Phillip C Wankat

List of Publications by Year in Descending Order

134 papers	2,139 citations	25 h-index	38 g-index
143 ext. papers	2,288 ext. citations	3.8 avg, IF	5.1 L-index

#	Paper	IF	Citations
134	Cyclic Operation of Flash and Column Flash Distillation. *Industrial & Engineering Chemistry Research*, **2020**, 59, 21914-21929	3.9	1
133	Not so global: a bibliometric look at engineering education research. *European Journal of Engineering Education*, **2018**, 43, 190-200	1.5	7
132	Novel solvent exchange distillation column. *Chemical Engineering Science*, **2018**, 184, 216-228	4.4	7
131	Continuous Cyclic Distillation for Binary Solvent Exchange: The Batch Stack. *Industrial & Engineering Chemistry Research*, **2018**, 57, 16077-16083	3.9	5
130	Produced water desalination: An exploratory study. *Desalination*, **2017**, 404, 328-340	10.3	18
129	Decreasing costs of distillation columns with vapor feeds. *Chemical Engineering Science*, **2015**, 137, 955-963	4.4	2
128	Standing Wave Design and Optimization of Nonlinear Four-Zone Thermal Simulated Moving Bed Systems. *Industrial & Engineering Chemistry Research*, **2015**, 54, 10419-10433	3.9	6
127	Standing Wave Design of 2-Zone Thermal Simulated Moving Bed Concentrator (TSMBC). *Industrial & Engineering Chemistry Research*, **2015**, 54, 12646-12663	3.9	3
126	Economic Analysis for Improved Rectifying Columns. *Separation Science and Technology*, **2015**, 150623131949005	1.9	5
125	Improved Rectifying Columns. *Industrial & Engineering Chemistry Research*, **2014**, 53, 9158-9168	3.9	2
124	Standing wave design of a four-zone thermal SMB fractionator and concentrator (4-zone TSMB-FC) for linear systems. *Adsorption*, **2014**, 20, 37-52	2.6	3
123	Engineering education research in European Journal of Engineering Education and Journal of Engineering Education: citation and reference discipline analysis. *European Journal of Engineering Education*, **2014**, 39, 7-17	1.5	12
122	Distillation-Adsorption Hybrid Processes to Separate Binary Liquid Mixtures with Homogeneous Azeotrope. *Separation Science and Technology*, **2013**, 48, 1-14	2.5	15
121	Progress in reforming chemical engineering education. *Annual Review of Chemical and Biomolecular Engineering*, **2013**, 4, 23-43	8.9	4
120	Desalination of the Colorado River water: A hybrid approach. *Desalination*, **2012**, 286, 176-186	10.3	9
119	Cross-Fertilization of Engineering Education Research and Development. *Journal of Professional Issues in Engineering Education and Practice*, **2012**, 138, 104-106	0.7	1
118	Thermal simulated moving bed concentrator. *Chemical Engineering Journal*, **2011**, 166, 511-522	14.7	11

117	Hybrid Membrane-Cryogenic Distillation Air Separation Process for Oxygen Production. *Separation Science and Technology*, **2011**, 46, 1539-1545	2.5	11
116	Simulation of ion exchange water softening pretreatment for reverse osmosis desalination of brackish water. *Desalination*, **2011**, 271, 122-131	10.3	47
115	Solvent Recovery by Steamless Temperature Swing Carbon Adsorption Processes. *Industrial & Engineering Chemistry Research*, **2010**, 49, 11602-11613	3.9	15
114	Hybrid Air Separation Processes for Production of Oxygen and Nitrogen. *Separation Science and Technology*, **2010**, 45, 1171-1185	2.5	9
113	Design of pseudo-simulated moving bed process with multi-objective optimization for the separation of a ternary mixture: linear isotherms. *Journal of Chromatography A*, **2010**, 1217, 3418-26	4.5	25
112	Optimized design of recycle chromatography to isolate intermediate retained solutes in ternary mixtures: Langmuir isotherm systems. *Journal of Chromatography A*, **2009**, 1216, 6946-56	4.5	10
111	Hybrid Cycles to Purify Concentrated Feeds Containing a Strongly Adsorbed Impurity with a Nonlinear Isotherm: The PSA□SA Supercycle. *Industrial & Engineering Chemistry Research*, **2009**, 48, 6405-6416	3.9	4
110	Separation of Concentrated Binary Gases by Hybrid Pressure-Swing Adsorption/Simulated-Moving Bed Processes. *Industrial & Engineering Chemistry Research*, **2009**, 48, 4445-4465	3.9	7
109	Comparison of Recycle Chromatography and Simulated Moving Bed for Pseudobinary Separations. *Industrial & Engineering Chemistry Research*, **2009**, 48, 7724-7732	3.9	8
108	Note: Two-Enthalpy Feed for Distillation with Vapor Feed and Refrigerated Condenser. *Separation Science and Technology*, **2009**, 44, 102-109	2.5	
107	Chromatographic and SMB Center-Cut Separations of Ternary Mixtures. *Separation Science and Technology*, **2008**, 43, 1273-1295	2.5	10
106	Separation of Dilute Binary Gases by Simulated-Moving Bed with Pressure-Swing Assist: SMB/PSA Processes. *Industrial & Engineering Chemistry Research*, **2008**, 47, 3138-3149	3.9	13
105	Optimized Design of Recycle Chromatography for Separation of a Single Component from a Ternary Mixture. *Industrial & Engineering Chemistry Research*, **2008**, 47, 9601-9610	3.9	11
104	Thermal Operation of Four-Zone Simulated Moving Beds. *Industrial & Engineering Chemistry Research*, **2007**, 46, 7208-7220	3.9	27
103	Reducing Diameters of Distillation Columns with Largest Calculated Diameter at the Bottom. *Industrial & Engineering Chemistry Research*, **2007**, 46, 9223-9231	3.9	5
102	Purification of L-Phenylalanine from a Ternary Amino Acid Mixture Using a Two-Zone SMB/Chromatography Hybrid System. *Separation Science and Technology*, **2007**, 42, 911-930	2.5	14
101	Balancing Diameters of Distillation Column with Vapor Feeds. *Industrial & Engineering Chemistry Research*, **2007**, 46, 8813-8826	3.9	7
100	Hybrid Simulated Moving Bed Processes for the Purification of p-Xylene. *Separation Science and Technology*, **2007**, 42, 669-700	2.5	13

99	Improving the performance of one column analogs to SMBs. *AICHE Journal*, **2006**, 52, 2461-2472	3.6	9
98	Scaling Rules and Increasing Feed Rates in Two-Zone and Four-Zone Simulated Moving Bed Systems. *Industrial & Engineering Chemistry Research*, **2006**, 45, 2793-2807	3.9	12
97	High Recovery Cycles for Gas Separations by Pressure-Swing Adsorption. *Industrial & Engineering Chemistry Research*, **2006**, 45, 8117-8133	3.9	21
96	Two-Zone SMB/Chromatography for Center-Cut Separation from Ternary Mixtures:Linear Isotherm Systems. *Industrial & Engineering Chemistry Research*, **2006**, 45, 1426-1433	3.9	53
95	Hybrid Simulated Moving Bed and Chromatography Systems for Center-Cut Separation from Quaternary Mixtures:Linear Isotherm Systems. *Industrial & Engineering Chemistry Research*, **2006**, 45, 8713-8722	3.9	19
94	Two-Zone SMB Process for Binary Separation. *Industrial & Engineering Chemistry Research*, **2005**, 44, 1565-1575	3.9	20
93	Increasing the Energy Efficiency of Extractive Distillation. *Separation Science and Technology*, **2005**, 39, 1-17	2.5	19
92	New Design of Simulated Moving Bed (SMB) for Ternary Separations. *Industrial & Engineering Chemistry Research*, **2005**, 44, 1906-1913	3.9	59
91	Thermally Assisted Simulated Moving Bed Systems. *Adsorption*, **2005**, 11, 579-584	2.6	20
90	Use of two feeds in simulated moving beds for binary separations. *Korean Journal of Chemical Engineering*, **2005**, 22, 619-627	2.8	16
89	Ternary Separations with One-Column Analogs to SMB. *Separation Science and Technology*, **2005**, 40, 3239-3259	2.5	7
88	Undergraduate Student Competitions. *Journal of Engineering Education*, **2005**, 94, 343-347	2.3	16
87	Analysis of the First Ten Years of the Journal of Engineering Education. *Journal of Engineering Education*, **2004**, 93, 13-21	2.3	45
86	Comparing the performance of one-column process and four-zone simulated moving bed by computer simulation. *Biotechnology and Bioprocess Engineering*, **2004**, 9, 362-368	3.1	5
85	One-Column Chromatograph with Recycle Analogous to Simulated Moving Bed Adsorbers: Analysis and Applications. *Industrial & Engineering Chemistry Research*, **2004**, 43, 5291-5299	3.9	26
84	Designs of Simulated-Moving-Bed Cascades for Quaternary Separations. *Industrial & Engineering Chemistry Research*, **2004**, 43, 1071-1080	3.9	25
83	Quaternary Distillation Systems with Less than N Columns. *Industrial & Engineering Chemistry Research*, **2004**, 43, 3838-3846	3.9	29
82	Thermal-Adsorptive Concentration. *Adsorption*, **2003**, 9, 67-76	2.6	6

81	Focusing in Liquid Thermal Adsorption Systems. *Adsorption*, **2003**, 9, 117-123	2.6	5
80	Scaling and intensification procedures for simulated moving-bed systems. *AICHE Journal*, **2003**, 49, 2810-2821	3.8	11
79	One-Column Chromatograph with Recycle Analogous to a Four-Zone Simulated Moving Bed. *Industrial & Engineering Chemistry Research*, **2003**, 42, 5268-5279	3.9	37
78	Variable Flow Rate Operation for Simulated Moving Bed Separation Systems: Simulation and Optimization. *Industrial & Engineering Chemistry Research*, **2003**, 42, 4840-4848	3.9	17
77	Single-Cascade Simulated Moving Bed Systems for the Separation of Ternary Mixtures. *Industrial & Engineering Chemistry Research*, **2003**, 42, 4849-4860	3.9	57
76	Integrating the Use of Commercial Simulators into Lecture Courses. *Journal of Engineering Education*, **2002**, 91, 19-23	2.3	27
75	GAS COMPRESSION USING TEMPERATURE SWING ADSORPTION. *Separation Science and Technology*, **2002**, 37, 3187-3199	2.5	4
74	Transient Pressure and Flow Predictions for Concentrated Packed Absorbers Using a Dynamic Nonequilibrium Model. *Industrial & Engineering Chemistry Research*, **2002**, 41, 5775-5788	3.9	6
73	Three-Zone Simulated Moving Bed with Partial Feed and Selective Withdrawal. *Industrial & Engineering Chemistry Research*, **2002**, 41, 5283-5289	3.9	69
72	SMB Operation Strategy Partial Feed. *Industrial & Engineering Chemistry Research*, **2002**, 41, 2504-2511	3.9	95
71	Simulated Moving Bed Cascades for Ternary Separations. *Industrial & Engineering Chemistry Research*, **2001**, 40, 6185-6193	3.9	72
70	Failure Modes in Concentrated Absorbers during the Transition to Standby Operation. *Industrial & Engineering Chemistry Research*, **2001**, 40, 850-853	3.9	3
69	Kinetic study of the conversion of different substrates to lactic acid using Lactobacillus bulgaricus. *Biotechnology Progress*, **2000**, 16, 305-14	2.8	48
68	Pressure Effects in Adsorbers and Adsorptive Reactors. *Separation Science and Technology*, **2000**, 35, 323-351	2.5	
67	Dynamic Tray Model To Predict Start-Up Transients in Concentrated Absorbers. *Industrial & Engineering Chemistry Research*, **2000**, 39, 2525-2533	3.9	4
66	Reflective Analysis of Student Learning in a Sophomore Engineering Course. *Journal of Engineering Education*, **1999**, 88, 195-203	2.3	12
65	An Analysis of the Articles in the Journal of Engineering Education. *Journal of Engineering Education* , **1999**, 88, 37-42	2.3	18
64	Educating Engineering Professors in Education. *Journal of Engineering Education*, **1999**, 88, 471-475	2.3	7

63	Pressure Effects in Adsorption Systems. *Adsorption*, **1999**, 5, 261-278	2.6	11
62	Pressure Transients in Gas Phase Adsorptive Reactors. *Adsorption*, **1998**, 4, 345-354	2.6	6
61	Pore and Surface Diffusion and Bulk-Phase Mass Transfer in Packed and Fluidized Beds. *Industrial & Engineering Chemistry Research*, **1998**, 37, 228-239	3.9	43
60	Dynamics of the Irreversible Michaelis-Menten Kinetic Mechanism. *Journal of Physical Chemistry A*, **1998**, 102, 717-721	2.8	1
59	The Effects of an Orientation Course on the Attitudes of Freshmen Engineering Students. *Journal of Engineering Education*, **1998**, 87, 23-27	2.3	5
58	Modified displacement chromatography cycles for gas systems. *Chemical Engineering Science*, **1996**, 51, 701-711	4.4	2
57	Pressure Behavior during the Loading of Adsorption Systems. *Kluwer International Series in Engineering and Computer Science*, **1996**, 51-58		2
56	Ion Exchange of Phenylalanine in Fluidized/Expanded Beds. *Industrial & Engineering Chemistry Research*, **1995**, 34, 2700-2711	3.9	20
55	Multieffect distillation processes. *Industrial & Engineering Chemistry Research*, **1993**, 32, 894-905	3.9	10
54	Amino acid separation in a multistage fluidized ion exchanger bed. *Industrial & Engineering Chemistry Research*, **1993**, 32, 2058-2064	3.9	10
53	Two-feed distillation. Same-composition feeds with different enthalpies. *Industrial & Engineering Chemistry Research*, **1993**, 32, 3061-3067	3.9	25
52	Feed Purge Cycles in Pressure Swing Adsorption. *Separation Science and Technology*, **1993**, 28, 2567-2586	1.5	3
51	Pressure drop correlations and scale-up of size exclusion chromatography with compressible packings. *Industrial & Engineering Chemistry Research*, **1992**, 31, 549-561	3.9	29
50	Adsorption engineering. *Reactive & Functional Polymers*, **1991**, 14, 269-270		3
49	Acetone-Butanol-Ethanol (ABE) Fermentation and Simultaneous Separation in a Trickle Bed Reactor. *Biotechnology Progress*, **1991**, 7, 185-194	2.8	28
48	Scaling rules and intensification of thermal swing adsorption. *AICHE Journal*, **1991**, 37, 785-789	3.6	6
47	Characterization of an immobilized cell, trickle bed reactor during long term butanol (ABE) fermentation. *Biotechnology and Bioengineering*, **1990**, 36, 207-17	4.9	14
46	Intensification of pressure swing adsorption processes. *AICHE Journal*, **1990**, 36, 1299-1312	3.6	68

45	Rate-Controlled Separations **1990**,		107
44	Pressure swing adsorption process for binary gas separation with Langmuir isotherms. *Chemical Engineering Science*, **1989**, 44, 2407-2410	4.4	13
43	Combined cocurrent-countercurrent blowdown cycle in pressure swing adsorption. *AICHE Journal*, **1989**, 35, 523-526	3.6	15
42	A new pressure swing adsorption process for high enrichment and recovery. *Chemical Engineering Science*, **1989**, 44, 567-574	4.4	12
41	Acetone-butanol-ethanol (ABE) fermentation in an immobilized cell trickle bed reactor. *Biotechnology and Bioengineering*, **1989**, 34, 18-29	4.9	25
40	Moving-withdrawal liquid chromatography of amino acids. *Industrial & Engineering Chemistry Research*, **1989**, 28, 1358-1364	3.9	6
39	Scaling rules for isocratic elution chromatography. *AICHE Journal*, **1988**, 34, 1006-1019	3.6	26
38	Continuous, regenerative, two-dimensional extraction. 2. Theory. *Industrial & Engineering Chemistry Research*, **1988**, 27, 1886-1894	3.9	
37	Scale-Up of Bioseparations for Microbial and Biochemical Technology. *ACS Symposium Series*, **1988**, 72-101	0.14	1
36	Intensification of sorption processes. *Industrial & Engineering Chemistry Research*, **1987**, 26, 1579-1585	3.9	8
35	Size exclusion parametric pumping. *Industrial & Engineering Chemistry Fundamentals*, **1985**, 24, 108-112		8
34	Gas Purification by Pressure Swing Adsorption. *Separation and Purification Reviews*, **1985**, 14, 157-212		44
33	Analysis of multicomponent and adiabatic countercurrent columns. *Industrial & Engineering Chemistry Fundamentals*, **1984**, 23, 14-19		5
32	MOVING PORT CHROMATOGRAPHY: A METHOD OF IMPROVING PREPARATIVE CHROMATOGRAPHY. *Chemical Engineering Communications*, **1984**, 31, 21-43	2.2	7
31	Improved preparative chromatography: moving port chromatography. *Industrial & Engineering Chemistry Fundamentals*, **1984**, 23, 256-260		12
30	Calculations for separations with three phases. 2. Continuous contact systems. *Industrial & Engineering Chemistry Fundamentals*, **1984**, 23, 137-143		3
29	Continuous multicomponent parametric pumping. *Industrial & Engineering Chemistry Fundamentals*, **1983**, 22, 172-176		3
28	Improved preparative liquid chromatography: the moving feed point method. *Industrial & Engineering Chemistry Fundamentals*, **1983**, 22, 10-16		9

27	Combined product and substrate inhibition equation for cellobiase. *Biotechnology and Bioengineering*, **1981**, 23, 2779-2788	4.9	59
26	Multicomponent Fractionation by Direct, Thermal Mode Cycling Zone Adsorption. *Industrial & Engineering Chemistry Fundamentals*, **1980**, 19, 86-93		3
25	An Analogy between Countercurrent and Two-Dimensional Separation Cascades. *Separation Science and Technology*, **1980**, 15, 1599-1612	2.5	3
24	Continuous recuperative mode parametric pumping. *Chemical Engineering Science*, **1978**, 33, 723-733	4.4	6
23	Continuous Flow Equilibrium Staged Model for Cycling Zone Adsorption. *Industrial & Engineering Chemistry Fundamentals*, **1978**, 17, 32-38		7
22	Ultramicroprobe Method for Investigating Mass Transfer through Gas-Liquid Interfaces. *Industrial & Engineering Chemistry Fundamentals*, **1978**, 17, 59-66		15
21	Increasing Feed Throughput in Preparative Two-Dimensional Separations. *Separation Science*, **1977**, 12, 553-567		2
20	Improved Efficiency in Preparative Chromatographic Columns Using a Moving Feed. *Industrial & Engineering Chemistry Fundamentals*, **1977**, 16, 468-472		11
19	Fractionation by cycling zone adsorption. *Chemical Engineering Science*, **1977**, 32, 1283-1287	4.4	2
18	The relationship between one-dimensional and two-dimensional separation processes. *AICHE Journal*, **1977**, 23, 859-867	3.6	34
17	Steady-State Continuous, Multicomponent Separations in Regenerated Two-Dimensional Cascades. *Industrial & Engineering Chemistry Fundamentals*, **1976**, 15, 309-317		9
16	Application of cycling zone separation to preparative high-pressure liquid chromatography. *Journal of Chromatography A*, **1976**, 121, 205-212	4.5	1
15	Multicomponent cycling zone adsorption. *Chemical Engineering Science*, **1976**, 31, 921-927	4.4	9
14	Partial Fractionation of Dyes by Cycling Zone Separation. *Separation Science*, **1976**, 11, 207-213		4
13	Multicomponent Cycling Zone Separations. *Industrial & Engineering Chemistry Fundamentals*, **1975**, 14, 96-102		12
12	pH cycling zone separation of sugars. *Journal of Chromatography A*, **1975**, 114, 369-381	4.5	9
11	Theory of affinity chromatography separations. *Analytical Chemistry*, **1974**, 46, 1400-8	7.8	34
10	Cyclic Separation Processes. *Separation Science*, **1974**, 9, 85-116		19

9	Thermal wave cycling zone separation. *Journal of Chromatography A*, **1974**, 88, 211-219	4.5	8
8	Desalination by natural freezing. *Desalination*, **1973**, 13, 147-157	10.3	15
7	Cycling Zone Extraction. *Separation Science*, **1973**, 8, 473-500		7
6	Two-Dimensional Cross-Flow Extraction. *Separation Science*, **1973**, 8, 599-611		1
5	Liquid-Liquid Extraction Parametric Pumping. *Industrial & Engineering Chemistry Fundamentals*, **1973**, 12, 372-381		12
4	Two-Dimensional Development in Staged Systems. *Separation Science*, **1972**, 7, 345-360		1
3	Two-Dimensional Cross-Flow Cascades. *Separation Science*, **1972**, 7, 233-241		5
2	Note on thermal instability of a horizontal layer of non-Newtonian fluid heated from below. *International Journal of Heat and Mass Transfer*, **1970**, 13, 1506-1507	4.9	5
1	A particular unsteady viscometric flow. *AICHE Journal*, **1969**, 15, 150-151	3.6	3