

Edward T Zellers

List of Publications by Year in descending order

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95
papers

3,622
citations

117625

34
h-index

149698

56
g-index

95
all docs

95
docs citations

95
times ranked

1835
citing authors

#	ARTICLE	IF	CITATIONS
1	First-generation hybrid MEMS gas chromatograph. <i>Lab on A Chip</i> , 2005, 5, 1123.	6.0	205
2	Optimal Coating Selection for the Analysis of Organic Vapor Mixtures with Polymer-Coated Surface Acoustic Wave Sensor Arrays. <i>Analytical Chemistry</i> , 1995, 67, 1092-1106.	6.5	139
3	Dual-Chemiresistor GC Detector Employing Monolayer-Protected Metal Nanocluster Interfaces. <i>Analytical Chemistry</i> , 2002, 74, 3533-3539.	6.5	133
4	Analyzing organic vapors in exhaled breath using a surface acoustic wave sensor array with preconcentration: Selection and characterization of the preconcentrator adsorbent. <i>Analytica Chimica Acta</i> , 1998, 371, 131-143.	5.4	132
5	Characterization of polymeric surface acoustic wave sensor coatings and semiempirical models of sensor responses to organic vapors. <i>Analytical Chemistry</i> , 1993, 65, 2055-2066.	6.5	119
6	Vapor Recognition with Small Arrays of Polymer-Coated Microsensors. A Comprehensive Analysis. <i>Analytical Chemistry</i> , 1999, 71, 3877-3886.	6.5	114
7	A Dual-Adsorbent Preconcentrator for a Portable Indoor-VOC Microsensor System. <i>Analytical Chemistry</i> , 2001, 73, 3449-3457.	6.5	113
8	Portable Gas Chromatograph with Tunable Retention and Sensor Array Detection for Determination of Complex Vapor Mixtures. <i>Analytical Chemistry</i> , 2003, 75, 1400-1409.	6.5	110
9	Single-Phase Synthesis of Functionalized Gold Nanoparticles. <i>Chemistry of Materials</i> , 2004, 16, 3513-3517.	6.7	108
10	Model of Vapor-Induced Resistivity Changes in Gold-Thiolate Monolayer-Protected Nanoparticle Sensor Films. <i>Analytical Chemistry</i> , 2007, 79, 4977-4986.	6.5	102
11	Microfabricated Gas Chromatograph for the Selective Determination of Trichloroethylene Vapor at Sub-Parts-Per-Billion Concentrations in Complex Mixtures. <i>Analytical Chemistry</i> , 2011, 83, 7198-7206.	6.5	94
12	Use of Linear Solvation Energy Relationships for Modeling Responses from Polymer-Coated Acoustic-Wave Vapor Sensors. <i>Analytical Chemistry</i> , 2001, 73, 3458-3466.	6.5	93
13	Effects of Temperature and Humidity on the Performance of Polymer-Coated Surface Acoustic Wave Vapor Sensor Arrays. <i>Analytical Chemistry</i> , 1996, 68, 2409-2418.	6.5	88
14	Characterization of a high-performance portable GC with a chemiresistor array detector. <i>Analyst, The</i> , 2009, 134, 283-293.	3.5	80
15	Limits of Recognition for Simple Vapor Mixtures Determined with a Microsensor Array. <i>Analytical Chemistry</i> , 2004, 76, 1885-1895.	6.5	74
16	Microfabricated Gas Chromatograph for Rapid, Trace-Level Determinations of Gas-Phase Explosive Marker Compounds. <i>Analytical Chemistry</i> , 2014, 86, 655-663.	6.5	74
17	Vapor recognition with an integrated array of polymer-coated flexural plate wave sensors. <i>Sensors and Actuators B: Chemical</i> , 2000, 62, 121-130.	7.8	66
18	Multi-adsorbent preconcentration/focusing module for portable-GC/microsensor-array analysis of complex vapor mixtures. <i>Analyst, The</i> , 2002, 127, 1061-1068.	3.5	64

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19	Assessing the reliability of wall-coated microfabricated gas chromatographic separation columns. <i>Sensors and Actuators B: Chemical</i> , 2009, 141, 217-226.	7.8	60
20	Evaluation of Multitransducer Arrays for the Determination of Organic Vapor Mixtures. <i>Analytical Chemistry</i> , 2008, 80, 227-236.	6.5	55
21	A Portable, High-Speed, Vacuum-Outlet GC Vapor Analyzer Employing Air as Carrier Gas and Surface Acoustic Wave Detection. <i>Analytical Chemistry</i> , 2001, 73, 4668-4675.	6.5	54
22	The Fractional Free Volume of the Sorbed Vapor in Modeling the Viscoelastic Contribution to Polymer-Coated Surface Acoustic Wave Vapor Sensor Responses. <i>Analytical Chemistry</i> , 2000, 72, 2861-2868.	6.5	53
23	Three-dimensional solubility parameters and chemical protective clothing permeation. I. Modeling the solubility of organic solvents in Viton [®] gloves. <i>Journal of Applied Polymer Science</i> , 1993, 50, 513-530.	2.6	48
24	Establishing a Limit of Recognition for a Vapor Sensor Array. <i>Analytical Chemistry</i> , 1998, 70, 4191-4201.	6.5	48
25	Microfabricated thermal modulator for comprehensive two-dimensional micro gas chromatography: design, thermal modeling, and preliminary testing. <i>Lab on A Chip</i> , 2010, 10, 1647.	6.0	46
26	Investigation of Organic Vapor Losses to Condensed Water Vapor in Tedlar [®] Bags Used for Exhaled-Breath Sampling. <i>AIHA Journal</i> , 1996, 57, 257-263.	0.4	42
27	High-Speed Analysis of Complex Indoor VOC Mixtures by Vacuum-Outlet GC with Air Carrier Gas and Programmable Retention. <i>Environmental Science & Technology</i> , 2001, 35, 163-169.	10.0	41
28	1/4GC – 1/4GC: Comprehensive Two-Dimensional Gas Chromatographic Separations with Microfabricated Components. <i>Analytical Chemistry</i> , 2015, 87, 1630-1637.	6.5	40
29	A microfabricated optofluidic ring resonator for sensitive, high-speed detection of volatile organic compounds. <i>Lab on A Chip</i> , 2014, 14, 3873-3880.	6.0	39
30	Comprehensive Two-Dimensional Gas Chromatographic Separations with a Microfabricated Thermal Modulator. <i>Analytical Chemistry</i> , 2012, 84, 6973-6980.	6.5	38
31	Hybrid preconcentrator/focuser module for determinations of explosive marker compounds with a micro-scale gas chromatograph. <i>Journal of Chromatography A</i> , 2013, 1279, 76-85.	3.7	38
32	Computer modelling of polymer-coated ZnO/Si surface-acoustic-wave and lamb-wave chemical sensors. <i>Sensors and Actuators</i> , 1988, 14, 35-45.	1.7	35
33	Limits of Recognition for Binary and Ternary Vapor Mixtures Determined with Multitransducer Arrays. <i>Analytical Chemistry</i> , 2008, 80, 7283-7293.	6.5	35
34	Multi-stage preconcentrator/focuser module designed to enable trace level determinations of trichloroethylene in indoor air with a microfabricated gas chromatograph. <i>Analyst, The</i> , 2011, 136, 1664.	3.5	35
35	Belt-Mounted Micro-Gas-Chromatograph Prototype for Determining Personal Exposures to Volatile-Organic-Compound Mixture Components. <i>Analytical Chemistry</i> , 2019, 91, 4747-4754.	6.5	35
36	Evaluation of a Microfabricated Thermal Modulator for Comprehensive Two-Dimensional Microscale Gas Chromatography. <i>Analytical Chemistry</i> , 2011, 83, 5556-5562.	6.5	34

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37	Extended disjoint principal-components regression analysis of SAW vapor sensor-array responses. <i>Sensors and Actuators B: Chemical</i> , 1993, 12, 123-133.	7.8	33
38	MODELING THE TEMPERATURE DEPENDENCE OF N-METHYLPYRROLIDONE PERMEATION THROUGH BUTYL- AND NATURAL-RUBBER GLOVES. <i>AIHA Journal</i> , 1993, 54, 465-479.	0.4	33
39	Improved methods for the determination of Hansen's solubility parameters and the estimation of solvent uptake for lightly crosslinked polymers. <i>Journal of Applied Polymer Science</i> , 1996, 62, 2081-2096.	2.6	31
40	Three-dimensional solubility parameters and chemical protective clothing permeation. II. Modeling diffusion coefficients, breakthrough times, and steady-state permeation rates of organic solvents in Viton® gloves. <i>Journal of Applied Polymer Science</i> , 1993, 50, 531-540.	2.6	30
41	High-Speed, Vacuum-Outlet GC Using Atmospheric-Pressure Air as Carrier Gas. <i>Analytical Chemistry</i> , 1999, 71, 1610-1616.	6.5	29
42	Microfabricated optofluidic ring resonator structures. <i>Applied Physics Letters</i> , 2011, 99, 141108-1411083.	3.3	29
43	Microfabricated passive vapor preconcentrator/injector designed for microscale gas chromatography. <i>Lab on A Chip</i> , 2012, 12, 717.	6.0	28
44	Critical analysis of the graphical determination of Hansen's solubility parameters for lightly crosslinked polymers. <i>Journal of Applied Polymer Science</i> , 1996, 62, 2069-2080.	2.6	27
45	Prototype Instrument Employing a Microsensor Array for the Analysis of Organic Vapors in Exhaled Breath. <i>AIHA Journal</i> , 1996, 57, 1103-1108.	0.4	27
46	Compact prototype microfabricated gas chromatographic analyzer for autonomous determinations of VOC mixtures at typical workplace concentrations. <i>Microsystems and Nanoengineering</i> , 2018, 4, .	7.0	27
47	Estimation of Cumulative Exposures for the National Study of Coal Workers' Pneumoconiosis. <i>Journal of Occupational and Environmental Hygiene</i> , 1991, 6, 1032-1041.	0.4	26
48	Investigation of nematic liquid crystals as surface acoustic wave sensor coatings for discrimination between isomeric aromatic organic vapors. <i>Analytica Chimica Acta</i> , 1994, 288, 167-177.	5.4	26
49	Selective real-time measurement of styrene vapor using a surface-acoustic-wave sensor with a regenerable organoplatinum coating. <i>Analytical Chemistry</i> , 1990, 62, 1227-1232.	6.5	24
50	Characterization of Dense Arrays of Chemiresistor Vapor Sensors with Submicrometer Features and Patterned Nanoparticle Interface Layers. <i>Analytical Chemistry</i> , 2011, 83, 3687-3695.	6.5	24
51	Microfabricated Gas Chromatograph for On-Site Determination of Trichloroethylene in Indoor Air Arising from Vapor Intrusion. 1. Field Evaluation. <i>Environmental Science & Technology</i> , 2012, 46, 6065-6072.	10.0	22
52	Personal Monitoring Instrument for the Selective Measurement of Multiple Organic Vapors. <i>AIHA Journal</i> , 2000, 61, 192-204.	0.4	22
53	ASTM F739 Method for Testing the Permeation Resistance of Protective Clothing Materials: Critical Analysis with Proposed Changes in Procedure and Test-Cell Design. <i>AIHA Journal</i> , 1998, 59, 547-556.	0.4	21
54	Exploiting Charge-Transfer Complexation for Selective Measurement of Gas-Phase Olefins with Nanoparticle-Coated Chemiresistors. <i>Analytical Chemistry</i> , 2007, 79, 1164-1172.	6.5	21

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55	Microfabricated Gas Chromatograph for On-Site Determinations of TCE in Indoor Air Arising from Vapor Intrusion. 2. Spatial/Temporal Monitoring. <i>Environmental Science & Technology</i> , 2012, 46, 6073-6080.	10.0	21
56	Evaluating porous-layer open-tubular capillaries as vapor preconcentrators in a microanalytical system. <i>Sensors and Actuators B: Chemical</i> , 2000, 67, 244-253.	7.8	20
57	Rapid determination of ETS markers with a prototype field-portable GC employing a microsensor array detector. <i>Journal of Environmental Monitoring</i> , 2007, 9, 440.	2.1	20
58	Chemometric analysis of gas chromatographic peaks measured with a microsensor array: Methodology and performance assessment. <i>Sensors and Actuators B: Chemical</i> , 2009, 139, 548-556.	7.8	20
59	Toward a microfabricated preconcentrator-focuser for a wearable micro-scale gas chromatograph. <i>Journal of Chromatography A</i> , 2015, 1422, 299-309.	3.7	20
60	Chamber evaluation of a portable GC with tunable retention and microsensor-array detection for indoor air quality monitoring. <i>Journal of Environmental Monitoring</i> , 2006, 8, 270.	2.1	19
61	A nanoparticle-coated chemiresistor array as a microscale gas chromatograph detector for explosive marker compounds: flow rate and temperature effects. <i>Analyst, The</i> , 2013, 138, 6860.	3.5	19
62	Comprehensive two-dimensional gas chromatographic separations with a temperature programmed microfabricated thermal modulator. <i>Journal of Chromatography A</i> , 2016, 1444, 114-122.	3.7	19
63	Steric factors affecting the discrimination of isomeric and structurally related olefin gases and vapors with a reagent-coated surface acoustic wave sensor. <i>Analytical Chemistry</i> , 1992, 64, 1277-1284.	6.5	17
64	GLOVE PERMEATION BY SEMICONDUCTOR PROCESSING MIXTURES CONTAINING GLYCOL-ETHER DERIVATIVES. <i>AIHA Journal</i> , 1992, 53, 105-116.	0.4	17
65	Analysis of Solvent Vapors in Breath and Ambient Air with a Surface Acoustic Wave Sensor Array. <i>Annals of Occupational Hygiene</i> , 2001, , .	1.9	17
66	In situ UV-photopolymerization of gas-phase monomers for microanalytical system applications. <i>Sensors and Actuators B: Chemical</i> , 2002, 82, 287-296.	7.8	17
67	Use of a surface-acoustic-wave sensor to characterize the reaction of styrene vapor with a square-planar organoplatinum complex. <i>Analytical Chemistry</i> , 1990, 62, 1222-1227.	6.5	16
68	A zone-heated gas chromatographic microcolumn: Energy efficiency. <i>Sensors and Actuators B: Chemical</i> , 2018, 254, 561-572.	7.8	16
69	CMOS Monolithic Nanoparticle-Coated Chemiresistor Array for Micro-Scale Gas Chromatography. <i>IEEE Sensors Journal</i> , 2012, 12, 2444-2452.	4.7	15
70	Polymer-coated micro-optofluidic ring resonator detector for a comprehensive two-dimensional gas chromatographic microsystem: μ GC- μ GC- μ OFRR. <i>Analyst, The</i> , 2016, 141, 261-269.	3.5	15
71	CMOS Baseline Tracking and Cancellation Instrumentation for Nanoparticle-Coated Chemiresistors. <i>IEEE Transactions on Biomedical Circuits and Systems</i> , 2009, 3, 267-276.	4.0	13
72	Evaluating the dynamic retention capacities of microfabricated vapor preconcentrators as a function of flow rate. <i>Sensors and Actuators B: Chemical</i> , 2013, 183, 163-171.	7.8	13

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73	Microfabricated gas chromatograph for Sub-ppb determinations of TCE in vapor intrusion investigations. <i>Procedia Engineering</i> , 2010, 5, 973-976.	1.2	12
74	A Wearable MEMS Gas Chromatograph for Multi-Vapor Determinations. <i>Procedia Engineering</i> , 2016, 168, 1398-1401.	1.2	12
75	Temperature and humidity compensation in the determination of solvent vapors with a microsensor system. <i>Analyst, The</i> , 2000, 125, 1775-1782.	3.5	11
76	Electron-Beam Patterned Monolayer-Protected Gold Nanoparticle Interface Layers on a Chemiresistor Vapor Sensor Array. <i>IEEE Sensors Journal</i> , 2011, 11, 469-480.	4.7	11
77	Coated surface acoustic wave sensor employing a reversible mass-amplifying ligand substitution reaction for real-time measurement of 1,3-butadiene at low- and sub-ppm concentrations. <i>Analytical Chemistry</i> , 1993, 65, 1340-1349.	6.5	10
78	Vapor discrimination by dual-laser reflectance sensing of a single functionalized nanoparticle film. <i>Analytical Methods</i> , 2013, 5, 4268.	2.7	10
79	Influence of substituent and ligand electronic factors on the measurement of gas phase olefins using a surface acoustic wave oscillator coated with trans-PtCl ₂ (olefin)(amine) complexes. <i>Analytica Chimica Acta</i> , 1993, 280, 1-13.	5.4	9
80	Multivariate curve resolution of co-eluting vapors from a gas chromatograph with microsensor array detector. <i>Sensors and Actuators B: Chemical</i> , 2014, 202, 167-176.	7.8	9
81	DEVELOPMENT OF A FIELD METHOD FOR EVALUATING THE SERVICE LIVES OF ORGANIC VAPOR CARTRIDGES: RESULTS OF LABORATORY TESTING USING CARBON TETRACHLORIDE. PART II: HUMIDITY EFFECTS. <i>AIHA Journal</i> , 1990, 51, 575-580.	0.4	8
82	Determination of solvents permeating through chemical protective clothing with a microsensor array. <i>Journal of Environmental Monitoring</i> , 2000, 2, 300-306.	2.1	8
83	Personal Monitoring Instrument for the Selective Measurement of Multiple Organic Vapors. <i>AIHAJ: A Journal for the Science of Occupational and Environmental Health and Safety</i> , 2000, 61, 192-204.	0.4	7
84	Room-temperature-ionic-liquid coated graphitized carbons for selective preconcentration of polar vapors. <i>Journal of Chromatography A</i> , 2020, 1609, 460486.	3.7	7
85	Vapor Discrimination With Single- and Multitransducer Arrays of Nanoparticle-Coated Chemiresistors and Resonators. <i>IEEE Sensors Journal</i> , 2013, 13, 2146-2154.	4.7	6
86	A micro passive preconcentrator for micro gas chromatography. <i>Analyst, The</i> , 2020, 145, 7582-7594.	3.5	6
87	Portable instrument employing a surface acoustic wave sensor with a regenerable reagent coating for direct measurement of 1,3-butadiene and styrene. <i>Review of Scientific Instruments</i> , 1995, 66, 239-246.	1.3	5
88	Glove Permeation by Propylene Glycol Monomethyl Ether Acetate – A Photoresist Solvent Used in Semiconductor Device Processing. <i>Journal of Occupational and Environmental Hygiene</i> , 1992, 7, 392-397.	0.4	3
89	Microscale Gas Chromatography with Microsensor Array Detection: Challenges and Prospects. <i>Proceedings (mdpi)</i> , 2017, 1, 633.	0.2	3
90	A low power, high-speed miniaturized thermal modulator for comprehensive 2D gas chromatography. , 2010, , .		2

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91	Adaptable chip-level microfluidic packaging for a micro-scale gas chromatograph. , 2012, , .		2
92	Respiratory health in asbestos-exposed ironworkers. , 1996, 29, 459-466.		1
93	Application-Specific Micro Gas Chromatographs. ECS Transactions, 2009, 19, 315-325.	0.5	1
94	ASTM F739 Method for Testing the Permeation Resistance of Protective Clothing Materials: Critical Analysis with Proposed Changes in Procedure and Test-Cell Design. AIHA Journal, 1998, 59, 547-556.	0.4	1
95	A Comparison of Multi-Transducer Arrays and Single-Transducer Arrays for the Determination of Multi-Vapor Mixtures. , 2007, , .		0