Andreas A Linninger

List of Publications by Year in descending order

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142 papers

3,881 citations

34 h-index 55 g-index

150 all docs

150 docs citations

150 times ranked

3447 citing authors

#	Article	IF	Citations
1	The capillary bed offers the largest hemodynamic resistance to the cortical blood supply. Journal of Cerebral Blood Flow and Metabolism, 2017, 37, 52-68.	2.4	186
2	Cerebrospinal Fluid Flow in the Normal and Hydrocephalic Human Brain. IEEE Transactions on Biomedical Engineering, 2007, 54, 291-302.	2.5	144
3	Pulsatile Cerebrospinal Fluid Dynamics in the Human Brain. IEEE Transactions on Biomedical Engineering, 2005, 52, 557-565.	2.5	139
4	Intramedullary spinal cord tumors: a review of current and future treatment strategies. Neurosurgical Focus, 2015, 39, E14.	1.0	129
5	Prediction of convection-enhanced drug delivery to the human brain. Journal of Theoretical Biology, 2008, 250, 125-138.	0.8	126
6	A mathematical model of blood, cerebrospinal fluid and brain dynamics. Journal of Mathematical Biology, 2009, 59, 729-759.	0.8	124
7	Cerebrospinal Fluid Mechanics and Its Coupling to Cerebrovascular Dynamics. Annual Review of Fluid Mechanics, 2016, 48, 219-257.	10.8	107
8	Cerebral Microcirculation and Oxygen Tension in the Human Secondary Cortex. Annals of Biomedical Engineering, 2013, 41, 2264-2284.	1.3	105
9	Dynamics of lateral ventricle and cerebrospinal fluid in normal and hydrocephalic brains. Journal of Magnetic Resonance Imaging, 2006, 24, 756-770.	1.9	93
10	Three-dimensional computational prediction of cerebrospinal fluid flow in the human brain. Computers in Biology and Medicine, 2011, 41, 67-75.	3.9	91
11	Cerebrospinal Fluid Flow Dynamics in the Central Nervous System. Annals of Biomedical Engineering, 2011, 39, 484-496.	1.3	88
12	Pressure gradients in the brain in an experimental model of hydrocephalus. Journal of Neurosurgery, 2005, 102, 1069-1075.	0.9	82
13	Integrating systems design and control using dynamic flexibility analysis. AICHE Journal, 2007, 53, 2048-2061.	1.8	82
14	Computational methods for predicting drug transport in anisotropic and heterogeneous brain tissue. Journal of Biomechanics, 2008, 41, 2176-2187.	0.9	81
15	Hematocrit Distribution and Tissue Oxygenation in Large Microcirculatory Networks. Microcirculation, 2015, 22, 1-18.	1.0	81
16	CNS wide simulation of flow resistance and drug transport due to spinal microanatomy. Journal of Biomechanics, 2015, 48, 2144-2154.	0.9	80
17	The Frequency and Magnitude of Cerebrospinal Fluid Pulsations Influence Intrathecal Drug Distribution. Anesthesia and Analgesia, 2012, 115, 386-394.	1.1	77
18	Normal and Hydrocephalic Brain Dynamics: The Role of Reduced Cerebrospinal Fluid Reabsorption in Ventricular Enlargement. Annals of Biomedical Engineering, 2009, 37, 1434-1447.	1.3	70

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19	Ventricle wall movements and cerebrospinal fluid flow in hydrocephalus. Journal of Neurosurgery, 2011, 115, 159-164.	0.9	61
20	Magnetic Drug Targeting: A Novel Treatment for Intramedullary Spinal Cord Tumors. Scientific Reports, 2018, 8, 11417.	1.6	60
21	Plant-Wide Waste Management. 1. Synthesis and Multiobjective Design. Industrial & Engineering Chemistry Research, 2002, 41, 4591-4604.	1.8	59
22	The Effect of Pulsatile Flow on Intrathecal Drug Delivery in the Spinal Canal. Annals of Biomedical Engineering, 2011, 39, 2592-602.	1.3	58
23	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.	1.1	58
24	Interspecies Scaling in Pharmacokinetics: A Novel Whole-Body Physiologically Based Modeling Framework to Discover Drug Biodistribution Mechanisms in vivo. Journal of Pharmaceutical Sciences, 2012, 101, 1221-1241.	1.6	57
25	The Physics of Hydrocephalus. Pediatric Neurosurgery, 2009, 45, 161-174.	0.4	48
26	A computational model of cerebrospinal fluid production and reabsorption driven by Starling forces. Croatian Medical Journal, 2014, 55, 481-497.	0.2	47
27	Plant-Wide Waste Management. 2. Decision Making under Uncertainty. Industrial & Engineering Chemistry Research, 2003, 42, 357-369.	1.8	42
28	Current status of intratumoral therapy for glioblastoma. Journal of Neuro-Oncology, 2015, 125, 1-7.	1.4	42
29	Towards computer-aided separation synthesis. AICHE Journal, 2006, 52, 1392-1409.	1.8	41
30	Validation of cerebral arteriovenous malformation hemodynamics assessed by DSA using quantitative magnetic resonance angiography: preliminary study. Journal of NeuroInterventional Surgery, 2018, 10, 156-161.	2.0	40
31	Hydrocephalus: the role of cerebral aquaporin-4 channels and computational modeling considerations of cerebrospinal fluid. Neurosurgical Focus, 2016, 41, E8.	1.0	38
32	Solving Kinetic Inversion Problems via a Physically Bounded Gaussâ [^] 'Newton (PGN) Method. Industrial & Lamp; Engineering Chemistry Research, 2005, 44, 3626-3637.	1.8	35
33	Systematic design of drug delivery therapies. Computers and Chemical Engineering, 2008, 32, 89-98.	2.0	35
34	Dynamic regulation of aquaporin-4 water channels in neurological disorders. Croatian Medical Journal, 2015, 56, 401-421.	0.2	35
35	Temperature Collocation Algorithm for Fast and Robust Distillation Design. Industrial & Engineering Chemistry Research, 2004, 43, 3163-3182.	1.8	34
36	Rigorous Mathematical Modeling Techniques for Optimal Delivery of Macromolecules to the Brain. IEEE Transactions on Biomedical Engineering, 2008, 55, 2303-2313.	2.5	32

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37	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.	0.5	30
38	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.	3.9	30
39	Corticosteroid Treatment for Metastatic Spinal Cord Compression: A Review. Global Spine Journal, 2017, 7, 272-279.	1.2	30
40	Magnetic field-enhanced cellular uptake of doxorubicin loaded magnetic nanoparticles for tumor treatment. Materials Research Express, 2016, 3, 095010.	0.8	29
41	Intrathecal magnetic drug targeting using gold-coated magnetite nanoparticles in a human spine model. Nanomedicine, 2014, 9, 1155-1169.	1.7	27
42	Intrathecal magnetic drug targeting for localized delivery of therapeutics in the CNS. Nanomedicine, 2017, 12, 865-877.	1.7	27
43	Modeling the diffusion of D-2-hydroxyglutarate from IDH1 mutant gliomas in the central nervous system. Neuro-Oncology, 2018, 20, 1197-1206.	0.6	27
44	Plant-Wide Waste Management. 3. Long-Term Operation and Investment Planning under Uncertainty. Industrial & Description of the Research, 2003, 42, 4772-4788.	1.8	25
45	Optimal waste reduction and investment planning under uncertainty. Computers and Chemical Engineering, 2004, 28, 1145-1156.	2.0	25
46	Integrated design and control under uncertainty: Embedded control optimization for plantwide processes. Computers and Chemical Engineering, 2011, 35, 1718-1724.	2.0	25
47	Gap-free segmentation of vascular networks with automatic image processing pipeline. Computers in Biology and Medicine, 2017, 82, 29-39.	3.9	25
48	Simulations of blood as a suspension predicts a depth dependent hematocrit in the circulation throughout the cerebral cortex. PLoS Computational Biology, 2018, 14, e1006549.	1.5	25
49	Mathematical synthesis of the cortical circulation for the whole mouse brain-part I. theory and image integration. Computers in Biology and Medicine, 2019, 110, 265-275.	3.9	24
50	Clearance of Subarachnoid Hemorrhage from the Cerebrospinal Fluid in Computational and In Vitro Models. Annals of Biomedical Engineering, 2016, 44, 3478-3494.	1.3	23
51	Automatic recognition of subjectâ€specific cerebrovascular trees. Magnetic Resonance in Medicine, 2017, 77, 398-410.	1.9	22
52	Synthesis and optimization of waste treatment flowsheets. Computers and Chemical Engineering, 1999, 23, 1415-1425.	2.0	21
53	Planning of waste reduction strategies under uncertainty. Computers and Chemical Engineering, 2000, 24, 1043-1048.	2.0	20
54	Discovery of transport and reaction properties in distributed systems. AICHE Journal, 2007, 53, 381-396.	1.8	20

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55	Methods for Determining Agent Concentration Profiles in Agarose Gel During Convection-Enhanced Delivery. IEEE Transactions on Biomedical Engineering, 2011, 58, 626-632.	2.5	20
56	Cerebrospinal fluid dynamics coupled to the global circulation in holistic setting: Mathematical models, numerical methods and applications. International Journal for Numerical Methods in Biomedical Engineering, 2022, 38, e3532.	1.0	20
57	A computer-aided framework for development, identification and management of physiologically-based pharmacokinetic models. Computers and Chemical Engineering, 2014, 71, 677-698.	2.0	19
58	Backflow-free catheters for efficient and safe convection-enhanced delivery of therapeutics. Medical Engineering and Physics, 2017, 45, 15-24.	0.8	19
59	Knowledge-based validation and waste management of batch pharmaceutical process designs. Computers and Chemical Engineering, 1996, 20, S1431-S1436.	2.0	18
60	Pharmaceutical waste management under uncertainty. Computers and Chemical Engineering, 2001, 25, 675-681.	2.0	18
61	Industry-wide energy saving by complex separation networks. Computers and Chemical Engineering, 2009, 33, 2018-2027.	2.0	18
62	Contrast Time-Density Time on Digital Subtraction Angiography Correlates With Cerebral Arteriovenous Malformation Flow Measured by Quantitative Magnetic Resonance Angiography, Angioarchitecture, and Hemorrhage. Neurosurgery, 2018, 83, 210-216.	0.6	18
63	<i>In Vivo</i> Intrathecal Tracer Dispersion in Cynomolgus Monkey Validates Wide Biodistribution Along Neuraxis. IEEE Transactions on Biomedical Engineering, 2020, 67, 1122-1132.	2.5	18
64	Quantification of blood flow patterns in the cerebral arterial circulation of individual (human) subjects. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3288.	1.0	17
65	Generation and assessment of batch processes with ecological considerations. Computers and Chemical Engineering, 1995, 19, 7-13.	2.0	16
66	An impedance sensor to monitor and control cerebral ventricular volume. Medical Engineering and Physics, 2009, 31, 838-845.	0.8	16
67	Medical Image Processing for Fully Integrated Subject Specific Whole Brain Mesh Generation. Technologies, 2015, 3, 126-141.	3.0	16
68	Voxelized simulation of cerebral oxygen perfusion elucidates hypoxia in aged mouse cortex. PLoS Computational Biology, 2021, 17, e1008584.	1.5	16
69	Model and Parameter Uncertainty in Distributed Systems. Industrial & Engineering Chemistry Research, 2006, 45, 7832-7840.	1.8	15
70	A hybrid sequential niche algorithm for optimal engineering design with solution multiplicity. Computers and Chemical Engineering, 2009, 33, 1261-1271.	2.0	14
71	Cerebral arteriovenous malformation venous stenosis is associated with hemodynamic changes at the draining vein-venous sinus junction. Medical Hypotheses, 2019, 123, 86-88.	0.8	14
72	Rigorous Separation Design. 1. Multicomponent Mixtures, Nonideal Mixtures, and Prefractionating Column Networks. Industrial & Engineering Chemistry Research, 2010, 49, 6499-6513.	1.8	13

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73	Dynamic Brain Phantom for Intracranial Volume Measurements. IEEE Transactions on Biomedical Engineering, 2011, 58, 1450-1455.	2.5	13
74	Automatic Reconstruction and Generation of Structured Hexahedral Mesh for Non-planar Bifurcations in Vascular Networks. Computer Aided Chemical Engineering, 2015, 37, 635-640.	0.3	13
75	Mathematical synthesis of the cortical circulation for the whole mouse brainâ€"part II: Microcirculatory closure. Microcirculation, 2021, 28, e12687.	1.0	13
76	First principles pharmacokinetic modeling: A quantitative study on Cyclosporin. Computers and Chemical Engineering, 2013, 54, 97-110.	2.0	12
77	Correlation between angiographic transit times and neurological status on admission in patients with aneurysmal subarachnoid hemorrhage. Journal of Neurosurgery, 2016, 124, 1093-1099.	0.9	12
78	Aneurysm size and the Windkessel effect: An analysis of contrast intensity in digital subtraction angiography. Interventional Neuroradiology, 2017, 23, 357-361.	0.7	12
79	Assessing chronic liver toxicity based on relative gene expression data. Journal of Theoretical Biology, 2008, 254, 308-318.	0.8	11
80	A Barrier-Terrain Methodology for Global Optimization. Industrial & Engineering Chemistry Research, 2008, 47, 2666-2680.	1.8	11
81	Cerebrospinal fluid volume measurements in hydrocephalic rats. Journal of Neurosurgery: Pediatrics, 2012, 10, 347-354.	0.8	11
82	Starling forces drive intracranial water exchange during normal and pathological states. Croatian Medical Journal, 2017, 58, 384-394.	0.2	11
83	Symbolic Numeric Index Analysis Algorithm for Differential Algebraic Equations. Industrial & Samp; Engineering Chemistry Research, 2004, 43, 3886-3894.	1.8	10
84	Multiscale Modeling and Solution Multiplicity in Catalytic Pellet Reactors. Industrial & Engineering Chemistry Research, 2008, 47, 8572-8581.	1.8	10
85	Systems engineers' role in biomedical research. Convection-enhanced drug delivery. Computer Aided Chemical Engineering, 2018, , 271-302.	0.3	10
86	Constitutive relationship and governing physical properties for magnetophoresis. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 30208-30214.	3.3	10
87	Distributed System Design Under Uncertainty. Industrial & Engineering Chemistry Research, 2006, 45, 8352-8360.	1.8	9
88	Design of environmental regulatory policies for sustainable emission reduction. AICHE Journal, 2006, 52, 2792-2804.	1.8	9
89	Parallel Hybrid Algorithm for Process Flexibility Analysis. Industrial & Engineering Chemistry Research, 2008, 47, 8324-8336.	1.8	9
90	Design and optimization of energy efficient complex separation networks. Computers and Chemical Engineering, 2010, 34, 1556-1563.	2.0	9

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91	Embedded Control for Optimizing Flexible Dynamic Process Performance. Industrial & Engineering Chemistry Research, 2011, 50, 4993-5004.	1.8	9
92	Impedance Changes Indicate Proximal Ventriculoperitoneal Shunt Obstruction <italic>In Vitro</italic> . IEEE Transactions on Biomedical Engineering, 2015, 62, 2787-2793.	2.5	9
93	Changes in contrast transit times on digital subtraction angiography post-Pipeline Embolization Device deployment. Interventional Neuroradiology, 2017, 23, 137-142.	0.7	9
94	Quantification of nearâ€wall hemodynamic risk factors in largeâ€scale cerebral arterial trees. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e2987.	1.0	9
95	Exact solution of the diffusionâ€convection equation in cylindrical geometry. AICHE Journal, 2012, 58, 1299-1302.	1.8	8
96	Quantitative Integration of Biological, Pharmacokinetic, and Medical Imaging Data for Organ-Wide Dose-Response Predictions. IEEE Transactions on Biomedical Engineering, 2013, 60, 625-632.	2.5	8
97	Image-guidance technology and the surgical resection of spinal column tumors. Journal of Neuro-Oncology, 2017, 131, 425-435.	1.4	8
98	An efficient full space-time discretization method for subject-specific hemodynamic simulations of cerebral arterial blood flow with distensible wall mechanics. Journal of Biomechanics, 2019, 87, 37-47.	0.9	8
99	Pollution prevention for production systems of energetic materials. Waste Management, 1998, 17, 165-173.	3.7	7
100	Batch process development: From reactions to manufacturing systems. Computers and Chemical Engineering, 1999, 23, S975-S984.	2.0	7
101	Metallurgical Process DesignA Tribute to Douglas' Conceptual Design Approach. Industrial & Engineering Chemistry Research, 2002, 41, 3797-3805.	1.8	7
102	Conceptual design of metallurgical processes based on thermodynamic and economic insights. Chemical Engineering and Processing: Process Intensification, 2004, 43, 625-640.	1.8	7
103	Optimal Catheter Placement for Chemotherapy. Computer Aided Chemical Engineering, 2010, 28, 223-228.	0.3	7
104	Biomedical systems researchâ€"New perspectives opened by quantitative medical imaging. Computers and Chemical Engineering, 2012, 36, 1-9.	2.0	7
105	Validation of parametric mesh generation for subject-specific cerebroarterial trees using modified Hausdorff distance metrics. Computers in Biology and Medicine, 2018, 100, 209-220.	3.9	7
106	Quantum Dot Conjugated Magnetic Nanoparticles for Targeted Drug Delivery and Imaging. Nano Biomedicine and Engineering, $2016, 8, \ldots$	0.3	7
107	TechTool $\hat{a}\in$ " Computer-aided generation process nodels (Part 1 $\hat{a}\in$ " A generic mathematical language). Computers and Chemical Engineering, 1999, 23, S703-S706.	2.0	6
108	Rigorous Separation Design. 2. Network Design Solutions for Mixtures with Various Volatility Differences and Feed Compositions. Industrial & Engineering Chemistry Research, 2010, 49, 8670-8684.	1.8	6

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109	Rigorous synthesis and simulation of complex distillation networks. AICHE Journal, 2011, 57, 136-148.	1.8	6
110	Computer simulations and in vivo convection-enhanced delivery of fluorescent nanoparticles demonstrate variable distribution geometry. Computers and Chemical Engineering, 2014, 71, 672-676.	2.0	6
111	2D parametric contrast time-density analysis for the prediction of complete aneurysm occlusion at six months' post-flow diversion stent. Interventional Neuroradiology, 2020, 26, 468-475.	0.7	6
112	A suite of neurophotonic tools to underpin the contribution of internal brain states in fMRI. Current Opinion in Biomedical Engineering, 2021, 18, 100273.	1.8	6
113	Graphical design and analysis of thermally coupled sidestream columns using column profile maps and temperature collocation. AICHE Journal, 2011, 57, 2406-2420.	1.8	5
114	Hybrid simulation of continuous-discrete systems. Computer Aided Chemical Engineering, 2000, 8, 163-168.	0.3	4
115	Pinch Point Calculations and Its Implications on Robust Distillation Design. Chinese Journal of Chemical Engineering, 2011, 19, 911-925.	1.7	4
116	Optimization of Complex Column Networks with Hybrid Genetic Algorithm. Computer Aided Chemical Engineering, 2012, 31, 1597-1601.	0.3	4
117	Modeling of Continuous-Discrete Processes. Lecture Notes in Computer Science, 2001, , 387-402.	1.0	4
118	Correlation Between Contrast Time–Density Time on Digital Subtraction Angiography and Flow: An inÂVitro Study. World Neurosurgery, 2018, 110, e315-e320.	0.7	3
119	Drug Delivery Applications of Nanoparticles in the Spine. Methods in Molecular Biology, 2020, 2059, 121-143.	0.4	3
120	Case study on design of regulatory policies for sustainable emission reduction. Computer Aided Chemical Engineering, 2006, , 1119-1124.	0.3	2
121	Embedded Control for Optimizing Flexible Dynamic Process Performance. Computer Aided Chemical Engineering, 2009, , 1251-1256.	0.3	2
122	Integration of Design and Control for a large scale flowsheet. Computer Aided Chemical Engineering, 2010, , 1279-1284.	0.3	2
123	Three Dimensional Simulation and Experimental Investigation of Intrathecal Drug Delivery in the Spinal Canal and the Brain. Computer Aided Chemical Engineering, 2011, , 1525-1529.	0.3	2
124	A Computational Model of Cerebral Vasculature, Brain Tissue, and Cerebrospinal Fluid. Computer Aided Chemical Engineering, 2011, 29, 1530-1534.	0.3	2
125	Hemodynamics of cerebral micro vasculature. Computer Aided Chemical Engineering, 2012, 31, 1727-1731.	0.3	2
126	Interpretation of Cellular Imaging and AQP4 Quantification Data in a Single Cell Simulator. Processes, 2014, 2, 218-237.	1.3	2

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127	Cellular Obstruction Clearance in Proximal Ventricular Catheters Using Low-Voltage Joule Heating. IEEE Transactions on Biomedical Engineering, 2018, 65, 2503-2511.	2.5	2
128	Ratio of Arteriovenous Malformation Draining Vein to Adjacent Venous Sinus Diameter Is Associated with Increased Risk of Venous Stenosis. World Neurosurgery, 2019, 130, e1111-e1115.	0.7	2
129	Design and Optimization of Energy Efficient Complex Separation Networks. , 2009, , 747-755.		2
130	Plant-wide optimal waste management. Computers and Chemical Engineering, 1999, 23, S67-S70.	2.0	1
131	Robust Thermodynamically-guided Algorithms for Synthesis of Energy Efficient Separation Networks. Computer Aided Chemical Engineering, 2010, 28, 1117-1122.	0.3	1
132	Physiologically-Based Pharmacokinetic Modeling: Parameter Estimation for Cyclosporin A. Computer Aided Chemical Engineering, 2011, 29, 1543-1547.	0.3	1
133	Cerebrospinal Fluid Dynamics and Intrathecal Delivery. , 2018, , 829-846.		1
134	Prototype Biosensor for Detection of Myelin Basic Protein Biomarker in Hydrocephalus Diagnosis. Sensor Letters, 2016, 14, 84-92.	0.4	1
135	Decision making for batch manufacturing sites under uncertainty. Computer Aided Chemical Engineering, 2000, , 901-906.	0.3	0
136	Synthesis of Energy Efficient Complex Separation Networks. Computer Aided Chemical Engineering, 2009, 27, 1053-1058.	0.3	0
137	Modeling and Design of Distributed Systems; Methods and Algorithms. Computer Aided Chemical Engineering, 2009, 27, 95-100.	0.3	0
138	Systems engineers' role in biomedical research. Computer Aided Chemical Engineering, 2011, , 1535-1542.	0.3	0
139	Additive Manufacturing of Subject-Specific Spine Model for In-Vitro Intrathecal Drug Delivery Study. , 2016, , .		O
140	Mathematical Modelingâ€"Knowledge Acquisition about Brain Physics. , 2009, , 805-813.		0
141	Integrated Design and Control under Uncertainty—Algorithms and Applications. , 2009, , 659-668.		0
142	Medical Image-based Systematic Design of Human Gene Silencing Therapies. Computer Aided Chemical Engineering, 2012, 31, 1732-1736.	0.3	0