: Performance at a Gas Contact Time below 1s. <i>Journal of Environmental Engineering, ASCE</i> , 2009, 135, 359-366.	1.4	14
79	Electrochemical Biosensor Based on Optimized Biocomposite for Organophosphorus and Carbamates Pesticides Detection. <i>Journal of Nanomaterials</i> , 2018, 2018, 1-13.	2.7	14
80	A Distributed Control System Based on Agent Architecture for Wastewater Treatment. <i>Computer-Aided Civil and Infrastructure Engineering</i> , 2002, 17, 93-103.	9.8	13
81	Environmental assessment of different biofilters for the treatment of gaseous streams. <i>Journal of Environmental Management</i> , 2013, 129, 463-470.	7.8	13
82	Profiling of oxygen in biofilms using individually addressable disk microelectrodes on a microfabricated needle. <i>Mikrochimica Acta</i> , 2015, 182, 985-993.	5.0	13
83	Feasibility of S-rich streams valorization through a two-step biosulfur production process. <i>Chemosphere</i> , 2020, 253, 126734.	8.2	13
84	Interaction between sorption and biodegradation in a biofilter packed with activated carbon. <i>Water Science and Technology</i> , 2012, 66, 1743-1750.	2.5	12
85	Biofiltration of WWTP sludge composting emissions at contact times of 2â€“10s by structured/unstructured packing materials. <i>Process Biochemistry</i> , 2015, 50, 1405-1412.	3.7	12
86	Characterization and evaluation of poplar and pine wood in twin biotrickling filters treating a mixture of NH ₃ , H ₂ S, butyric acid, and ethylmercaptan. <i>Environmental Progress and Sustainable Energy</i> , 2017, 36, 171-179.	2.3	12
87	Biofilm dynamics characterization using a novel DO-MEA sensor: mass transport and biokinetics. <i>Applied Microbiology and Biotechnology</i> , 2015, 99, 55-66.	3.6	11
88	Evolution of physical-chemical parameters, microbial diversity and VOC emissions of olive oil mill waste exposed to ambient conditions in open reservoirs. <i>Waste Management</i> , 2018, 79, 501-509.	7.4	11
89	Screening of biological sulfate reduction conditions for sulfidogenesis promotion using a methanogenic granular sludge. <i>Chemosphere</i> , 2018, 210, 557-566.	8.2	10
90	Exploring the performance limits of a sulfidogenic UASB during the long-term use of crude glycerol as electron donor. <i>Science of the Total Environment</i> , 2019, 688, 1184-1192.	8.0	10

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91	A dynamic model for ammonia abatement by gas-phase biofiltration including pH and leachate modelling. <i>Biosystems Engineering</i> , 2007, 97, 431-440.	4.3	9
92	Influence of crude glycerol load and pH shocks on the granulation and microbial diversity of a sulfidogenic Upflow Anaerobic Sludge Blanket reactor. <i>Chemical Engineering Research and Design</i> , 2020, 133, 159-168.	5.6	9
93	Biomass fuel production from cellulosic sludge through biodrying: Aeration strategies, quality of end-products, gaseous emissions and techno-economic assessment. <i>Waste Management</i> , 2021, 126, 487-496.	7.4	9
94	Biotrickling Filter Technology. , 2005, , 147-168.		8
95	A Minimally Invasive Microsensor Specially Designed for Simultaneous Dissolved Oxygen and pH Biofilm Profiling. <i>Sensors</i> , 2019, 19, 4747.	3.8	8
96	Application of Bioelectrochemical Systems for the Treatment of Wastewaters With Sulfur Species. , 2019, , 641-663.		8
97	Microbial Diversity Dynamics in a Methanogenic-Sulfidogenic UASB Reactor. <i>International Journal of Environmental Research and Public Health</i> , 2021, 18, 1305.	2.6	8
98	Assessing main process mechanism and rates of sulfate reduction by granular biomass fed with glycerol under sulfidogenic conditions. <i>Chemosphere</i> , 2022, 286, 131649.	8.2	8
99	Optimization of Oxygen Transfer through Membrane Diffusers for Biological Sweetening of Biogas. <i>Chemical Engineering and Technology</i> , 2013, 36, 513-518.	1.5	7
100	Assessing Concentration Changes of Odorant Compounds in the Thermal-Mechanical Drying Phase of Sediment-Like Wastes from Olive Oil Extraction. <i>Applied Sciences (Switzerland)</i> , 2019, 9, 519.	2.5	7
101	Implementation of a Sulfide-Air Fuel Cell Coupled to a Sulfate-Reducing Biocathode for Elemental Sulfur Recovery. <i>International Journal of Environmental Research and Public Health</i> , 2021, 18, 5571.	2.6	7
102	Odors Emitted from Biological Waste and Wastewater Treatment Plants: A Mini-Review. <i>Atmosphere</i> , 2022, 13, 798.	2.3	7
103	Kinetic Characterization by Respirometry of Volatile Organic Compound-Degrading Biofilms from Gas-Phase Biological Filters. <i>Industrial & Engineering Chemistry Research</i> , 2014, 53, 19405-19415.	3.7	6
104	Biofilm Oxygen Profiling using an Array of Microelectrodes on a Microfabricated Needle. <i>Procedia Engineering</i> , 2014, 87, 256-259.	1.2	6
105	BIOTRICKLING FILTERS FOR POTWs AIR TREATMENT: FULL-SCALE EXPERIENCE WITH A CONVERTED SCRUBBER. <i>Proceedings of the Water Environment Federation</i> , 2002, 2002, 657-669.	0.0	5
106	The effect of packing hydrophilization on bacterial attachment and the relationship with the performance of biotrickling filters. <i>Biotechnology and Bioengineering</i> , 2009, 103, 1060-1067.	3.3	5
107	Evaluating and modeling biological sulfur production in the treatment of sulfide-laden streams containing ammonium. <i>Journal of Chemical Technology and Biotechnology</i> , 2021, 96, 439-447.	3.2	5
108	Model-Based Analysis of Feedback Control Strategies in Aerobic Biotrickling Filters for Biogas Desulfurization. <i>Processes</i> , 2021, 9, 208.	2.8	5

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109	Tannery Wastewater Recalcitrant Compounds Foster the Selection of Fungi in Non-Sterile Conditions: A Pilot Scale Long-Term Test. <i>International Journal of Environmental Research and Public Health</i> , 2021, 18, 6348.	2.6	5
110	Multipoint characterization of the emission of odour, volatile organic compounds and greenhouse gases from a full-scale membrane-based municipal WWTP. <i>Journal of Environmental Management</i> , 2022, 313, 115002.	7.8	5
111	Capillary membrane bioreactor for abatement of low soluble compounds in waste gas. <i>Journal of Chemical Technology and Biotechnology</i> , 2018, 93, 548-556.	3.2	4
112	Coupling dissolved oxygen microsensors measurements and heterogeneous respirometry for monitoring and modeling microbial activity within sulfide-oxidizing biofilms. <i>Chemical Engineering Journal</i> , 2020, 400, 125846.	12.7	4
113	Less is More: A Comprehensive Study on the Effects of the Number of Gas Diffusion Layers on Air-Cathode Microbial Fuel Cells. <i>ChemElectroChem</i> , 2021, 8, 3416-3426.	3.4	4
114	Titrimetry as a tool for the on-line monitoring of biological activity in a desulfurizing biotrickling filter under aerobic conditions. <i>Chemical Engineering Research and Design</i> , 2019, 124, 151-157.	5.6	3
115	Optimization of SO ₂ and NO _x sequential wet absorption in a two-stage bioscrubber for elemental sulphur valorisation. <i>Environmental Science and Pollution Research</i> , 2021, 28, 24605-24617.	5.3	3
116	Evaluation of sludge-based carbon as packing material in biofiltration in comparison to classic materials. <i>Water Practice and Technology</i> , 2009, 4, .	2.0	2
117	Respirometric techniques coupled with laboratory-scale tests for kinetic and stoichiometric characterisation of fungal and bacterial tannin-degrading biofilms. <i>Water Science and Technology</i> , 2020, 81, 2559-2567.	2.5	2
118	ODOROUS COMPOUNDS EMISSIONS FROM BIOTRICKLING FILTERS AT WASTEWATER TREATMENT PLANTS. <i>Proceedings of the Water Environment Federation</i> , 2004, 2004, 265-276.	0.0	1
119	Data extracted from olive oil mill waste exposed to ambient conditions. <i>Data in Brief</i> , 2019, 26, 104555.	1.0	1
120	Life cycle assessment of biofiltration. , 2020, , 89-108.		1
121	Technical and economical analysis of the conversion of a full-scale scrubber to a biotrickling filter for odor control. <i>Water Science and Technology</i> , 2004, 50, 309-18.	2.5	1
122	Mechanistic modeling of glycerol fermenting and sulfate-reducing processes by granular sludge under sulfidogenic conditions. <i>Journal of Environmental Chemical Engineering</i> , 2022, , 107937.	6.7	1
123	Development and validation of a dynamic complex model for ammonia removal by gas-phase biofiltration. <i>Computer Aided Chemical Engineering</i> , 2005, , 337-342.	0.5	0
124	Study of the biomass accumulation from inoculation to clogging in a biofilter treating toluene at high loads. , 2010, , 223-226.		0
125	Short term characterization of a H ₂ S biotrickling filter packing using a gaseous-liquid respirometer. , 2010, , 255-260.		0
126	Oxidation of biologically-produced elemental sulfur at neutrophilic conditions. , 2010, , 237-241.		0