Gert Desmet

List of Publications by Citations

282 papers	6,037 citations	41 h-index	57 g-index
293 ext. papers	6,574 ext. citations	4.9 avg, IF	6.09 L-index

#	Paper	IF	Citations
282	Geometry-independent plate height representation methods for the direct comparison of the kinetic performance of LC supports with a different size or morphology. *Analytical Chemistry*, **2005**, 77, 4058-70	7.8	225
281	Performance of monolithic silica capillary columns with increased phase ratios and small-sized domains. *Analytical Chemistry*, **2006**, 78, 7632-42	7.8	142
280	Pressure-driven reverse-phase liquid chromatography separations in ordered nonporous pillar array columns. *Analytical Chemistry*, **2007**, 79, 5915-26	7.8	129
279	Fundamentals for LC miniaturization. *Analytical Chemistry*, **2013**, 85, 543-56	7.8	111
278	Silica□MOF Composites as a Stationary Phase in Liquid Chromatography. *European Journal of Inorganic Chemistry*, **2010**, 2010, 3735-3738	2.3	109
277	The kinetic plot method applied to gradient chromatography: theoretical framework and experimental validation. *Journal of Chromatography A*, **2010**, 1217, 2787-95	4.5	82
276	Practical constraints in the kinetic plot representation of chromatographic performance data: theory and application to experimental data. *Analytical Chemistry*, **2006**, 78, 2150-62	7.8	78
275	A correlation for the pressure drop in monolithic silica columns. *Analytical Chemistry*, **2003**, 75, 843-50	7.8	78
274	The performance of hybrid monolithic silica capillary columns prepared by changing feed ratios of tetramethoxysilane and methyltrimethoxysilane. *Journal of Chromatography A*, **2010**, 1217, 89-98	4.5	74
273	Measurements of diffusion coefficients in 1-D micro- and nanochannels using shear-driven flows. *Lab on A Chip*, **2005**, 5, 1104-10	7.2	71
272	Realization of 1 □10(6) theoretical plates in liquid chromatography using very long pillar array columns. *Analytical Chemistry*, **2012**, 84, 1214-9	7.8	67
271	Experimental study of porous silicon shell pillars under retentive conditions. *Analytical Chemistry*, **2008**, 80, 5391-400	7.8	63
270	Performance limits of monolithic and packed capillary columns in high-performance liquid chromatography and capillary electrochromatography. *Journal of Chromatography A*, **2006**, 1104, 256-62	4.5	63
269	Model column structure for the analysis of the flow and band-broadening characteristics of silica monoliths. *Journal of Chromatography A*, **2004**, 1030, 177-86	4.5	63
268	Kinetic plot method as a tool to design coupled column systems producing 100,000 theoretical plates in the shortest possible time. *Journal of Chromatography A*, **2008**, 1212, 23-34	4.5	60
267	General rules for the optimal external porosity of LC supports. *Analytical Chemistry*, **2004**, 76, 6707-18	7.8	57
266	Retention modeling and method development in hydrophilic interaction chromatography. *Journal of Chromatography A*, **2014**, 1337, 116-27	4.5	56

265	Effective medium theory expressions for the effective diffusion in chromatographic beds filled with porous, non-porous and porous-shell particles and cylinders. Part I: Theory. *Journal of Chromatography A*, **2011**, 1218, 32-45	4.5	56
264	Total pore blocking as an alternative method for the on-column determination of the external porosity of packed and monolithic reversed-phase columns. *Journal of Chromatography A*, **2007**, 1157, 131-41	4.5	56
263	Kinetic plot equations for evaluating the real performance of the combined use of high temperature and ultra-high pressure in liquid chromatography. Application to commercial instruments and 2.1 and 1 mm I.D. columns. *Journal of Chromatography A*, **2008**, 1203, 124-36	4.5	55
262	Very High Efficiency Porous Silica Layer Open-Tubular Capillary Columns Produced via in-Column Sol-Gel Processing. *Analytical Chemistry*, **2016**, 88, 10158-10166	7.8	54
261	Errors involved in the existing B-term expressions for the longitudinal diffusion in fully porous chromatographic media Part I: computational data in ordered pillar arrays and effective medium theory. *Journal of Chromatography A*, **2008**, 1188, 171-88	4.5	54
260	Experimental investigation of the difference in B-term dominated band broadening between fully porous and porous-shell particles for liquid chromatography using the Effective Medium Theory. *Journal of Chromatography A*, **2011**, 1218, 4406-16	4.5	52
259	Tryptic digest analysis by comprehensive reversed phasextwo reversed phase liquid chromatography (RP-LCx2RP-LC) at different pH's. *Journal of Separation Science*, **2009**, 32, 1137-44	3.4	52
258	Investigation of the validity of the kinetic plot method to predict the performance of coupled column systems operated at very high pressures under different thermal conditions. *Journal of Chromatography A*, **2009**, 1216, 3895-903	4.5	52
257	Morphological analysis of physically reconstructed capillary hybrid silica monoliths and correlation with separation efficiency. *Journal of Chromatography A*, **2011**, 1218, 5187-94	4.5	51
256	Detailed characterisation of the flow resistance of commercial sub-2 micrometer reversed-phase columns. *Journal of Chromatography A*, **2008**, 1178, 108-17	4.5	51
255	Influence of pressure and temperature on the physico-chemical properties of mobile phase mixtures commonly used in high-performance liquid chromatography. *Journal of Chromatography A* , **2008**, 1210, 30-44	4.5	51
254	Integration of porous layers in ordered pillar arrays for liquid chromatography. *Lab on A Chip*, **2007**, 7, 1705-11	7.2	50
253	Future of high pressure liquid chromatography: do we need porosity or do we need pressure?. *Journal of Chromatography A*, **2006**, 1130, 158-66	4.5	49
252	Kinetic plot based comparison of the efficiency and peak capacity of high-performance liquid chromatography columns: theoretical background and selected examples. *Journal of Chromatography A*, **2012**, 1228, 20-30	4.5	48
251	The future of UHPLC: Towards higher pressure and/or smaller particles?. *TrAC - Trends in Analytical Chemistry*, **2014**, 63, 65-75	14.6	47
250	Equivalence of the different Cm- and Cs-term expressions used in liquid chromatography and a geometrical model uniting them. *Analytical Chemistry*, **2008**, 80, 8076-88	7.8	47
249	Relation between the particle size distribution and the kinetic performance of packed columns. Application to a commercial sub-2 microm particle material. *Journal of Chromatography A*, **2007**, 1161, 224-33	4.5	47
248	On the possibility of shear-driven chromatography: a theoretical performance analysis. *Journal of Chromatography A*, **1999**, 855, 57-70	4.5	47

247	Importance and reduction of the sidewall-induced band-broadening effect in pressure-driven microfabricated columns. *Analytical Chemistry*, **2004**, 76, 4501-7	7.8	46
246	Effective medium theory expressions for the effective diffusion in chromatographic beds filled with porous, non-porous and porous-shell particles and cylinders. Part II: Numerical verification and quantitative effect of solid core on expected B-term band broadening. *Journal of Chromatography A*, **2011**, 1218, 46-51	4.5	45
245	Theoretical calculation of the retention enthalpy effect on the viscous heat dissipation band broadening in high performance liquid chromatography columns with a fixed wall temperature. *Journal of Chromatography A*, **2006**, 1116, 89-96	4.5	43
244	The possibility of generating high-speed shear-driven flows and their potential application in liquid chromatography. *Analytical Chemistry*, **2000**, 72, 2160-5	7.8	43
243	Kinetic optimisation of open-tubular liquid-chromatography capillaries coated with thick porous layers for increased loadability. *Journal of Chromatography A*, **2011**, 1218, 8388-93	4.5	42
242	Rationale behind the optimum efficiency of columns packed with new 1.9 µm fully porous particles of narrow particle size distribution. *Journal of Chromatography A*, **2016**, 1454, 78-85	4.5	41
241	Thermal modulation for multidimensional liquid chromatography separations using low-thermal-mass liquid chromatography (LC). *Analytical Chemistry*, **2011**, 83, 7053-60	7.8	39
240	High-resolution separations of protein isoforms with liquid chromatography time-of-flight mass spectrometry using polymer monolithic capillary columns. *Journal of Chromatography A*, **2011**, 1218, 5504-11	4.5	39
239	Fabrication and chromatographic performance of porous-shell pillar-array columns. *Analytical Chemistry*, **2010**, 82, 7208-17	7.8	39
238	Selection of comparison criteria and experimental conditions to evaluate the kinetic performance of monolithic and packed-bed columns. *Journal of Chromatography A*, **2006**, 1130, 108-14	4.5	39
237	Effect of pre- and post-column band broadening on the performance of high-speed chromatography columns under isocratic and gradient conditions. *Journal of Chromatography A*, **2016**, 1442, 73-82	4.5	37
236	Comparison of the gradient kinetic performance of silica monolithic capillary columns with columns packed with 3 µm porous and 2.7 µm fused-core silica particles. *Journal of Chromatography A*, **2012**, 1228, 270-5	4.5	37
235	Design and evaluation of flow distributors for microfabricated pillar array columns. *Lab on A Chip*, **2010**, 10, 349-56	7.2	37
234	Towards a solution for viscous heating in ultra-high pressure liquid chromatography using intermediate cooling. *Journal of Chromatography A*, **2010**, 1217, 2022-31	4.5	37
233	Kinetic plot and particle size distribution analysis to discuss the performance limits of sub-2 microm and supra-2 microm particle columns. *Journal of Chromatography A*, **2008**, 1204, 1-10	4.5	36
232	Isocratic and gradient impedance plot analysis and comparison of some recently introduced large size core-shell and fully porous particles. *Journal of Chromatography A*, **2013**, 1312, 80-6	4.5	35
231	Detailed characterization of the kinetic performance of first and second generation silica monolithic columns for reversed-phase chromatography separations. *Journal of Chromatography A*, **2014**, 1325, 72-82	4.5	34
230	Parameters affecting the separation of intact proteins in gradient-elution reversed-phase chromatography using poly(styrene-co-divinylbenzene) monolithic capillary columns. *Journal of Chromatography A*, **2010**, 1217, 3085-90	4.5	34

229	Numerical and analytical solutions for the column length-dependent band broadening originating from axisymmetrical trans-column velocity gradients. *Journal of Chromatography A*, **2009**, 1216, 1325-37	4.5	33
228	Comparison of performance of high-performance liquid chromatography columns packed with superficially and fully porous 2.5 μm particles using kinetic plots. *Journal of Separation Science*, **2010**, 33, 3655-65	3.4	33
227	Method to predict and compare the influence of the particle size on the isocratic peak capacity of high-performance liquid chromatography columns. *Journal of Chromatography A*, **2007**, 1147, 183-91	4.5	33
226	High-speed isocratic and gradient liquid-chromatography separations at 1500bar. *Journal of Chromatography A*, **2015**, 1409, 138-45	4.5	31
225	Errors involved in the existing B-term expressions for the longitudinal diffusion in fully porous chromatographic media Part II: experimental data in packed columns and surface diffusion measurements. *Journal of Chromatography A*, **2008**, 1188, 189-98	4.5	31
224	A computational study of the porosity effects in silica monolithic columns. *Journal of Separation Science*, **2004**, 27, 887-96	3.4	31
223	Improved Sensitivity in Low-Input Proteomics Using Micropillar Array-Based Chromatography. *Analytical Chemistry*, **2019**, 91, 14203-14207	7.8	30
222	Graphical data representation methods to assess the quality of LC columns. *Analytical Chemistry*, **2015**, 87, 8593-602	7.8	30
221	The effect of hydrothermal treatment on column performance for monolithic silica capillary columns. *Journal of Chromatography A*, **2011**, 1218, 3624-35	4.5	30
220	Pillar-structured microchannels for on-chip liquid chromatography: evaluation of the permeability and separation performance. *Journal of Separation Science*, **2007**, 30, 1453-60	3.4	30
219	A discussion of the possible ways to improve the performance of silica monoliths using a kinetic plot analysis of experimental and computational plate height data. *Journal of Separation Science*, **2006**, 29, 1675-85	3.4	30
218	Occurrence of turbulent flow conditions in supercritical fluid chromatography. *Journal of Chromatography A*, **2014**, 1361, 277-85	4.5	29
217	Performance evaluation of long monolithic silica capillary columns in gradient liquid chromatography using peptide mixtures. *Journal of Chromatography A*, **2011**, 1218, 3360-6	4.5	29
216	High-efficiency high performance liquid chromatographic analysis of red wine anthocyanins. *Journal of Chromatography A*, **2011**, 1218, 4660-70	4.5	29
215	Approximate transient and long time limit solutions for the band broadening induced by the thin sidewall-layer in liquid chromatography columns. *Journal of Chromatography A*, **2007**, 1172, 25-39	4.5	29
214	Domain size-induced heterogeneity as performance limitation of small-domain monolithic columns and other LC support types. *Analytical Chemistry*, **2006**, 78, 6191-201	7.8	29
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212	Methods for the experimental characterization and analysis of the efficiency and speed of chromatographic columns: A step-by-step tutorial. *Analytica Chimica Acta*, **2015**, 894, 20-34	6.6	28

211	Integration of uniform porous shell layers in very long pillar array columns using electrochemical anodization for liquid chromatography. *Analyst, The*, **2014**, 139, 618-25	5	28
210	Design and evaluation of various methods for the construction of kinetic performance limit plots for supercritical fluid chromatography. *Journal of Chromatography A*, **2012**, 1258, 152-60	4.5	28
209	Ultra-rapid separation of an angiotensin mixture in nanochannels using shear-driven chromatography. *Journal of Chromatography A*, **2006**, 1102, 96-103	4.5	28
208	Extensive database of liquid phase diffusion coefficients of some frequently used test molecules in reversed-phase liquid chromatography and hydrophilic interaction liquid chromatography. *Journal of Chromatography A*, **2016**, 1455, 102-112	4.5	28
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206	Effect of the presence of an ordered micro-pillar array on the formation of silica monoliths. *Journal of Chromatography A*, **2009**, 1216, 7360-7	4.5	27
205	Chromatographic explanation for the side-wall induced band broadening in pressure-driven and shear-driven flows through channels with a high aspect-ratio rectangular cross-section. *Journal of Chromatography A*, **2002**, 946, 51-8	4.5	27
204	Exploring the possibilities of cryogenic cooling in liquid chromatography for biological applications: a proof of principle. *Analytical Chemistry*, **2012**, 84, 2031-7	7.8	26
203	Selection of column dimensions and gradient conditions to maximize the peak-production rate in comprehensive off-line two-dimensional liquid chromatography using monolithic columns. *Analytical Chemistry*, **2010**, 82, 7015-20	7.8	26
202	Experimental demonstration of the possibility to perform shear-driven chromatographic separations in micro-channels. *Journal of Chromatography A*, **2001**, 924, 111-22	4.5	26
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199	Gradient-elution parameters in capillary liquid chromatography for high-speed separations of peptides and intact proteins. *Journal of Chromatography A*, **2014**, 1355, 149-57	4.5	25
198	High-speed gradient separations of peptides and proteins using polymer-monolithic poly(styrene-co-divinylbenzene) capillary columns at ultra-high pressure. *Journal of Chromatography A*, **2013**, 1304, 177-82	4.5	25
197	High-resolution separations of tryptic digest mixtures using core-shell particulate columns operated at 1,200 bar. *Journal of Chromatography A*, **2012**, 1264, 57-62	4.5	25
196	Capillary liquid chromatography separations using non-porous pillar array columns. *Journal of Chromatography A*, **2012**, 1230, 41-7	4.5	25
195	Impact of the limitations of state-of-the-art micro-fabrication processes on the performance of pillar array columns for liquid chromatography. *Journal of Chromatography A*, **2012**, 1239, 35-48	4.5	25
194	On the advantages of radially elongated structures in microchip-based liquid chromatography. *Analytical Chemistry*, **2013**, 85, 5207-12	7.8	25

193	Understanding and diminishing the extra-column band broadening effects in supercritical fluid chromatography. *Journal of Chromatography A*, **2015**, 1403, 132-7	4.5	24
192	A generic approach to post-column refocusing in liquid chromatography. *Journal of Chromatography A*, **2014**, 1360, 164-71	4.5	24
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190	Application of the isopycnic kinetic plot method for elucidating the potential of sub-2 µm and core-shell particles in SFC. *Talanta*, **2013**, 116, 1105-12	6.2	23
189	Kinetic performance limits of constant pressure versus constant flow rate gradient elution separations. Part I: theory. *Journal of Chromatography A*, **2011**, 1218, 1153-69	4.5	23
188	Experimental investigation of the band broadening originating from the top and bottom walls in micromachined nonporous pillar array columns. *Journal of Separation Science*, **2007**, 30, 2605-13	3.4	23
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186	Predictive elution window stretching and shifting as a generic search strategy for automated method development for liquid chromatography. *Analytical Chemistry*, **2012**, 84, 7823-30	7.8	22
185	DNA microarray enhancement using a continuously and discontinuously rotating microchamber. *Analytical Chemistry*, **2005**, 77, 4474-80	7.8	22
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183	Chromatographic Properties of Minimal Aspect Ratio Monolithic Silica Columns. *Analytical Chemistry*, **2017**, 89, 10948-10956	7.8	21
182	Extra-column band broadening effects in contemporary liquid chromatography: Causes and solutions. *TrAC - Trends in Analytical Chemistry*, **2019**, 119, 115619	14.6	21
181	Use of individual retention modeling for gradient optimization in hydrophilic interaction chromatography: separation of nucleobases and nucleosides. *Journal of Chromatography A*, **2014**, 1368, 125-31	4.5	21
180	A finite parallel zone model to interpret and extend Giddings' coupling theory for the eddy-dispersion in porous chromatographic media. *Journal of Chromatography A*, **2013**, 1314, 124-37	4.5	21
179	Capillary ion chromatography at high pressure and temperature. *Analytical Chemistry*, **2012**, 84, 7212-7	7.8	21
178	Prototyping of thermoplastic microfluidic chips and their application in high-performance liquid chromatography separations of small molecules. *Journal of Chromatography A*, **2017**, 1523, 224-233	4.5	20
177	Use of kinetic plots for the optimization of the separation time in ultra-high-pressure LC. *Journal of Separation Science*, **2010**, 33, 2629-35	3.4	20
176	A theoretical study on the advantage of core-shell particles with radially-oriented mesopores. *Journal of Chromatography A*, **2016**, 1456, 137-44	4.5	20

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174	Peak refocusing using subsequent retentive trapping and strong eluent remobilization in liquid chromatography: a theoretical optimization study. *Journal of Chromatography A*, **2015**, 1381, 74-86	4.5	19
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170	Assessment and numerical search for minimal Taylor-Aris dispersion in micro-machined channels of nearly rectangular cross-section. *Journal of Chromatography A*, **2014**, 1368, 70-81	4.5	18
169	Kinetic performance comparison of fully and superficially porous particles with a particle size of 5 μm: intrinsic evaluation and application to the impurity analysis of griseofulvin. *Talanta*, **2014**, 122, 122-9	6.2	18
168	Evaluation of the Kinetic Performance Differences between Hydrophilic-Interaction Liquid Chromatography and Reversed-Phase Liquid Chromatography under Conditions of Identical Packing Structure. *Analytical Chemistry*, **2015**, 87, 12331-9	7.8	18
167	New insights in the velocity dependency of the external mass transfer coefficient in 2D and 3D porous media for liquid chromatography. *Journal of Chromatography A*, **2012**, 1227, 194-202	4.5	18
166	A high aspect ratio membrane reactor for liquid–liquid extraction. *Journal of Membrane Science*, **2013**, 436, 154-162	9.6	18
165	Experimental investigation of the band broadening arising from short-range interchannel heterogeneities in chromatographic beds under the condition of identical external porosity. *Analytical Chemistry*, **2009**, 81, 705-15	7.8	18
164	Shear-driven flow approaches to LC and macromolecular separations. *Analytical Chemistry*, **2004**, 76, 430A-438A	7.8	18
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162	Simultaneous optimization of the analysis time and the concentration detectability in open-tubular liquid chromatography. *Journal of Chromatography A*, **2000**, 867, 23-43	4.5	18
161	Temperature effects in supercritical fluid chromatography: a trade-off between viscous heating and decompression cooling. *Journal of Chromatography A*, **2014**, 1365, 212-8	4.5	17
160	Extending the limits of operating pressure of narrow-bore column liquid chromatography instrumentation. *Journal of Chromatography A*, **2014**, 1347, 56-62	4.5	17
159	Kinetic optimisation of the reversed phase liquid chromatographic separation of proanthocyanidins on sub-2 μm and superficially porous phases. *Journal of Chromatography A*, **2012**, 1236, 63-76	4.5	17
158	Modelling the thermal behaviour of the low-thermal mass liquid chromatography system. *Journal of Chromatography A*, **2011**, 1218, 2252-63	4.5	17

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156	Use of 120-nm deep channels for liquid chromatographic separations. *Journal of Chromatography A*, **2008**, 1189, 2-9	4.5	17
155	Peak deconvolution to correctly assess the band broadening of chromatographic columns. *Journal of Chromatography A*, **2016**, 1465, 126-42	4.5	16
154	Applicability of linear and nonlinear retention-time models for reversed-phase liquid chromatography separations of small molecules, peptides, and intact proteins. *Journal of Separation Science*, **2016**, 39, 1249-57	3.4	16
153	Design and evaluation of microfluidic devices for two-dimensional spatial separations. *Journal of Chromatography A*, **2016**, 1434, 127-35	4.5	16
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149	Kinetic performance factor - A measurable metric of separation-time-pressure tradeoff in liquid and gas chromatography. *Journal of Chromatography A*, **2018**, 1567, 26-36	4.5	16
148	Strategies to integrate porous layers in microfluidic devices. *Microelectronic Engineering*, **2015**, 132, 1-13	2.5	15
147	Detailed kinetic performance analysis of micromachined radially elongated pillar array columns for liquid chromatography. *Journal of Chromatography A*, **2016**, 1433, 75-84	4.5	15
146	Problems involving the determination of the column-only band broadening in columns producing narrow and tailed peaks. *Journal of Chromatography A*, **2016**, 1440, 74-84	4.5	15
145	High performance liquid chromatography column packings with deliberately broadened particle size distribution: relation between column performance and packing structure. *Journal of Chromatography A*, **2011**, 1218, 6654-62	4.5	15
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142	The impact of flow distribution on column performance: a computational fluid dynamics study. *Journal of Chromatography A*, **2014**, 1369, 125-30	4.5	14
141	Suppression of the sidewall effect in pillar array columns with radially elongated pillars. *Journal of Chromatography A*, **2014**, 1367, 118-22	4.5	14
140	Separations using a porous-shell pillar array column on a capillary LC instrument. *Journal of Separation Science*, **2012**, 35, 2010-7	3.4	14

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134	Enhancing the Possibilities of Comprehensive Two-Dimensional Liquid Chromatography through Hyphenation of Purely Aqueous Temperature-Responsive and Reversed-Phase Liquid Chromatography. *Analytical Chemistry*, **2018**, 90, 4961-4967	7.8	13
133	Possibilities and limitations of the kinetic plot method in supercritical fluid chromatography. *Journal of Chromatography A*, **2013**, 1305, 300-9	4.5	13
132	Calculation of the geometrical three-point parameter constant appearing in the second order accurate effective medium theory expression for the B-term diffusion coefficient in fully porous and porous-shell random sphere packings. *Journal of Chromatography A*, **2012**, 1223, 35-40	4.5	13
131	A novel microstep device for the size separation of cells. *Electrophoresis*, **2004**, 25, 1714-22	3.6	13
130	Exploiting the benefits of miniaturization for the enhancement of DNA microarrays. *Electrophoresis* , **2004**, 25, 3677-86	3.6	13
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128	Metrics of separation performance in chromatography: Part 3: General separation performance of linear solvent strength gradient liquid chromatography. *Journal of Chromatography A*, **2015**, 1413, 9-21	4.5	12
127	Methodologies to determine b-term coefficients revisited. *Journal of Chromatography A*, **2018**, 1532, 124-135	4.5	12
126	Enhanced selectivity and search speed for method development using one-segment-per-component optimization strategies. *Journal of Chromatography A*, **2014**, 1358, 145-54	4.5	12
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120	Design and performance evaluation of a microfluidic ion-suppression module for anion-exchange chromatography. *Journal of Chromatography A*, **2014**, 1355, 253-60	4.5	11
119	Accurate determination of extra-column band broadening using peak summation. *Journal of Separation Science*, **2012**, 35, 519-29	3.4	11
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