Vasilios I Manousiouthakis

List of Publications by Year
in descending order

104 papers	3,117 citations	236612 25 h-index	174990 52 g-index
105 all docs	105 docs citations	105 times ranked	1405 citing authors

#	Article	IF	Citations
1	Synthesis of mass exchange networks. AICHE Journal, 1989, 35, 1233-1244.	1.8	622
2	Automatic synthesis of mass-exchange networks with single-component targets. Chemical Engineering Science, 1990, 45, 2813-2831.	1.9	224
3	Simultaneous synthesis of mass-exchange and regeneration networks. AICHE Journal, 1990, 36, 1209-1219.	1.8	156
4	Strict detailed balance is unnecessary in Monte Carlo simulation. Journal of Chemical Physics, 1999, 110, 2753-2756.	1.2	141
5	Mass/heat-exchange network representation of distillation networks. AICHE Journal, 1992, 38, 1769-1800.	1.8	121
6	Synthesis of decentralized process control structures using the concept of block relative gain. AICHE Journal, 1986, 32, 991-1003.	1.8	118
7	On the theory of optimal sensor placement. AICHE Journal, 2002, 48, 1001-1012.	1.8	113
8	On the state space approach to mass/heat exchanger network design**First presented in the 1990 Annual AIChE Meeting in Chicago, paper #22d.. Chemical Engineering Science, 1998, 53, 2595-2621.	1.9	76
9	A GLOBAL OPTIMIZATION APPROACH TO RATIONALLY CONSTRAINED RATIONAL PROGRAMMING. Chemical Engineering Communications, 1992, 115, 127-147.	1.5	63
10	Infinite DimEnsionAl State-space approach to reactor network synthesis: application to attainable region construction. Computers and Chemical Engineering, 2002, 26, 849-862.	2.0	52
11	Euclidean condition and block relative gain: Connections, conjectures, and clarifications. IEEE Transactions on Automatic Control, 1987, 32, 405-407.	3.6	49
12	IDEAS approach to process network synthesis: Application to multicomponent MEN. AICHE Journal, 2000, 46, 2408-2416.	1.8	49
13	Minimum hot/cold/electric utility cost for heat exchange networks. Computers and Chemical Engineering, 2002, 26, 3-16.	2.0	49
14	A Review of Sustainability Assessment Models as System of Systems. IEEE Systems Journal, 2010, 4, 15-25.	2.9	42
15	Heat and Power Integration of Methane Reforming Based Hydrogen Productionâ€. Industrial & Engineering Chemistry Research, 2005, 44, 9113-9119.	1.8	38
16	The Shrinkâ€"Wrap algorithm for the construction of the attainable region: an application of the IDEAS framework. Computers and Chemical Engineering, 2004, 28, 1563-1575.	2.0	37
17	On constrained infinite-time nonlinear optimal control. Chemical Engineering Science, 2002, 57, 105-114.	1.9	36
18	Dually driven radio frequency plasma simulation with a three moment model. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1998, 16, 2162-2172.	0.9	34

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19	Process intensification of reactive separator networks through the IDEAS conceptual framework. Computers and Chemical Engineering, 2017, 105, 39-55.	2.0	33
20	Non-ideal reactor network synthesis through IDEAS: Attainable region construction. Chemical Engineering Science, 2006, 61, 6936-6945.	1.9	31
21	Waste reduction through multicomponent mass exchange network synthesis. Computers and Chemical Engineering, 1994, 18, S585-S590.	2.0	30
22	Hydrogen car fill-up process modeling and simulation. International Journal of Hydrogen Energy, 2013, 38, 3401-3418.	3.8	30
23	IDEAS approach to process network synthesis: minimum utility cost for complex distillation networks. Chemical Engineering Science, 2002, 57, 3095-3106.	1.9	28
24	Global optimization of reactive distillation networks using IDEAS. Computers and Chemical Engineering, 2004, 28, 2509-2521.	2.0	27
25	A carbon molecular sieve membrane-based reactive separation process for pre-combustion CO2 capture. Journal of Membrane Science, 2020, 605, 118028.	4.1	27
26	Variable density fluid reactor network synthesisâ€”Construction of the attainable region through the IDEAS approach. Chemical Engineering Journal, 2007, 129, 91-103.	6.6	25
27	Infinite DimEnsionAl State-space as a systematic process intensification tool: Energetic intensification of hydrogen production. Chemical Engineering Research and Design, 2017, 120, 372-395.	2.7	25
28	On dimensionality of attainable region construction for isothermal reactor networks. Computers and Chemical Engineering, 2008, 32, 439-450.	2.0	24
29	Conversion targets for plug flow membrane reactors. Chemical Engineering Science, 1999, 54, 2979-2984.	1.9	23
30	Natural gas based hydrogen production with zero carbon dioxide emissions. International Journal of Hydrogen Energy, 2011, 36, 12853-12868.	3.8	22
31	Minimum utility cost of mass exchange networks with variable single component supplies and targets. Industrial & Engineering Chemistry Research, 1993, 32, 1937-1950.	1.8	21
32	On an Implicit ENO Scheme. Journal of Computational Physics, 1994, 115, 376-389.	1.9	21
33	A stochastic approach to global optimization of chemical processes. Computers and Chemical Engineering, 1999, 23, 1351-1356.	2.0	21
34	Simulation of a three-moment fluid model of a two-dimensional radio frequency discharge. Chemical Engineering Science, 1996, 51, 1089-1106.	1.9	20
35	Facile Synthesis of Flame Spray Pyrolysis-Derived Magnesium Oxide Nanoparticles for CO₂ Sorption: Effect of Precursors, Morphology, and Structural Properties. Industrial & Engineering Chemistry Research, 2018, 57, 9054-9061.	1.8	20
36	Membrane-based reactive separations for process intensification during power generation. Catalysis Today, 2019, 331, 18-29.	2.2	20

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37	On the parametrization of all decentralized stabilizing controllers. Systems and Control Letters, 1993, 21, 397-403.	1.3	19
38	IDEAS Approach to Process Network Synthesis:Â Minimum Plate Area for Complex Distillation Networks with Fixed Utility Costâ€. Industrial & Engineering Chemistry Research, 2002, 41, 4984-4992.	1.8	19
39	Infinite-Dimensional State-Space (IDEAS) Approach to Globally Optimal Design of Distillation Networks Featuring Heat and Power Integration. Industrial & Engineering Chemistry Research, 2004, 43, 7826-7842.	1.8	19
40	Experimental Study of an Intensified Waterâ€"Gas Shift Reaction Process Using a Membrane Reactor/Adsorptive Reactor Sequence. Industrial & Engineering Chemistry Research, 2018, 57, 13650-13660.	1.8	19
41	Global optimization methods for chemical process design: Deterministic and stochastic approaches. Korean Journal of Chemical Engineering, 2002, 19, 227-232.	1.2	18
42	Multi-feed attainable region construction using the Shrinkâ€"Wrap algorithm. Chemical Engineering Science, 2008, 63, 5571-5592.	1.9	18
43	Globally optimal power cycle synthesis via the Infinite-DimEnsionAl State-space (IDEAS) approach featuring minimum area with fixed utility. Chemical Engineering Science, 2003, 58, 4291-4305.	1.9	17
44	Multi-scale membrane reactor (MR) modeling and simulation for the water gas shift reaction. Chemical Engineering and Processing: Process Intensification, 2018, 133, 245-262.	1.8	17
45	Automatic synthesis of thermodynamically feasible reaction clusters. AICHE Journal, 1998, 44, 164-173.	1.8	16
46	Identification of the Attainable Region for Batch Reactor Networks. Industrial & Engineering Chemistry Research, 2008, 47, 3388-3400.	1.8	16
47	Natural-Gas-Derived Hydrogen in the Presence of Carbon Fuel Taxes and Concentrated Solar Power. ACS Sustainable Chemistry and Engineering, 2018, 6, 3029-3038.	3.2	16
48	Global optimization of chemical processes using the interval analysis. Korean Journal of Chemical Engineering, 1997, 14, 270-276.	1.2	15
49	IDEAS approach to the synthesis of globally optimal separation networks: application to chromium recovery from wastewater. Journal of Environmental Management, 2003, 7, 549-562.	1.7	15
50	On infinite-time nonlinear quadratic optimal control. Systems and Control Letters, 2004, 51, 259-268.	1.3	15
51	Gas tank fill-up in globally minimum time: Theory and application to hydrogen. International Journal of Hydrogen Energy, 2014, 39, 12138-12157.	3.8	15
52	Total annualized cost optimality properties of state space models for mass and heat exchanger networks. Chemical Engineering Science, 2001, 56, 5835-5851.	1.9	14
53	A minimum area (MA) targeting scheme for single component MEN and HEN synthesis. Computers and Chemical Engineering, 2004, 28, 1237-1247.	2.0	14
54	Multiscale model based design of an energyâ€intensified novel adsorptive reactor process for the water gas shift reaction. AICHE Journal, 2019, 65, e16608.	1.8	14

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55	Parametric Studies of Steam Methane Reforming Using a Multiscale Reactor Model. Industrial & Engineering Chemistry Research, 2017, 56, 14123-14139.	1.8	13
56	Process Intensification of Multipressure Reactive Distillation Networks Using Infinite Dimensional State-Space (IDEAS). Industrial & Engineering Chemistry Research, 2019, 58, 5968-5983.	1.8	13
57	On the carbon cycle impact of combustion of harvested plant biomass vs. fossil carbon resources. Computers and Chemical Engineering, 2020, 140, 106942.	2.0	13
58	On conduction-cooling of a high-temperature superconducting cable. Cryogenics, 2006, 46, 458-467.	0.9	12
59	Global optimization of a simple mathematical model for a proton exchange membrane fuel cell. Computers and Chemical Engineering, 2006, 30, 1226-1234.	2.0	12
60	Automating the AR construction for non-isothermal reactor networks. Computers and Chemical Engineering, 2009, 33, 176-180.	2.0	12
61	CO2 capturing from power plant flue gases: Energetic comparison of amine absorption with MgO based, heat integrated, pressureâ€"temperature-swing adsorption. International Journal of Greenhouse Gas Control, 2014, 22, 256-271.	2.3	12
62	Hydrogen/formic acid production from natural gas with zero carbon dioxide emissions. Journal of Natural Gas Science and Engineering, 2018, 49, 84-93.	2.1	12
63	Techno-Economic Analysis of an Intensified Integrated Gasification Combined Cycle (IGCC) Power Plant Featuring a Combined Membrane Reactor - Adsorptive Reactor (MR-AR) System. Industrial & Engineering Chemistry Research, 2020, 59, 2430-2440.	1.8	12
64	Multi-scale model based design of membrane reactor/separator processes for intensified hydrogen production through the water gas shift reaction. International Journal of Hydrogen Energy, 2020, 45, 7339-7353.	3.8	12
65	Variable target mass-exchange network synthesis through linear programming. AICHE Journal, 1996, 42, 1326-1340.	1.8	11
66	Global Capital/Total Annualized Cost Minimization of Homogeneous and Isothermal Reactor Networks. Industrial & Engineering Chemistry Research, 2008, 47, 3771-3782.	1.8	11
67	Globally Optimal Networks for Multipressure Distillation of Homogeneous Azeotropic Mixtures. Industrial & Engineering Chemistry Research, 2012, 51, 11183-11200.	1.8	11
68	Technical economic analysis of an intensified Integrated Gasification Combined Cycle (IGCC) power plant featuring a sequence of membrane reactors. Journal of Membrane Science, 2019, 579, 266-282.	4.1	11
69	Multi-scale modeling and simulation of a novel membrane reactor (MR)/adsorptive reactor (AR) process. Chemical Engineering and Processing: Process Intensification, 2019, 137, 148-158.	1.8	11
70	Simulation based plasma reactor design for improved ion bombardment uniformity. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2000, 18, 841.	1.6	10
71	Coproduction of acetic acid and hydrogen/power from natural gas with zero carbon dioxide emissions. AICHE Journal, 2018, 64, 860-876.	1.8	10
72	A reactive separation process for pre-combustion CO2 capture employing oxygen-blown coal gasifier off-gas. Chemical Engineering Journal, 2021, 420, 127694.	6.6	10

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73	Analysis and Simulation of Hollow-Fiber Reverse-Osmosis Modules. Separation Science and Technology, 1996, 31, 2505-2529.	1.3	9
74	Hydrogen and dry ice production through phase equilibrium separation and methane reforming. Journal of Power Sources, 2006, 156, 480-488.	4.0	9
75	Best Achievable Isomerization Reaction Conversion in a Membrane Reactor. Industrial & Engineering Chemistry Research, 1998, 37, 3551-3560.	1.8	8
76	Attainable Composition, Energy Consumption, and Entropy Generation Properties for Isothermal/Isobaric Reactor Networks. Industrial & Engineering Chemistry Research, 2013, 52, 3225-3238.	1.8	8
77	On the attainable region for process networks. AIChE Journal, 2014, 60, 193-212.	1.8	8
78	Minimum entropy generation for isothermal endothermic/exothermic reactor networks. AIChE Journal, 2015, 61, 103-117.	1.8	8
79	Optimizing the throughput of hazardous waste incinerators. AIChE Journal, 1990, 36, 1707-1714.	1.8	7
80	Minimum hot-cold and electric utility cost for a finite-capacity reservoir system. Computers and Chemical Engineering, 1999, 23, 1263-1276.	2.0	7
81	Sustainability Over Sets. Environmental Progress and Sustainable Energy, 2018, 37, 1093-1100.	1.3	7
82	Equilibrium analysis of <scp>CH₄</scp>, <scp>CO</scp>, <scp>CO₂</scp>, <scp>H₂O</scp>, <scp>H₂</scp>, <scp>C</scp> mixtures in <scp>Câ€"Hâ€"O</scp> atom space using Gibbs free energy global minimization. AIChE Journal, 2021, 67, .	1.8	7
83	On the Parametrization of All Decentralized Stabilizing Controllers. , 1989, , .		7
84	Pollution prevention through reactor network synthesis: the IDEAS approach. International Journal of Environment and Pollution, 2007, 29, 206.	0.2	6
85	On a sustainability interval index and its computation through global optimization. AIChE Journal, 2012, 58, 2743-2757.	1.8	6
86	Thermodynamic feasibility analysis of a water-splitting thermochemical cycle based on sodium carbonate decomposition. International Journal of Hydrogen Energy, 2019, 44, 4041-4061.	3.8	6
87	Minimum utility cost for a multicomponent mass exchange operation. Chemical Engineering Science, 1998, 53, 3887-3896.	1.9	4
88	Dust transport phenomena in a capacitively coupled plasma reactor. Journal of Applied Physics, 2001, 89, 34-41.	1.1	4
89	Global optimality properties of total annualized and operating cost problems for compressor sequences. AIChE Journal, 2014, 60, 4134-4149.	1.8	4
90	From sustainability to sustainizability. AIChE Journal, 2019, 65, e16704.	1.8	4

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91	On a minimax approach to robust controller synthesis and model selection. , 1988, , .		4
92	On a Finite Branch and Bound Algorithm for the Global Minimization of a Concave Power Law Over a Polytope. Journal of Optimization Theory and Applications, 2011, 151, 121-134.	0.8	3
93	IDEAS based synthesis of minimum volume reactor networks featuring residence time density/distribution models. Computers and Chemical Engineering, 2014, 60, 124-142.	2.0	3
94	Intensified energetically enhanced steam methane reforming through the use of membrane reactors. AIChE Journal, 2020, 66, e16827.	1.8	3
95	Optimization of a 3-D isothermal plug-flow model of a monolith reactor featuring first order reactions. Chemical Engineering Research and Design, 2019, 146, 528-539.	2.7	2
96	On process intensification through storage reactors: A case study on methane steam reforming. Computers and Chemical Engineering, 2020, 133, 106601.	2.0	2
97	On the Intensification of Natural Gas-Based Hydrogen Production Utilizing Hybrid Energy Resources. Smart and Sustainable Manufacturing Systems, 2018, 2, 20170016.	0.3	2
98	On multidomain multiscale modeling and simulation of a novel partial pressure and temperature swing adsorptive reactor (PPTSAR) with application to the water gas shift reaction. Chemical Engineering Journal, 2022, 442, 136161.	6.6	2
99	Coproduction of dimethyl-ether and hydrogen/power from natural gas with no carbon dioxide emissions. Journal of Natural Gas Science and Engineering, 2022, 102, 104546.	2.1	2
100	An ecological application of sustainability and sustainizability over sets. Environmental Progress and Sustainable Energy, 2020, 39, 13336.	1.3	1
101	On Process Intensification through Membrane Storage Reactors. Separations, 2021, 8, 195.	1.1	1
102	Sustainability analysis of ecological systems in fire prone areas using the concept of Sustainability over Sets (SOS). , 2021, , .		0
103	Continuum Fluid Models for Plasma Etching Reactor Control. , 1993, , .		0
104	Chemical-Phase Equilibrium of COâ€"CO₂â€"H₂â€"CH₃OHâ€"DMEâ€"H₂O Mixtures in Câ€"Hâ€"O Atom-Mol Fraction Space Using Gibbs Free Energy Minimization. Industrial & Engineering Chemistry Research, 2022, 61, 6551-6561.	1.8	0