

# Athanasios I Papadopoulos

## List of Publications by Year in descending order

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85  
papers

2,180  
citations

218381

26  
h-index

233125

45  
g-index

96  
all docs

96  
docs citations

96  
times ranked

1555  
citing authors

#	ARTICLE	IF	CITATIONS
1	On the systematic design and selection of optimal working fluids for Organic Rankine Cycles. Applied Thermal Engineering, 2010, 30, 760-769.	3.0	335
2	Optimum design and operation under uncertainty of power systems using renewable energy sources and hydrogen storage. International Journal of Hydrogen Energy, 2010, 35, 872-891.	3.8	131
3	On the role of working fluid properties in Organic Rankine Cycle performance. Applied Thermal Engineering, 2012, 36, 406-413.	3.0	122
4	Toward Optimum Working Fluid Mixtures for Organic Rankine Cycles using Molecular Design and Sensitivity Analysis. Industrial & Engineering Chemistry Research, 2013, 52, 12116-12133.	1.8	111
5	Systematic Methods for Working Fluid Selection and the Design, Integration and Control of Organic Rankine Cycles—A Review. Energies, 2015, 8, 4755-4801.	1.6	110
6	Multiobjective molecular design for integrated process-solvent systems synthesis. AIChE Journal, 2006, 52, 1057-1070.	1.8	97
7	Phase-Change Solvents and Processes for Postcombustion CO <sub>2</sub> Capture: A Detailed Review. Industrial & Engineering Chemistry Research, 2019, 58, 5088-5111.	1.8	61
8	Efficient integration of optimal solvent and process design using molecular clustering. Chemical Engineering Science, 2006, 61, 6316-6336.	1.9	59
9	Computer-aided molecular design and selection of CO <sub>2</sub> capture solvents based on thermodynamics, reactivity and sustainability. Molecular Systems Design and Engineering, 2016, 1, 313-334.	1.7	56
10	Process flowsheet design optimization for various amine-based solvents in post-combustion CO <sub>2</sub> capture plants. Journal of Cleaner Production, 2016, 111, 204-216.	4.6	55
11	An exergy composite curves approach for the design of optimum multi-pressure organic Rankine cycle processes. Energy, 2014, 69, 285-298.	4.5	51
12	Novel and conventional working fluid mixtures for solar Rankine cycles: Performance assessment and multi-criteria selection. Applied Thermal Engineering, 2015, 75, 384-396.	3.0	49
13	Performance investigation of a hybrid renewable power generation and storage system using systemic power management models. Energy, 2013, 61, 621-635.	4.5	46
14	Sustainable design, integration, and operation for energy high-performance process systems. Energy, 2021, 224, 120158.	4.5	45
15	A systems approach for management of microgrids considering multiple energy carriers, stochastic loads, forecasting and demand side response. Applied Energy, 2018, 226, 546-559.	5.1	44
16	Integrated solvent and process selection for separation and reactive separation systems. Chemical Engineering and Processing: Process Intensification, 2009, 48, 1047-1060.	1.8	42
17	Absorption refrigeration processes with organic working fluid mixtures- a review. Renewable and Sustainable Energy Reviews, 2019, 109, 239-270.	8.2	41
18	Selection of working fluid mixtures for flexible Organic Rankine Cycles under operating variability through a systematic nonlinear sensitivity analysis approach. Applied Thermal Engineering, 2015, 89, 1054-1067.	3.0	38

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19	Organic Rankine Cycle system performance targeting and design for multiple heat sources with simultaneous working fluid selection. <i>Journal of Cleaner Production</i> , 2017, 142, 1950-1970.	4.6	37
20	Optimum synthesis of solvent-based post-combustion CO <sub>2</sub> capture flowsheets through a generalized modeling framework. <i>Clean Technologies and Environmental Policy</i> , 2014, 16, 1363-1380.	2.1	34
21	Reinforcement learning based adaptive power pinch analysis for energy management of stand-alone hybrid energy storage systems considering uncertainty. <i>Energy</i> , 2020, 193, 116622.	4.5	34
22	On the synthesis and optimization of liquid-liquid extraction processes using stochastic search methods. <i>Computers and Chemical Engineering</i> , 2004, 28, 2391-2406.	2.0	33
23	Multi-criteria screening of chemicals considering thermodynamic and life cycle assessment metrics via data envelopment analysis: application to CO <sub>2</sub> capture. <i>Green Chemistry</i> , 2016, 18, 6468-6481.	4.6	33
24	An approach for simultaneous computer-aided molecular design with holistic sustainability assessment: Application to phase-change CO <sub>2</sub> capture solvents. <i>Computers and Chemical Engineering</i> , 2020, 135, 106769.	2.0	31
25	Systematic selection of amine mixtures as post-combustion CO <sub>2</sub> capture solvent candidates. <i>Journal of Cleaner Production</i> , 2016, 136, 159-175.	4.6	29
26	Experimental measurement and assessment of equilibrium behaviour for phase change solvents used in CO <sub>2</sub> capture. <i>Chemical Engineering Science</i> , 2019, 199, 20-27.	1.9	29
27	A review of research facilities, pilot and commercial plants for solvent-based post-combustion CO <sub>2</sub> capture: Packed bed, phase-change and rotating processes. <i>International Journal of Greenhouse Gas Control</i> , 2021, 111, 103474.	2.3	28
28	Thermo-economic and environmental assessment of hybrid vapor compression-absorption refrigeration systems for district cooling. <i>Energy</i> , 2022, 243, 122991.	4.5	24
29	Generic modelling, design and optimization of industrial phosphoric acid production processes. <i>Chemical Engineering and Processing: Process Intensification</i> , 2009, 48, 493-506.	1.8	21
30	Multi-level Design and Selection of Optimum Working Fluids and ORC Systems for Power and Heat Cogeneration from Low Enthalpy Renewable Sources. <i>Computer Aided Chemical Engineering</i> , 2012, , 66-70.	0.3	21
31	Toward Sustainable Solvent-Based Postcombustion CO <sub>2</sub> Capture. <i>Computer Aided Chemical Engineering</i> , 2015, , 279-310.	0.3	20
32	Computer-Aided Molecular Design: Fundamentals, Methods, and Applications. , 2018, , .		19
33	A power grand composite curves approach for analysis and adaptive operation of renewable energy smart grids. <i>Clean Technologies and Environmental Policy</i> , 2015, 17, 1171-1193.	2.1	18
34	Environmental, health and safety assessment of post-combustion CO <sub>2</sub> capture processes with phase-change solvents. <i>Sustainable Production and Consumption</i> , 2021, 25, 60-76.	5.7	18
35	A framework for the integration of solvent and process design with controllability assessment. <i>Chemical Engineering Science</i> , 2017, 159, 154-176.	1.9	16
36	Molecular engineering of sustainable phase-change solvents: From digital design to scaling-up for CO <sub>2</sub> capture. <i>Chemical Engineering Journal</i> , 2021, 420, 127624.	6.6	15

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37	A decision support grid for integrated molecular solvent design and chemical process selection. <i>Computers and Chemical Engineering</i> , 2009, 33, 72-87.	2.0	14
38	Optimum design of industrial post-combustion CO <sub>2</sub> capture processes using phase-change solvents. <i>Chemical Engineering Research and Design</i> , 2021, 175, 209-222.	2.7	14
39	Systematic modeling under uncertainty of single, double and triple effect absorption refrigeration processes. <i>Energy</i> , 2019, 183, 262-278.	4.5	13
40	Dynamic modelling and control of single, double and triple effect absorption refrigeration cycles. <i>Energy</i> , 2020, 210, 118529.	4.5	13
41	Power grand composite curves shaping for adaptive energy management of hybrid microgrids. <i>Renewable Energy</i> , 2016, 95, 433-448.	4.3	12
42	Systematic assessment of working fluid mixtures for absorption refrigeration based on techno-economic, environmental, health and safety performance. <i>Energy Conversion and Management</i> , 2020, 223, 113262.	4.4	12
43	Molecular Design of Working Fluid Mixtures for Organic Rankine Cycles. <i>Computer Aided Chemical Engineering</i> , 2013, 32, 289-294.	0.3	11
44	Investigation of binary, ternary and quaternary mixtures across solution heat exchanger used in absorption refrigeration and process modifications to improve cycle performance. <i>Energy</i> , 2020, 198, 117254.	4.5	11
45	A Framework for Solvent Selection Based on Optimal Separation Process Design and Controllability Properties. <i>Computer Aided Chemical Engineering</i> , 2009, 26, 177-181.	0.3	10
46	Solvent effects on design with operability considerations in post-combustion CO <sub>2</sub> capture plants. <i>Chemical Engineering Research and Design</i> , 2018, 131, 414-429.	2.7	10
47	Enhancement of hybrid renewable energy systems control with neural networks applied to weather forecasting: the case of Olvio. <i>Neural Computing and Applications</i> , 2016, 27, 1093-1118.	3.2	9
48	Efficient Design under Uncertainty of Renewable Power Generation Systems Using Partitioning and Regression in the Course of Optimization. <i>Industrial &amp; Engineering Chemistry Research</i> , 2012, 51, 12862-12876.	1.8	8
49	Review on Modeling of Vapor Compression Chillers: District Cooling Perspective. <i>International Journal of Air-Conditioning and Refrigeration</i> , 2020, 28, 2030003.	0.8	7
50	Efficient selection of conventional and phase-change CO <sub>2</sub> capture solvents and mixtures based on process economic and operating criteria. <i>Journal of Cleaner Production</i> , 2020, 272, 122764.	4.6	6
51	A new correlation for performance prediction of small and large capacity single-effect vapor absorption refrigeration systems. , 2022, 1, 100002.		6
52	The Impact of Novel and Conventional Working Fluids on the Control Performance in Organic Rankine Cycles. <i>Computer Aided Chemical Engineering</i> , 2017, , 2443-2448.	0.3	5
53	Experimental investigation of phase change amine solutions used in CO <sub>2</sub> capture applications: Systems with dimethylcyclohexylamine (DMCA) and N cyclohexyl-1,3-propanediamine (CHAP) or 3-methylaminopropylamine (MAPA). <i>International Journal of Greenhouse Gas Control</i> , 2021, 109, 103353.	2.3	5
54	Off-Design Operation of Conventional and Phase-Change CO <sub>2</sub> Capture Solvents and Mixtures: A Systematic Assessment Approach. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 5316.	1.3	4

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55	EXA2PRO: A Framework for High Development Productivity on Heterogeneous Computing Systems. IEEE Transactions on Parallel and Distributed Systems, 2022, 33, 792-804.	4.0	4
56	CO2 Solubility in diethylenetriamine (DETA) and triethylenetetramine (TETA) aqueous mixtures: Experimental investigation and correlation using the CPA equation of state. Chemical Thermodynamics and Thermal Analysis, 2021, 3-4, 100017.	0.7	4
57	Optimal design of post combustion CO2 capture processes based on phase-change solvents. Computer Aided Chemical Engineering, 2019, , 463-468.	0.3	4
58	Cascaded model predictive controller performance for the selection of robust working fluids in absorption refrigeration cycles. Applied Thermal Engineering, 2022, 206, 118038.	3.0	4
59	Pilot scale assessment of a novel phase-change solvent for energy efficient post -combustion CO2 capture. Journal of Environmental Management, 2022, 317, 115489.	3.8	4
60	Techno-economic assessment of novel and conventional working fluid mixtures for <sc>two-stage</sc> double-effect and triple-effect absorption refrigeration systems. International Journal of Energy Research, 2021, 45, 12784-12805.	2.2	3
61	Design of Cost Optimal and Environmentally Conscious Phosphoric Acid Production Processes under Uncertainty. Chemical Product and Process Modeling, 2008, 3, .	0.5	2
62	Automation for a sustainable food industry: computer aided analysis and control engineering methods. , 2013, , 441-485.		2
63	Sustainability assessment using local lazy learning: The case of post-combustion CO 2 capture solvents. Computer Aided Chemical Engineering, 2018, , 823-828.	0.3	2
64	A Framework for the Integration of Holistic Sustainability Assessment in Computer-Aided Molecular Design. Computer Aided Chemical Engineering, 2019, 46, 13-18.	0.3	2
65	Systematic assessment of the dynamic behavior of ecofriendly refrigerants used in dual vapor compression chiller. Science and Technology for the Built Environment, 2021, 27, 917-935.	0.8	2
66	On the integrated design of solvents and processes using a decomposition based approach. Computer Aided Chemical Engineering, 2004, , 259-264.	0.3	1
67	A generic framework for modeling, design and optimization of industrial phosphoric acid production processes. Computer Aided Chemical Engineering, 2008, , 1149-1154.	0.3	1
68	Homotopy Continuation Solution Method in Nonlinear Model Predictive Control Applications. Computer Aided Chemical Engineering, 2012, 30, 1327-1331.	0.3	1
69	Adaptive Management of Renewable Energy Smart Grids Using a Power Grand Composite Curves Approach. Computer Aided Chemical Engineering, 2015, , 2411-2416.	0.3	1
70	Integrated Multiobjective Molecular and Process Design. Computer Aided Chemical Engineering, 2016, 39, 269-313.	0.3	1
71	Targeting and Design of Organic Rankine Cycle Systems for Multiple Heat Sources with Simultaneous Working Fluid Selection. Computer Aided Chemical Engineering, 2017, 40, 769-774.	0.3	1
72	EXA2PRO programming environment. , 2018, , .		1

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73	Probabilistic adaptive model predictive power pinch analysis (PoPA) energy management approach to uncertainty. <i>Journal of Engineering</i> , 2019, 2019, 4288-4292.	0.6	1
74	Integrated Design of Working Fluid Mixtures and Absorption Refrigeration Cycles. <i>Frontiers in Chemical Engineering</i> , 2021, 3, .	1.3	1
75	A data mining approach for efficient systems optimization under uncertainty using stochastic search methods. <i>Computer Aided Chemical Engineering</i> , 2011, 29, 311-315.	0.3	1
76	Application of Neural Networks Solar Radiation Prediction for Hybrid Renewable Energy Systems. <i>Communications in Computer and Information Science</i> , 2014, , 133-144.	0.4	1
77	Comparative Energy and Exergy Analysis of Large Capacity Ammonia-Water and Water-Lithium Bromide Vapor Absorption Refrigeration (VAR) Cycles. , 2021, , .		1
78	Approximate computing, skeleton programming and run-time scheduling in an algorithm for process design and controllability in distributed and heterogeneous infrastructures. <i>Computers and Chemical Engineering</i> , 2022, 164, 107874.	2.0	1
79	Integrated design of optimal processes and molecules: A framework for solvent-based separation and reactive-separation systems. <i>Computer Aided Chemical Engineering</i> , 2005, 20, 1645-1650.	0.3	0
80	Design of Multi-pressure Organic Rankine Cycles for Waste Heat Recovery in Site Utility Systems. <i>Computer Aided Chemical Engineering</i> , 2014, 33, 109-114.	0.3	0
81	An Integrated Framework for Controllability Assessment and Solvent Selection in Post-Combustion CO <sub>2</sub> Capture Processes. <i>Computer Aided Chemical Engineering</i> , 2015, 37, 1247-1252.	0.3	0
82	Screening of Solvents for CO <sub>2</sub> Capture considering Sustainability Criteria via Data Envelopment Analysis. <i>Computer Aided Chemical Engineering</i> , 2017, , 2011-2016.	0.3	0
83	Adaptive Power Pinch Analysis for Energy management of Hybrid Energy Storage Systems. , 2018, , .		0
84	Modified Operating Parameter-Based Iyer Correlation for the Coefficient of Performance (COP) Prediction of Different Fluid Pairs in Double-Effect Vapor Absorption Refrigeration (VAR) Cycles. , 2021, , .		0
85	Thermodynamic, Environmental and Cost Evaluation of Compression-Absorption Parallel and Cascade Refrigeration Chiller. , 2021, , .		0