Stephen C Jacobson

List of Publications by Year
in descending order

150 papers	13,739 citations	22132 59 h-index	20943 115 g-index
155 all docs	155 docs citations	155 times ranked	6843 citing authors

#	Article	IF	Citations
1	Effects of Injection Schemes and Column Geometry on the Performance of Microchip Electrophoresis Devices. Analytical Chemistry, 1994, 66, 1107-1113.	3.2	705
2	Integrated System for Rapid PCR-Based DNA Analysis in Microfluidic Devices. Analytical Chemistry, 2000, 72, 2995-3000.	3.2	524
3	High-Speed Separations on a Microchip. Analytical Chemistry, 1994, 66, 1114-1118.	3.2	469
4	Microchip Device for Cell Lysis, Multiplex PCR Amplification, and Electrophoretic Sizing. Analytical Chemistry, 1998, 70, 158-162.	3.2	434
5	Diffusion coefficient measurements in microfluidic devices. Talanta, 2002, 56, 365-373.	2.9	400
6	Microchip Device for Performing Enzyme Assays. Analytical Chemistry, 1997, 69, 3407-3412.	3.2	379
7	Microchip Capillary Electrophoresis with an Integrated Postcolumn Reactor. Analytical Chemistry, 1994, 66, 3472-3476.	3.2	374
8	Microfluidic Devices for the High-Throughput Chemical Analysis of Cells. Analytical Chemistry, 2003, 75, 5646-5655.	3.2	357
9	Integrated Microdevice for DNA Restriction Fragment Analysis. Analytical Chemistry, 1996, 68, 720-723.	3.2	315
10	Open Channel Electrochromatography on a Microchip. Analytical Chemistry, 1994, 66, 2369-2373.	3.2	310
11	Microchip Structures for Submillisecond Electrophoresis. Analytical Chemistry, 1998, 70, 3476-3480.	3.2	301
12	Precolumn Reactions with Electrophoretic Analysis Integrated on a Microchip. Analytical Chemistry, 1994, 66, 4127-4132.	3.2	291
13	Microfabricated Porous Membrane Structure for Sample Concentration and Electrophoretic Analysis. Analytical Chemistry, 1999, 71, 1815-1819.	3.2	253
14	Multiple Sample PCR Amplification and Electrophoretic Analysis on a Microchip. Analytical Chemistry, 1998, 70, 5172-5176.	3.2	241
15	Flow Cytometry ofEscherichia colion Microfluidic Devices. Analytical Chemistry, 2001, 73, 5334-5338.	3.2	230
16	Fused Quartz Substrates for Microchip Electrophoresis. Analytical Chemistry, 1995, 67, 2059-2063.	3.2	221
17	Computer Simulations of Electrokinetic Transport in Microfabricated Channel Structures. Analytical Chemistry, 1998, 70, 4494-4504.	3.2	221
18	Microfluidic Devices for Electrokinetically Driven Parallel and Serial Mixing. Analytical Chemistry, 1999, 71, 4455-4459.	3.2	221

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19	Microchip Flow Cytometry Using Electrokinetic Focusing. Analytical Chemistry, 1999, 71, 4173-4177.	3.2	213
20	Fundamental Studies of Nanofluidics: Nanopores, Nanochannels, and Nanopipets. Analytical Chemistry, 2015, 87, 172-187.	3.2	213
21	Two-Dimensional Electrochromatography/Capillary Electrophoresis on a Microchip. Analytical Chemistry, 2001, 73, 2669-2674.	3.2	209
22	Microchip electrophoresis with sample stacking. Electrophoresis, 1995, 16, 481-486.	1.3	205
23	Preconcentration of Proteins on Microfluidic Devices Using Porous Silica Membranes. Analytical Chemistry, 2005, 77, 57-63.	3.2	201
24	Microfluidic Assays of Acetylcholinesterase Inhibitors. Analytical Chemistry, 1999, 71, 5206-5212.	3.2	197
25	Computer Simulations of Electrokinetic Injection Techniques in Microfluidic Devices. Analytical Chemistry, 2000, 72, 3512-3517.	3.2	197
26	Microchip Devices for High-Efficiency Separations. Analytical Chemistry, 2000, 72, 5814-5819.	3.2	193
27	High-Efficiency, Two-Dimensional Separations of Protein Digests on Microfluidic Devices. Analytical Chemistry, 2003, 75, 3758-3764.	3.2	189
28	Dispersion Sources for Compact Geometries on Microchips. Analytical Chemistry, 1998, 70, 3781-3789.	3.2	186
29	Sample Filtration, Concentration, and Separation Integrated on Microfluidic Devices. Analytical Chemistry, 2003, 75, 2761-2767.	3.2	167
30	Counting Single Chromophore Molecules for Ultrasensitive Analysis and Separations on Microchip Devices. Analytical Chemistry, 1998, 70, 431-437.	3.2	162
31	Effect of Conical Nanopore Diameter on Ion Current Rectification. Journal of Physical Chemistry B, 2009, 113, 15960-15966.	1.2	161
32	Electrokinetic Focusing in Microfabricated Channel Structures. Analytical Chemistry, 1997, 69, 3212-3217.	3.2	159
33	Solvent-Programmed Microchip Open-Channel Electrochromatography. Analytical Chemistry, 1998, 70, 3291-3297.	3.2	156
34	Microchip Separations of Neutral Species via Micellar Electrokinetic Capillary Chromatography. Analytical Chemistry, 1995, 67, 4184-4189.	3.2	147
35	Chromatographic band profiles and band separation of enantiomers at high concentration. Journal of the American Chemical Society, 1990, 112, 6492-6498.	6.6	136
36	Electroosmotically Induced Hydraulic Pumping with Integrated Electrodes on Microfluidic Devices. Analytical Chemistry, 2001, 73, 4045-4049.	3.2	131

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37	Integrated Microchip Device with Electrokinetically Controlled Solvent Mixing for Isocratic and Gradient Elution in Micellar Electrokinetic Chromatography. Analytical Chemistry, 1997, 69, 5165-5171.	3.2	127
38	Microfabricated chemical measurement systems. Nature Medicine, 1995, 1, 1093-1095.	15.2	124
39	Characterization of Hepatitis B Virus Capsids by Resistive-Pulse Sensing. Journal of the American Chemical Society, 2011, 133, 1618-1621.	6.6	121
40	Electrophoretic Separation of Proteins on a Microchip with Noncovalent, Postcolumn Labeling. Analytical Chemistry, 2000, 72, 4608-4613.	3.2	120
41	Degenerate Oligonucleotide Primedâ€“Polymerase Chain Reaction and Capillary Electrophoretic Analysis of Human DNA on Microchip-Based Devices. Analytical Biochemistry, 1998, 257, 101-106.	1.1	119
42	Ion Transport in Nanofluidic Funnels. ACS Nano, 2010, 4, 3897-3902.	7.3	113
43	Low temperature bonding for microfabrication of chemical analysis devices. Sensors and Actuators B: Chemical, 1997, 45, 199-207.	4.0	112
44	Nanofluidics in Lab-on-a-Chip Devices. Analytical Chemistry, 2009, 81, 7133-7140.	3.2	110
45	Exosome-Mediated Crosstalk between Keratinocytes and Macrophages in Cutaneous Wound Healing. ACS Nano, 2020, 14, 12732-12748.	7.3	106
46	Nanofluidic Devices with Two Pores in Series for Resistive-Pulse Sensing of Single Virus Capsids. Analytical Chemistry, 2011, 83, 9573-9578.	3.2	100
47	Characterization of Cellular Optoporation with Distance. Analytical Chemistry, 2000, 72, 1342-1347.	3.2	99
48	Minimizing the Number of Voltage Sources and Fluid Reservoirs for Electrokinetic Valving in Microfluidic Devices. Analytical Chemistry, 1999, 71, 3273-3276.	3.2	98
49	Solid phase extraction on microfluidic devices. Journal of Separation Science, 2000, 12, 93-97.	1.0	97
50	Electrophoretic injection bias in a microchip valving scheme. Electrophoresis, 2001, 22, 312-317.	1.3	94
51	Determination of isotherms from chromatographic peak shapes. Analytical Chemistry, 1991, 63, 833-839.	3.2	91
52	Electrophoretic Analysis of N-Glycans on Microfluidic Devices. Analytical Chemistry, 2007, 79, 7170-7175.	3.2	88
53	Effects of the electric field distribution on microchip valving performance. Electrophoresis, 2000, 21, 100-106.	1.3	80
54	Optical Trapping with Integrated Near-Field Apertures. Journal of Physical Chemistry B, 2004, 108, 13607-13612.	1.2	80

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55	Electroosmotic Flow in Nanofluidic Channels. Analytical Chemistry, 2014, 86, 11174-11180.	3.2	77
56	Integrated microchip-device for the digestion, separation and postcolumn labeling of proteins and peptides. Biomedical Applications, 2000, 745, 243-249.	1.7	76
57	Surface-Charge Induced Ion Depletion and Sample Stacking near Single Nanopores in Microfluidic Devices. Journal of the American Chemical Society, 2008, 130, 8614-8616.	6.6	71
58	Novel microfabricated device for electrokinetically induced pressure flow and electrospray ionization mass spectrometry. Journal of Chromatography A, 2000, 892, 195-201.	1.8	66
59	Determination of metal cations in microchip electrophoresis using on-chip complexation and sample stacking. Journal of Separation Science, 1998, 10, 313-319.	1.0	63
60	Timescales and Frequencies of Reversible and Irreversible Adhesion Events of Single Bacterial Cells. Analytical Chemistry, 2015, 87, 12032-12039.	3.2	63
61	Chemotaxis Assays of Mouse Sperm on Microfluidic Devices. Analytical Chemistry, 2006, 78, 3354-3359.	3.2	60
62	Integrated Nanopore/Microchannel Devices for ac Electrokinetic Trapping of Particles. Analytical Chemistry, 2008, 80, 657-664.	3.2	59
63	Single-Particle Electrophoresis in Nanochannels. Analytical Chemistry, 2015, 87, 699-705.	3.2	56
64	Isotherm selection for band profile simulations in preparative chromatography. AICHE Journal, 1991, 37, 836-844.	1.8	54
65	Ultrasensitive Cross-Correlation Electrophoresis on Microchip Devices. Analytical Chemistry, 1999, 71, 4460-4464.	3.2	53
66	Comparative Profiling of N-Glycans Isolated from Serum Samples of Ovarian Cancer Patients and Analyzed by Microchip Electrophoresis. Journal of Proteome Research, 2013, 12, 4490-4496.	1.8	51
67	Monitoring Assembly of Virus Capsids with Nanofluidic Devices. ACS Nano, 2015, 9, 9087-9096.	7.3	51
68	Capillary electrophoresisâ€“mass spectrometry for direct structural identification of serum N-glycans. Journal of Chromatography A, 2017, 1523, 127-139.	1.8	47
69	Attoliter-Scale Dispensing in Nanofluidic Channels. Analytical Chemistry, 2007, 79, 1655-1660.	3.2	46
70	Transport and Sensing in Nanofluidic Devices. Annual Review of Analytical Chemistry, 2011, 4, 321-341.	2.8	46
71	N-Glycan Profiling by Microchip Electrophoresis to Differentiate Disease States Related to Esophageal Adenocarcinoma. Analytical Chemistry, 2012, 84, 3621-3627.	3.2	46
72	Structural Characterization of Serum N-Glycans by Methylamidation, Fluorescent Labeling, and Analysis by Microchip Electrophoresis. Analytical Chemistry, 2016, 88, 8965-8971.	3.2	44

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73	Compact Microfluidic Structures for Generating Spatial and Temporal Gradients. Analytical Chemistry, 2007, 79, 9471-9477.	3.2	43
74	Complementary Glycomic Analyses of Sera Derived from Colorectal Cancer Patients by MALDI-TOF-MS and Microchip Electrophoresis. Analytical Chemistry, 2016, 88, 9597-9605.	3.2	43
75	Propagating Concentration Polarization and Ionic Current Rectification in a Nanochannelâ€"Nanofunnel Device. Analytical Chemistry, 2012, 84, 267-274.	3.2	41
76	Measurement of the heats of adsorption of chiral isomers on an enantioselective stationary phase. Journal of Chromatography A, 1990, 522, 23-36.	1.8	40
77	PCR Amplification and Analysis of Simple Sequence Length Polymorphisms in Mouse DNA Using a Single Microchip Device. Analytical Biochemistry, 2000, 277, 157-160.	1.1	40
78	Short-Stalked Prosthecomicrobium hirschii Cells Have a Caulobacter-Like Cell Cycle. Journal of Bacteriology, 2016, 198, 1149-1159.	1.0	40
79	In-Depth Compositional and Structural Characterization of N-Glycans Derived from Human Urinary Exosomes. Analytical Chemistry, 2019, 91, 13528-13537.	3.2	37
80	Study of band broadening in enantioselective separations using microcrystalline cellulose triacetate. Journal of Chromatography A, 1993, 637, 19-28.	1.8	36
81	Stacking due to ionic transport number mismatch during sample sweeping on microchips. Lab on A Chip, 2005, 5, 457.	3.1	36
82	Characterization of Virus Capsids and Their Assembly Intermediates by Multicycle Resistive-Pulse Sensing with Four Pores in Series. Analytical Chemistry, 2018, 90, 7267-7274.	3.2	35
83	Microchip electrophoresis of <i>N</i>â€glycans on serpentine separation channels with asymmetrically tapered turns. Electrophoresis, 2011, 32, 246-253.	1.3	34
84	Electrohydrodynamic mixing in microchannels. AIChE Journal, 2003, 49, 2181-2186.	1.8	33
85	Static and Dynamic Acute Cytotoxicity Assays on Microfluidic Devices. Analytical Chemistry, 2005, 77, 667-672.	3.2	33
86	Modeling of the adsorption behavior and the chromatographic band profiles of enantiomers. Journal of Chromatography A, 1993, 630, 21-35.	1.8	32
87	Analytical Techniques to Characterize the Structure, Properties, and Assembly of Virus Capsids. Analytical Chemistry, 2019, 91, 622-636.	3.2	30
88	Prediction of high concentration band profiles in liquid chromatography. Accounts of Chemical Research, 1992, 25, 366-374.	7.6	29
89	Effects of Microfabrication Processing on the Electrochemistry of Carbon Nanofiber Electrodes. Journal of Physical Chemistry B, 2003, 107, 10722-10728.	1.2	29
90	Nanofluidic Devices with 8 Pores in Series for Real-Time, Resistive-Pulse Analysis of Hepatitis B Virus Capsid Assembly. Analytical Chemistry, 2017, 89, 4855-4862.	3.2	28

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91	An electrochromatography chip with integrated waveguides for UV absorbance detection. Journal of Micromechanics and Microengineering, 2008, 18, 055021.	1.5	26
92	AC Electroosmotic Pumping in Nanofluidic Funnels. Analytical Chemistry, 2016, 88, 6390-6394.	3.2	26
93	Enantiomeric separations using bovine serum albumin immobilized on ion-exchange stationary phases. Analytical Chemistry, 1992, 64, 1496-1498.	3.2	25
94	Three-Dimensional Mapping of the Light Intensity Transmitted through Nanoapertures. Nano Letters, 2005, 5, 1227-1230.	4.5	25
95	Software-programmable continuous-flow multi-purpose lab-on-a-chip. Microfluidics and Nanofluidics, 2013, 15, 647-659.	1.0	24
96	Conductivity-based detection techniques in nanofluidic devices. Analyst, The, 2015, 140, 4779-4791.	1.7	24
97	Aquacore. , 2007, , .		23
98	Electrokinetic Fluid Control in Two-Dimensional Planar Microfluidic Devices. Analytical Chemistry, 2007, 79, 7485-7491.	3.2	23
99	Water-assisted femtosecond laser machining of electrospray nozzles on glass microfluidic devices. Optics Express, 2008, 16, 15206.	1.7	23
100	Electrophoretic separation of proteins on microchips. Journal of Separation Science, 2000, 12, 407-411.	1.0	22
101	A molecular breadboard: Removal and replacement of subunits in a hepatitis B virus capsid. Protein Science, 2017, 26, 2170-2180.	3.1	22
102	Contribution of ionically immobilized bovine serum albumin to the retention of enantiomers. Journal of Chromatography A, 1992, 600, 37-42.	1.8	21
103	Optimizing the sample size and the reduced velocity to achieve maximum production rates of enantiomers. Biotechnology Progress, 1992, 8, 533-539.	1.3	20
104	Optimizing the sample size and the retention parameters to achieve maximum production rates for enantiomers in chiral chromatography. Biotechnology and Bioengineering, 1992, 40, 1210-1217.	1.7	19
105	Study of band broadening in enantioselective separations using microcrystalline cellulose triacetate. Journal of Chromatography A, 1993, 637, 13-18.	1.8	19
106	Noc Corrals Migration of FtsZ Protofilaments during Cytokinesis in Bacillus subtilis. MBio, 2021, 12, .	1.8	19
107	Experimental study of the production rate of pure enantiomers from racemic mixtures. Journal of Chromatography A, 1992, 590, 119-126.	1.8	18
108	3D Nanofluidic Channels Shaped by Electronâ€Beamâ€Induced Etching. Small, 2012, 8, 1521-1526.	5.2	17

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109	Competition between Normative and Drug-Induced Virus Self-Assembly Observed with Single-Particle Methods. Journal of the American Chemical Society, 2019, 141, 1251-1260.	6.6	17
110	Strategy for Repetitive Pinched Injections on a Microfluidic Device. Analytical Chemistry, 2004, 76, 6053-6057.	3.2	16
111	Microchannel-Nanopore Device for Bacterial Chemotaxis Assays. Analytical Chemistry, 2010, 82, 9357-9364.	3.2	16
112	Programmable, Pneumatically Actuated Microfluidic Device with an Integrated Nanochannel Array To Track Development of Individual Bacteria. Analytical Chemistry, 2016, 88, 8476-8483.	3.2	16
113	Single Particle Observation of SV40 VP1 Polyanion-Induced Assembly Shows That Substrate Size and Structure Modulate Capsid Geometry. ACS Chemical Biology, 2017, 12, 1327-1334.	1.6	16
114	Arsenic exposure induces a bimodal toxicity response in zebrafish. Environmental Pollution, 2021, 287, 117637.	3.7	16
115	Estimation of the number of enantioselective sites of bovine serum albumin using frontal chromatography. Chirality, 1993, 5, 513-515.	1.3	15
116	Theoretical study of multi-component interferences in non-linear chromatography. Journal of Chromatography A, 1989, 484, 103-124.	1.8	13
117	Evolution of Intermediates during Capsid Assembly of Hepatitis B Virus with Phenylpropenamide-Based Antivirals. ACS Infectious Diseases, 2019, 5, 769-777.	1.8	13
118	Nitric oxide stimulates type IV MSHA pilus retraction in <i>Vibrio cholerae</i> via activation of the phosphodiesterase CdpA. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	13
119	Microfluidic Device for Automated Synchronization of Bacterial Cells. Analytical Chemistry, 2012, 84, 8571-8578.	3.2	12
120	Glycoproteomic Analysis of Human Urinary Exosomes. Analytical Chemistry, 2020, 92, 14357-14365.	3.2	12
121	Asymmetrizing an icosahedral virus capsid by hierarchical assembly of subunits with designed asymmetry. Nature Communications, 2021, 12, 589.	5.8	12
122	Polymer microparticle arrays from electrodynamically focused microdroplet streams. Review of Scientific Instruments, 2000, 71, 2497-2499.	0.6	11
123	Fabrication of Three-Dimensional Micro- and Nanoscale Features with Single-Exposure Photolithography. Analytical Chemistry, 2006, 78, 5214-5217.	3.2	11
124	Electrokinetic Transport Through Nanometer Deep Channels. , 2001, , 57-59.		10
125	Influence of channel position on sample confinement in two-dimensional planar microfluidic devices. Lab on A Chip, 2008, 8, 316-322.	3.1	9
126	Microchip electrophoresis at elevated temperatures and high separation field strengths. Electrophoresis, 2014, 35, 374-378.	1.3	9

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127	The Min System Disassembles FtsZ Foci and Inhibits Polar Peptidoglycan Remodeling in Bacillus subtilis. MBio, 2020, 11, .	1.8	9
128	Disassembly of Single Virus Capsids Monitored in Real Time with Multicycle Resistive-Pulse Sensing. Analytical Chemistry, 2022, 94, 985-992.	3.2	9
129	DOP-PCR Amplification of Whole Genomic DNA and Microchip-Based Capillary Electrophoresis. , 2001, 163, 211-219.		8
130	Influence of the mobile phase composition on the adsorption isotherms of an amino-acid derivative on immobilized bovine serum albumin. Chromatographia, 1991, 31, 323-328.	0.7	8
131	Automatic volume management for programmable microfluidics. , 2008, , .		8
132	Serial-to-Parallel Interfaces for Efficient Sample Transfer on Microfluidic Devices. Analytical Chemistry, 2009, 81, 1477-1481.	3.2	7
133	Aquacore. Computer Architecture News, 2007, 35, 254-265.	2.5	6
134	A diffusion-based cyclic particle extractor. Microfluidics and Nanofluidics, 2010, 9, 743-753.	1.0	6
135	System Design of Two Dimensional Microchip Separation Devices. , 2001, , 63-65.		6
136	The Division Defect of a<i>Bacillus subtilis minD noc</i>Double Mutant Can Be Suppressed by Spx-Dependent and Spx-Independent Mechanisms. Journal of Bacteriology, 2021, 203, e0024921.	1.0	5
137	In-Plane, In-Series Nanopores with Circular Cross Sections for Resistive-Pulse Sensing. ACS Nano, 2022, 16, 7352-7360.	7.3	5
138	Single Cell Lysis on Microfluidic Devices. , 2001, , 301-302.		3
139	Computer Simulations for Microchip Electrophoresis. , 1998, , 149-152.		3
140	High Performance Two Dimensional Separations of Tryptic Digests on Microfluidic Devices. , 2002, , 608-610.		2
141	Rapid Electrophoretic and Chromatographic Analysis on Microchips. , 1998, , 315-318.		2
142	Fractionation and characterization of sialyl linkage isomers of serum Nâ€glycans by CEâ€“MS. Journal of Separation Science, 2022, 45, 3348-3361.	1.3	2
143	High Efficiency Separations on Microchip Devices. , 2000, , 221-224.		1
144	Microfluidics. , 2005, , 19-54.		1

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145	Automatic volume management for programmable microfluidics. ACM SIGPLAN Notices, 2008, 43, 56-67.	0.2	0
146	Computer Simulations of Electrokinetic Sample Manipulations in Microfluidic Devices. , 2000, , 291-294.		0
147	Microfabricated Fluidic Devices for Cellular Assays. , 2000, , 107-110.		0
148	Sample Concentration and Separation on Microchips. , 2001, , 537-538.		0
149	Minimizing Dispersion Introduced by Turns on Microchips. , 1998, , 161-164.		0
150	FIB-Milled Nanopore Sensors for Tracking Virus Assembly. Microscopy and Microanalysis, 2016, 22, 150-151.	0.2	0