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	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
2	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
3	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
4	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
5	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
6	Sustainability analysis of ecological systems in fire prone areas using the concept of Sustainability over Sets (SOS). , 2021, , .		0
7	On Process Intensification through Membrane Storage Reactors. Separations, 2021, 8, 195.	1.1	1
8	On process intensification through storage reactors: A case study on methane steam reforming. Computers and Chemical Engineering, 2020, 133, 106601.	2.0	2
9	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
10	An ecological application of sustainability and sustainizability over sets. Environmental Progress and Sustainable Energy, 2020, 39, 13336.	1.3	1
11	Intensified energetically enhanced steam methane reforming through the use of membrane reactors. AICHE Journal, 2020, 66, e16827.	1.8	3
12	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
13	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
14	A carbon molecular sieve membrane-based reactive separation process for pre-combustion CO2 capture. Journal of Membrane Science, 2020, 605, 118028.	4.1	27
15	From sustainability to sustainizability. AICHE Journal, 2019, 65, e16704.	1.8	4
16	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
17	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
18	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

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19	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
20	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
21	Process Intensification of Multipressure Reactive Distillation Networks Using Infinite Dimensional State-Space (IDEAS). Industrial & Engineering Chemistry Research, 2019, 58, 5968-5983.	1.8	13
22	Membrane-based reactive separations for process intensification during power generation. Catalysis Today, 2019, 331, 18-29.	2.2	20
23	Sustainability Over Sets. Environmental Progress and Sustainable Energy, 2018, 37, 1093-1100.	1.3	7
24	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
25	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
26	Coproduction of acetic acid and hydrogen/power from natural gas with zero carbon dioxide emissions. AICHE Journal, 2018, 64, 860-876.	1.8	10
27	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
28	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
29	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
30	On the Intensification of Natural Gas-Based Hydrogen Production Utilizing Hybrid Energy Resources. Smart and Sustainable Manufacturing Systems, 2018, 2, 20170016.	0.3	2
31	Process intensification of reactive separator networks through the IDEAS conceptual framework. Computers and Chemical Engineering, 2017, 105, 39-55.	2.0	33
32	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
33	Parametric Studies of Steam Methane Reforming Using a Multiscale Reactor Model. Industrial & Engineering Chemistry Research, 2017, 56, 14123-14139.	1.8	13
34	Minimum entropy generation for isothermal endothermic/exothermic reactor networks. AICHE Journal, 2015, 61, 103-117.	1.8	8
35	On the attainable region for process networks. AICHE Journal, 2014, 60, 193-212.	1.8	8
36	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

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37	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
38	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
39	Global optimality properties of total annualized and operating cost problems for compressor sequences. AICHE Journal, 2014, 60, 4134-4149.	1.8	4
40	Hydrogen car fill-up process modeling and simulation. International Journal of Hydrogen Energy, 2013, 38, 3401-3418.	3.8	30
41	Attainable Composition, Energy Consumption, and Entropy Generation Properties for Isothermal/Isobaric Reactor Networks. Industrial & Engineering Chemistry Research, 2013, 52, 3225-3238.	1.8	8
42	Globally Optimal Networks for Multipressure Distillation of Homogeneous Azeotropic Mixtures. Industrial & Engineering Chemistry Research, 2012, 51, 11183-11200.	1.8	11
43	On a sustainability interval index and its computation through global optimization. AICHE Journal, 2012, 58, 2743-2757.	1.8	6
44	Natural gas based hydrogen production with zero carbon dioxide emissions. International Journal of Hydrogen Energy, 2011, 36, 12853-12868.	3.8	22
45	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
46	A Review of Sustainability Assessment Models as System of Systems. IEEE Systems Journal, 2010, 4, 15-25.	2.9	42
47	Automating the AR construction for non-isothermal reactor networks. Computers and Chemical Engineering, 2009, 33, 176-180.	2.0	12
48	On dimensionality of attainable region construction for isothermal reactor networks. Computers and Chemical Engineering, 2008, 32, 439-450.	2.0	24
49	Multi-feed attainable region construction using the Shrinkâ€“Wrap algorithm. Chemical Engineering Science, 2008, 63, 5571-5592.	1.9	18
50	Identification of the Attainable Region for Batch Reactor Networks. Industrial & Engineering Chemistry Research, 2008, 47, 3388-3400.	1.8	16
51	Global Capital/Total Annualized Cost Minimization of Homogeneous and Isothermal Reactor Networks. Industrial & Engineering Chemistry Research, 2008, 47, 3771-3782.	1.8	11
52	Pollution prevention through reactor network synthesis: the IDEAS approach. International Journal of Environment and Pollution, 2007, 29, 206.	0.2	6
53	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
54	On conduction-cooling of a high-temperature superconducting cable. Cryogenics, 2006, 46, 458-467.	0.9	12

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55	Non-ideal reactor network synthesis through IDEAS: Attainable region construction. Chemical Engineering Science, 2006, 61, 6936-6945.	1.9	31
56	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
57	Hydrogen and dry ice production through phase equilibrium separation and methane reforming. Journal of Power Sources, 2006, 156, 480-488.	4.0	9
58	Heat and Power Integration of Methane Reforming Based Hydrogen Productionâ€. Industrial & Engineering Chemistry Research, 2005, 44, 9113-9119.	1.8	38
59	On infinite-time nonlinear quadratic optimal control. Systems and Control Letters, 2004, 51, 259-268.	1.3	15
60	A minimum area (MA) targeting scheme for single component MEN and HEN synthesis. Computers and Chemical Engineering, 2004, 28, 1237-1247.	2.0	14
61	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
62	Global optimization of reactive distillation networks using IDEAS. Computers and Chemical Engineering, 2004, 28, 2509-2521.	2.0	27
63	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
64	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
65	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
66	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
67	On the theory of optimal sensor placement. AICHE Journal, 2002, 48, 1001-1012.	1.8	113
68	Global optimization methods for chemical process design: Deterministic and stochastic approaches. Korean Journal of Chemical Engineering, 2002, 19, 227-232.	1.2	18
69	Minimum hot/cold/electric utility cost for heat exchange networks. Computers and Chemical Engineering, 2002, 26, 3-16.	2.0	49
70	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
71	On constrained infinite-time nonlinear optimal control. Chemical Engineering Science, 2002, 57, 105-114.	1.9	36
72	IDEAS approach to process network synthesis: minimum utility cost for complex distillation networks. Chemical Engineering Science, 2002, 57, 3095-3106.	1.9	28

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73	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
74	Dust transport phenomena in a capacitively coupled plasma reactor. Journal of Applied Physics, 2001, 89, 34-41.	1.1	4
75	IDEAS approach to process network synthesis: Application to multicomponent MEN. AICHE Journal, 2000, 46, 2408-2416.	1.8	49
76	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
77	Strict detailed balance is unnecessary in Monte Carlo simulation. Journal of Chemical Physics, 1999, 110, 2753-2756.	1.2	141
78	Minimum hot-cold and electric utility cost for a finite-capacity reservoir system. Computers and Chemical Engineering, 1999, 23, 1263-1276.	2.0	7
79	A stochastic approach to global optimization of chemical processes. Computers and Chemical Engineering, 1999, 23, 1351-1356.	2.0	21
80	Conversion targets for plug flow membrane reactors. Chemical Engineering Science, 1999, 54, 2979-2984.	1.9	23
81	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
82	Minimum utility cost for a multicomponent mass exchange operation. Chemical Engineering Science, 1998, 53, 3887-3896.	1.9	4
83	Automatic synthesis of thermodynamically feasible reaction clusters. AICHE Journal, 1998, 44, 164-173.	1.8	16
84	Best Achievable Isomerization Reaction Conversion in a Membrane Reactor. Industrial & Engineering Chemistry Research, 1998, 37, 3551-3560.	1.8	8
85	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
86	Global optimization of chemical processes using the interval analysis. Korean Journal of Chemical Engineering, 1997, 14, 270-276.	1.2	15
87	Analysis and Simulation of Hollow-Fiber Reverse-Osmosis Modules. Separation Science and Technology, 1996, 31, 2505-2529.	1.3	9
88	Variable target mass-exchange network synthesis through linear programming. AICHE Journal, 1996, 42, 1326-1340.	1.8	11
89	Simulation of a three-moment fluid model of a two-dimensional radio frequency discharge. Chemical Engineering Science, 1996, 51, 1089-1106.	1.9	20
90	On an Implicit ENO Scheme. Journal of Computational Physics, 1994, 115, 376-389.	1.9	21

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91	Waste reduction through multicomponent mass exchange network synthesis. Computers and Chemical Engineering, 1994, 18, S585-S590.	2.0	30
92	On the parametrization of all decentralized stabilizing controllers. Systems and Control Letters, 1993, 21, 397-403.	1.3	19
93	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
94	Continuum Fluid Models for Plasma Etching Reactor Control. , 1993, , .		0
95	A GLOBAL OPTIMIZATION APPROACH TO RATIONALLY CONSTRAINED RATIONAL PROGRAMMING. Chemical Engineering Communications, 1992, 115, 127-147.	1.5	63
96	Mass/heat-exchange network representation of distillation networks. AICHE Journal, 1992, 38, 1769-1800.	1.8	121
97	Automatic synthesis of mass-exchange networks with single-component targets. Chemical Engineering Science, 1990, 45, 2813-2831.	1.9	224
98	Simultaneous synthesis of mass-exchange and regeneration networks. AICHE Journal, 1990, 36, 1209-1219.	1.8	156
99	Optimizing the throughput of hazardous waste incinerators. AICHE Journal, 1990, 36, 1707-1714.	1.8	7
100	Synthesis of mass exchange networks. AICHE Journal, 1989, 35, 1233-1244.	1.8	622
101	On the Parametrization of All Decentralized Stabilizing Controllers. , 1989, , .		7
102	On a minimax approach to robust controller synthesis and model selection. , 1988, , .		4
103	Euclidean condition and block relative gain: Connections, conjectures, and clarifications. IEEE Transactions on Automatic Control, 1987, 32, 405-407.	3.6	49
104	Synthesis of decentralized process control structures using the concept of block relative gain. AICHE Journal, 1986, 32, 991-1003.	1.8	118