

# Andreas A Linninger

## List of Publications by Year in descending order

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142  
papers

3,881  
citations

117625

34  
h-index

155660

55  
g-index

150  
all docs

150  
docs citations

150  
times ranked

3447  
citing authors

#	ARTICLE	IF	CITATIONS
1	Cerebrospinal fluid dynamics coupled to the global circulation in holistic setting: Mathematical models, numerical methods and applications. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2022, 38, e3532.	2.1	20
2	Voxelized simulation of cerebral oxygen perfusion elucidates hypoxia in aged mouse cortex. <i>PLoS Computational Biology</i> , 2021, 17, e1008584.	3.2	16
3	Mathematical synthesis of the cortical circulation for the whole mouse brain—part II: Microcirculatory closure. <i>Microcirculation</i> , 2021, 28, e12687.	1.8	13
4	A suite of neurophotonic tools to underpin the contribution of internal brain states in fMRI. <i>Current Opinion in Biomedical Engineering</i> , 2021, 18, 100273.	3.4	6
5	<i>In Vivo</i> Intrathecal Tracer Dispersion in Cynomolgus Monkey Validates Wide Biodistribution Along Neuraxis. <i>IEEE Transactions on Biomedical Engineering</i> , 2020, 67, 1122-1132.	4.2	18
6	Drug Delivery Applications of Nanoparticles in the Spine. <i>Methods in Molecular Biology</i> , 2020, 2059, 121-143.	0.9	3
7	Quantification of blood flow patterns in the cerebral arterial circulation of individual (human) subjects. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2020, 36, e3288.	2.1	17
8	Constitutive relationship and governing physical properties for magnetophoresis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 30208-30214.	7.1	10
9	2D parametric contrast time-density analysis for the prediction of complete aneurysm occlusion at six months—™ post-flow diversion stent. <i>Interventional Neuroradiology</i> , 2020, 26, 468-475.	1.1	6
10	Ratio of Arteriovenous Malformation Draining Vein to Adjacent Venous Sinus Diameter Is Associated with Increased Risk of Venous Stenosis. <i>World Neurosurgery</i> , 2019, 130, e1111-e1115.	1.3	2
11	Cerebral arteriovenous malformation venous stenosis is associated with hemodynamic changes at the draining vein-venous sinus junction. <i>Medical Hypotheses</i> , 2019, 123, 86-88.	1.5	14
12	Mathematical synthesis of the cortical circulation for the whole mouse brain-part I. theory and image integration. <i>Computers in Biology and Medicine</i> , 2019, 110, 265-275.	7.0	24
13	An efficient full space-time discretization method for subject-specific hemodynamic simulations of cerebral arterial blood flow with distensible wall mechanics. <i>Journal of Biomechanics</i> , 2019, 87, 37-47.	2.1	8
14	Quantification of near-wall hemodynamic risk factors in large-scale cerebral arterial trees. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2018, 34, e2987.	2.1	9
15	Modeling the diffusion of D-2-hydroxyglutarate from IDH1 mutant gliomas in the central nervous system. <i>Neuro-Oncology</i> , 2018, 20, 1197-1206.	1.2	27
16	Correlation Between Contrast Time—Density Time on Digital Subtraction Angiography and Flow: An <i>In Vitro</i> Study. <i>World Neurosurgery</i> , 2018, 110, e315-e320.	1.3	3
17	Validation of cerebral arteriovenous malformation hemodynamics assessed by DSA using quantitative magnetic resonance angiography: preliminary study. <i>Journal of NeuroInterventional Surgery</i> , 2018, 10, 156-161.	3.3	40
18	Contrast Time-Density Time on Digital Subtraction Angiography Correlates With Cerebral Arteriovenous Malformation Flow Measured by Quantitative Magnetic Resonance Angiography, Angioarchitecture, and Hemorrhage. <i>Neurosurgery</i> , 2018, 83, 210-216.	1.1	18

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19	Simulations of blood as a suspension predicts a depth dependent hematocrit in the circulation throughout the cerebral cortex. PLoS Computational Biology, 2018, 14, e1006549.	3.2	25
20	Cerebrospinal Fluid Dynamics and Intrathecal Delivery. , 2018, , 829-846.		1
21	Magnetic Drug Targeting: A Novel Treatment for Intramedullary Spinal Cord Tumors. Scientific Reports, 2018, 8, 11417.	3.3	60
22	Validation of parametric mesh generation for subject-specific cerebroarterial trees using modified Hausdorff distance metrics. Computers in Biology and Medicine, 2018, 100, 209-220.	7.0	7
23	Cellular Obstruction Clearance in Proximal Ventricular Catheters Using Low-Voltage Joule Heating. IEEE Transactions on Biomedical Engineering, 2018, 65, 2503-2511.	4.2	2
24	Systems engineersâ€™ role in biomedical research. Convection-enhanced drug delivery. Computer Aided Chemical Engineering, 2018, , 271-302.	0.5	10
25	Automatic recognition of subject-specific cerebrovascular trees. Magnetic Resonance in Medicine, 2017, 77, 398-410.	3.0	22
26	Gap-free segmentation of vascular networks with automatic image processing pipeline. Computers in Biology and Medicine, 2017, 82, 29-39.	7.0	25
27	Computational and In Vitro Experimental Investigation of Intrathecal Drug Distribution: Parametric Study of the Effect of Injection Volume, Cerebrospinal Fluid Pulsatility, and Drug Uptake. Anesthesia and Analgesia, 2017, 124, 1686-1696.	2.2	58
28	Aneurysm size and the Windkessel effect: An analysis of contrast intensity in digital subtraction angiography. Interventional Neuroradiology, 2017, 23, 357-361.	1.1	12
29	Image-guidance technology and the surgical resection of spinal column tumors. Journal of Neuro-Oncology, 2017, 131, 425-435.	2.9	8
30	Backflow-free catheters for efficient and safe convection-enhanced delivery of therapeutics. Medical Engineering and Physics, 2017, 45, 15-24.	1.7	19
31	Intrathecal magnetic drug targeting for localized delivery of therapeutics in the CNS. Nanomedicine, 2017, 12, 865-877.	3.3	27
32	Changes in contrast transit times on digital subtraction angiography post-Pipeline Embolization Device deployment. Interventional Neuroradiology, 2017, 23, 137-142.	1.1	9
33	Large-scale subject-specific cerebral arterial tree modeling using automated parametric mesh generation for blood flow simulation. Computers in Biology and Medicine, 2017, 91, 353-365.	7.0	30
34	Corticosteroid Treatment for Metastatic Spinal Cord Compression: A Review. Global Spine Journal, 2017, 7, 272-279.	2.3	30
35	The capillary bed offers the largest hemodynamic resistance to the cortical blood supply. Journal of Cerebral Blood Flow and Metabolism, 2017, 37, 52-68.	4.3	186
36	Starling forces drive intracranial water exchange during normal and pathological states. Croatian Medical Journal, 2017, 58, 384-394.	0.7	11

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37	Additive Manufacturing of Subject-Specific Spine Model for In-Vitro Intrathecal Drug Delivery Study. , 2016, , .		0
38	Hydrocephalus: the role of cerebral aquaporin-4 channels and computational modeling considerations of cerebrospinal fluid. Neurosurgical Focus, 2016, 41, E8.	2.3	38
39	Magnetic field-enhanced cellular uptake of doxorubicin loaded magnetic nanoparticles for tumor treatment. Materials Research Express, 2016, 3, 095010.	1.6	29
40	Clearance of Subarachnoid Hemorrhage from the Cerebrospinal Fluid in Computational and In Vitro Models. Annals of Biomedical Engineering, 2016, 44, 3478-3494.	2.5	23
41	Correlation between angiographic transit times and neurological status on admission in patients with aneurysmal subarachnoid hemorrhage. Journal of Neurosurgery, 2016, 124, 1093-1099.	1.6	12
42	Cerebrospinal Fluid Mechanics and Its Coupling to Cerebrovascular Dynamics. Annual Review of Fluid Mechanics, 2016, 48, 219-257.	25.0	107
43	Prototype Biosensor for Detection of Myelin Basic Protein Biomarker in Hydrocephalus Diagnosis. Sensor Letters, 2016, 14, 84-92.	0.4	1
44	Quantum Dot Conjugated Magnetic Nanoparticles for Targeted Drug Delivery and Imaging. Nano Biomedicine and Engineering, 2016, 8, .	0.9	7
45	Medical Image Processing for Fully Integrated Subject Specific Whole Brain Mesh Generation. Technologies, 2015, 3, 126-141.	5.1	16
46	Automatic Reconstruction and Generation of Structured Hexahedral Mesh for Non-planar Bifurcations in Vascular Networks. Computer Aided Chemical Engineering, 2015, 37, 635-640.	0.5	13
47	Dynamic regulation of aquaporin-4 water channels in neurological disorders. Croatian Medical Journal, 2015, 56, 401-421.	0.7	35
48	Impedance Changes Indicate Proximal Ventriculoperitoneal Shunt Obstruction &lt;italic>In Vitro&lt;/italic>. IEEE Transactions on Biomedical Engineering, 2015, 62, 2787-2793.	4.2	9
49	Current status of intratumoral therapy for glioblastoma. Journal of Neuro-Oncology, 2015, 125, 1-7.	2.9	42
50	Implant-Assisted Intrathecal Magnetic Drug Targeting to Aid in Therapeutic Nanoparticle Localization for Potential Treatment of Central Nervous System Disorders. Journal of Biomedical Nanotechnology, 2015, 11, 253-261.	1.1	30
51	Intramedullary spinal cord tumors: a review of current and future treatment strategies. Neurosurgical Focus, 2015, 39, E14.	2.3	129
52	Hematocrit Distribution and Tissue Oxygenation in Large Microcirculatory Networks. Microcirculation, 2015, 22, 1-18.	1.8	81
53	CNS wide simulation of flow resistance and drug transport due to spinal microanatomy. Journal of Biomechanics, 2015, 48, 2144-2154.	2.1	80
54	Interpretation of Cellular Imaging and AQP4 Quantification Data in a Single Cell Simulator. Processes, 2014, 2, 218-237.	2.8	2

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55	Computer simulations and in vivo convection-enhanced delivery of fluorescent nanoparticles demonstrate variable distribution geometry. <i>Computers and Chemical Engineering</i> , 2014, 71, 672-676.	3.8	6
56	A computational model of cerebrospinal fluid production and reabsorption driven by Starling forces. <i>Croatian Medical Journal</i> , 2014, 55, 481-497.	0.7	47
57	A computer-aided framework for development, identification and management of physiologically-based pharmacokinetic models. <i>Computers and Chemical Engineering</i> , 2014, 71, 677-698.	3.8	19
58	Intrathecal magnetic drug targeting using gold-coated magnetite nanoparticles in a human spine model. <i>Nanomedicine</i> , 2014, 9, 1155-1169.	3.3	27
59	Cerebral Microcirculation and Oxygen Tension in the Human Secondary Cortex. <i>Annals of Biomedical Engineering</i> , 2013, 41, 2264-2284.	2.5	105
60	Quantitative Integration of Biological, Pharmacokinetic, and Medical Imaging Data for Organ-Wide Dose-Response Predictions. <i>IEEE Transactions on Biomedical Engineering</i> , 2013, 60, 625-632.	4.2	8
61	First principles pharmacokinetic modeling: A quantitative study on Cyclosporin. <i>Computers and Chemical Engineering</i> , 2013, 54, 97-110.	3.8	12
62	Cerebrospinal fluid volume measurements in hydrocephalic rats. <i>Journal of Neurosurgery: Pediatrics</i> , 2012, 10, 347-354.	1.3	11
63	The Frequency and Magnitude of Cerebrospinal Fluid Pulsations Influence Intrathecal Drug Distribution. <i>Anesthesia and Analgesia</i> , 2012, 115, 386-394.	2.2	77
64	Optimization of Complex Column Networks with Hybrid Genetic Algorithm. <i>Computer Aided Chemical Engineering</i> , 2012, 31, 1597-1601.	0.5	4
65	Hemodynamics of cerebral micro vasculature. <i>Computer Aided Chemical Engineering</i> , 2012, 31, 1727-1731.	0.5	2
66	Exact solution of the diffusion-convection equation in cylindrical geometry. <i>AIChE Journal</i> , 2012, 58, 1299-1302.	3.6	8
67	Biomedical systems research—New perspectives opened by quantitative medical imaging. <i>Computers and Chemical Engineering</i> , 2012, 36, 1-9.	3.8	7
68	Interspecies Scaling in Pharmacokinetics: A Novel Whole-Body Physiologically Based Modeling Framework to Discover Drug Biodistribution Mechanisms in vivo. <i>Journal of Pharmaceutical Sciences</i> , 2012, 101, 1221-1241.	3.3	57
69	Medical Image-based Systematic Design of Human Gene Silencing Therapies. <i>Computer Aided Chemical Engineering</i> , 2012, 31, 1732-1736.	0.5	0
70	Methods for Determining Agent Concentration Profiles in Agarose Gel During Convection-Enhanced Delivery. <i>IEEE Transactions on Biomedical Engineering</i> , 2011, 58, 626-632.	4.2	20
71	Embedded Control for Optimizing Flexible Dynamic Process Performance. <i>Industrial &amp; Engineering Chemistry Research</i> , 2011, 50, 4993-5004.	3.7	9
72	Three Dimensional Simulation and Experimental Investigation of Intrathecal Drug Delivery in the Spinal Canal and the Brain. <i>Computer Aided Chemical Engineering</i> , 2011, , 1525-1529.	0.5	2

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73	Physiologically-Based Pharmacokinetic Modeling: Parameter Estimation for Cyclosporin A. Computer Aided Chemical Engineering, 2011, 29, 1543-1547.	0.5	1
74	Systems engineers' role in biomedical research. Computer Aided Chemical Engineering, 2011, , 1535-1542.	0.5	0
75	Pinch Point Calculations and Its Implications on Robust Distillation Design. Chinese Journal of Chemical Engineering, 2011, 19, 911-925.	3.5	4
76	Dynamic Brain Phantom for Intracranial Volume Measurements. IEEE Transactions on Biomedical Engineering, 2011, 58, 1450-1455.	4.2	13
77	Cerebrospinal Fluid Flow Dynamics in the Central Nervous System. Annals of Biomedical Engineering, 2011, 39, 484-496.	2.5	88
78	The Effect of Pulsatile Flow on Intrathecal Drug Delivery in the Spinal Canal. Annals of Biomedical Engineering, 2011, 39, 2592-602.	2.5	58
79	Rigorous synthesis and simulation of complex distillation networks. AIChE Journal, 2011, 57, 136-148.	3.6	6
80	Graphical design and analysis of thermally coupled sidestream columns using column profile maps and temperature collocation. AIChE Journal, 2011, 57, 2406-2420.	3.6	5
81	Three-dimensional computational prediction of cerebrospinal fluid flow in the human brain. Computers in Biology and Medicine, 2011, 41, 67-75.	7.0	91
82	Integrated design and control under uncertainty: Embedded control optimization for plantwide processes. Computers and Chemical Engineering, 2011, 35, 1718-1724.	3.8	25
83	Ventricle wall movements and cerebrospinal fluid flow in hydrocephalus. Journal of Neurosurgery, 2011, 115, 159-164.	1.6	61
84	A Computational Model of Cerebral Vasculature, Brain Tissue, and Cerebrospinal Fluid. Computer Aided Chemical Engineering, 2011, 29, 1530-1534.	0.5	2
85	Robust Thermodynamically-guided Algorithms for Synthesis of Energy Efficient Separation Networks. Computer Aided Chemical Engineering, 2010, 28, 1117-1122.	0.5	1
86	Optimal Catheter Placement for Chemotherapy. Computer Aided Chemical Engineering, 2010, 28, 223-228.	0.5	7
87	Integration of Design and Control for a large scale flowsheet. Computer Aided Chemical Engineering, 2010, , 1279-1284.	0.5	2
88	Design and optimization of energy efficient complex separation networks. Computers and Chemical Engineering, 2010, 34, 1556-1563.	3.8	9
89	Rigorous Separation Design. 2. Network Design Solutions for Mixtures with Various Volatility Differences and Feed Compositions. Industrial & Engineering Chemistry Research, 2010, 49, 8670-8684.	3.7	6
90	Rigorous Separation Design. 1. Multicomponent Mixtures, Nonideal Mixtures, and Prefractionating Column Networks. Industrial & Engineering Chemistry Research, 2010, 49, 6499-6513.	3.7	13

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91	Synthesis of Energy Efficient Complex Separation Networks. Computer Aided Chemical Engineering, 2009, 27, 1053-1058.	0.5	0
92	Modeling and Design of Distributed Systems; Methods and Algorithms. Computer Aided Chemical Engineering, 2009, 27, 95-100.	0.5	0
93	Normal and Hydrocephalic Brain Dynamics: The Role of Reduced Cerebrospinal Fluid Reabsorption in Ventricular Enlargement. Annals of Biomedical Engineering, 2009, 37, 1434-1447.	2.5	70
94	A mathematical model of blood, cerebrospinal fluid and brain dynamics. Journal of Mathematical Biology, 2009, 59, 729-759.	1.9	124
95	An impedance sensor to monitor and control cerebral ventricular volume. Medical Engineering and Physics, 2009, 31, 838-845.	1.7	16
96	A hybrid sequential niche algorithm for optimal engineering design with solution multiplicity. Computers and Chemical Engineering, 2009, 33, 1261-1271.	3.8	14
97	Industry-wide energy saving by complex separation networks. Computers and Chemical Engineering, 2009, 33, 2018-2027.	3.8	18
98	The Physics of Hydrocephalus. Pediatric Neurosurgery, 2009, 45, 161-174.	0.7	48
99	Embedded Control for Optimizing Flexible Dynamic Process Performance. Computer Aided Chemical Engineering, 2009, , 1251-1256.	0.5	2
100	Design and Optimization of Energy Efficient Complex Separation Networks. , 2009, , 747-755.		2
101	Mathematical Modelingâ€”Knowledge Acquisition about Brain Physics. , 2009, , 805-813.		0
102	Integrated Design and Control under Uncertaintyâ€”Algorithms and Applications. , 2009, , 659-668.		0
103	Computational methods for predicting drug transport in anisotropic and heterogeneous brain tissue. Journal of Biomechanics, 2008, 41, 2176-2187.	2.1	81
104	Prediction of convection-enhanced drug delivery to the human brain. Journal of Theoretical Biology, 2008, 250, 125-138.	1.7	126
105	Assessing chronic liver toxicity based on relative gene expression data. Journal of Theoretical Biology, 2008, 254, 308-318.	1.7	11
106	Systematic design of drug delivery therapies. Computers and Chemical Engineering, 2008, 32, 89-98.	3.8	35
107	Rigorous Mathematical Modeling Techniques for Optimal Delivery of Macromolecules to the Brain. IEEE Transactions on Biomedical Engineering, 2008, 55, 2303-2313.	4.2	32
108	Parallel Hybrid Algorithm for Process Flexibility Analysis. Industrial & Engineering Chemistry Research, 2008, 47, 8324-8336.	3.7	9

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109	A Barrier-Terrain Methodology for Global Optimization. Industrial & Engineering Chemistry Research, 2008, 47, 2666-2680.	3.7	11
110	Multiscale Modeling and Solution Multiplicity in Catalytic Pellet Reactors. Industrial & Engineering Chemistry Research, 2008, 47, 8572-8581.	3.7	10
111	Discovery of transport and reaction properties in distributed systems. AIChE Journal, 2007, 53, 381-396.	3.6	20
112	Integrating systems design and control using dynamic flexibility analysis. AIChE Journal, 2007, 53, 2048-2061.	3.6	82
113	Cerebrospinal Fluid Flow in the Normal and Hydrocephalic Human Brain. IEEE Transactions on Biomedical Engineering, 2007, 54, 291-302.	4.2	144
114	Distributed System Design Under Uncertainty. Industrial & Engineering Chemistry Research, 2006, 45, 8352-8360.	3.7	9
115	Model and Parameter Uncertainty in Distributed Systems. Industrial & Engineering Chemistry Research, 2006, 45, 7832-7840.	3.7	15
116	Case study on design of regulatory policies for sustainable emission reduction. Computer Aided Chemical Engineering, 2006, , 1119-1124.	0.5	2
117	Dynamics of lateral ventricle and cerebrospinal fluid in normal and hydrocephalic brains. Journal of Magnetic Resonance Imaging, 2006, 24, 756-770.	3.4	93
118	Towards computer-aided separation synthesis. AIChE Journal, 2006, 52, 1392-1409.	3.6	41
119	Design of environmental regulatory policies for sustainable emission reduction. AIChE Journal, 2006, 52, 2792-2804.	3.6	9
120	Pulsatile Cerebrospinal Fluid Dynamics in the Human Brain. IEEE Transactions on Biomedical Engineering, 2005, 52, 557-565.	4.2	139
121	Pressure gradients in the brain in an experimental model of hydrocephalus. Journal of Neurosurgery, 2005, 102, 1069-1075.	1.6	82
122	Solving Kinetic Inversion Problems via a Physically Bounded Gauss-Newton (PGN) Method. Industrial & Engineering Chemistry Research, 2005, 44, 3626-3637.	3.7	35
123	Conceptual design of metallurgical processes based on thermodynamic and economic insights. Chemical Engineering and Processing: Process Intensification, 2004, 43, 625-640.	3.6	7
124	Optimal waste reduction and investment planning under uncertainty. Computers and Chemical Engineering, 2004, 28, 1145-1156.	3.8	25
125	Symbolic Numeric Index Analysis Algorithm for Differential Algebraic Equations. Industrial & Engineering Chemistry Research, 2004, 43, 3886-3894.	3.7	10
126	Temperature Collocation Algorithm for Fast and Robust Distillation Design. Industrial & Engineering Chemistry Research, 2004, 43, 3163-3182.	3.7	34



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127	Plant-Wide Waste Management. 2. Decision Making under Uncertainty. Industrial & Engineering Chemistry Research, 2003, 42, 357-369.	3.7	42
128	Plant-Wide Waste Management. 3. Long-Term Operation and Investment Planning under Uncertainty. Industrial & Engineering Chemistry Research, 2003, 42, 4772-4788.	3.7	25
129	Metallurgical Process DesignA Tribute to Douglas' Conceptual Design Approach. Industrial & Engineering Chemistry Research, 2002, 41, 3797-3805.	3.7	7
130	Plant-Wide Waste Management. 1. Synthesis and Multiobjective Design. Industrial & Engineering Chemistry Research, 2002, 41, 4591-4604.	3.7	59
131	Pharmaceutical waste management under uncertainty. Computers and Chemical Engineering, 2001, 25, 675-681.	3.8	18
132	Modeling of Continuous-Discrete Processes. Lecture Notes in Computer Science, 2001, , 387-402.	1.3	4
133	Decision making for batch manufacturing sites under uncertainty. Computer Aided Chemical Engineering, 2000, , 901-906.	0.5	0
134	Hybrid simulation of continuous-discrete systems. Computer Aided Chemical Engineering, 2000, 8, 163-168.	0.5	4
135	Planning of waste reduction strategies under uncertainty. Computers and Chemical Engineering, 2000, 24, 1043-1048.	3.8	20
136	Synthesis and optimization of waste treatment flowsheets. Computers and Chemical Engineering, 1999, 23, 1415-1425.	3.8	21
137	Plant-wide optimal waste management. Computers and Chemical Engineering, 1999, 23, S67-S70.	3.8	1
138	TechTool " Computer-aided generation process nodels (Part 1 " A generic mathematical language). Computers and Chemical Engineering, 1999, 23, S703-S706.	3.8	6
139	Batch process development: From reactions to manufacturing systems. Computers and Chemical Engineering, 1999, 23, S975-S984.	3.8	7
140	Pollution prevention for production systems of energetic materials. Waste Management, 1998, 17, 165-173.	7.4	7
141	Knowledge-based validation and waste management of batch pharmaceutical process designs. Computers and Chemical Engineering, 1996, 20, S1431-S1436.	3.8	18
142	Generation and assessment of batch processes with ecological considerations. Computers and Chemical Engineering, 1995, 19, 7-13.	3.8	16