Daniel Favrat

List of Publications by Year
in descending order

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97 papers	5,649 citations	66343 42 h-index	79698 73 g-index
105 all docs	105 docs citations	105 times ranked	3692 citing authors

#	Article	IF	Citations
1	Flow Boiling in Horizontal Tubes: Part 1â€"Development of a Diabatic Two-Phase Flow Pattern Map. Journal of Heat Transfer, 1998, 120, 140-147.	2.1	386
2	Flow Boiling in Horizontal Tubes: Part 3â€"Development of a New Heat Transfer Model Based on Flow Pattern. Journal of Heat Transfer, 1998, 120, 156-165.	2.1	303
3	Potential and Evolution of Compressed Air Energy Storage: Energy and Exergy Analyses. Entropy, 2012, 14, 1501-1521.	2.2	203
4	Transcritical or supercritical CO2 cycles using both low- and high-temperature heat sources. Energy, 2012, 43, 402-415.	8.8	184
5	Small hybrid solar power system. Energy, 2003, 28, 1427-1443.	8.8	174
6	Simulation of thermal stresses in anode-supported solid oxide fuel cell stacks. Part I: Probability of failure of the cells. Journal of Power Sources, 2009, 193, 203-215.	7.8	161
7	Energy and exergy analysis of a micro-compressed air energy storage and air cycle heating and cooling system. Energy, 2010, 35, 213-220.	8.8	159
8	Flow Boiling in Horizontal Tubes: Part 2â€"New Heat Transfer Data for Five Refrigerants. Journal of Heat Transfer, 1998, 120, 148-155.	2.1	150
9	EnerGis: A geographical information based system for the evaluation of integrated energy conversion systems in urban areas. Energy, 2010, 35, 830-840.	8.8	143
10	Operating characteristics of constant-pressure compressed air energy storage (CAES) system combined with pumped hydro storage based on energy and exergy analysis. Energy, 2011, 36, 6220-6233.	8.8	140
11	Multi-criteria optimization of a district cogeneration plant integrating a solid oxide fuel cellâ€"gas turbine combined cycle, heat pumps and chillers. Energy, 2003, 28, 497-518.	8.8	138
12	Process flow model of solid oxide fuel cell system supplied with sewage biogas. Journal of Power Sources, 2004, 131, 127-141.	7.8	123
13	Energy balance model of a SOFC cogenerator operated with biogas. Journal of Power Sources, 2003, 118, 375-383.	7.8	105
14	Environomic multi-objective optimisation of a district heating network considering centralized and decentralized heat pumps. Energy, 2010, 35, 751-758.	8.8	101
15	CFD simulation tool for solid oxide fuel cells. Journal of Power Sources, 2004, 131, 313-319.	7.8	97
16	Thermoeconomic optimization of a combined-cycle solar tower power plant. Energy, 2012, 41, 113-120.	8.8	97
17	Optimization of an SOFC-based decentralized polygeneration system for providing energy services in an office-building in TÅkyÅ. Applied Thermal Engineering, 2006, 26, 1409-1419.	6.0	90
18	Mechanical reliability and durability of SOFC stacks. Part II: Modelling of mechanical failures during ageing and cycling. International Journal of Hydrogen Energy, 2012, 37, 9269-9286.	7.1	90

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19	Thermoeconomic design optimization of a thermo-electric energy storage system based on transcritical CO2 cycles. Energy, 2013, 58, 571-587.	8.8	90
20	A methodology for thermo-economic modeling and optimization of solid oxide fuel cell systems. Applied Thermal Engineering, 2007, 27, 2703-2712.	6.0	85
21	Mechanical reliability and durability of SOFC stacks. Part I : Modelling of the effect of operating conditions and design alternatives on the reliability. International Journal of Hydrogen Energy, 2012, 37, 9249-9268.	7.1	84
22	Simulation of SOFC stack and repeat elements including interconnect degradation and anode reoxidation risk. Journal of Power Sources, 2006, 161, 392-403.	7.8	83
23	Multiobjective optimisation of integrated energy systems for remote communities considering economics and CO2 emissions. International Journal of Thermal Sciences, 2005, 44, 1180-1189.	4.9	80
24	Design, experimental investigation and multi-objective optimization of a small-scale radial compressor for heat pump applications. Energy, 2010, 35, 436-450.	8.8	77
25	Energy in the perspective of the sustainable development: The 2000W society challenge. Resources, Conservation and Recycling, 2005, 44, 245-262.	10.8	76
26	Isothermal transcritical CO2 cycles with TES (thermal energy storage) for electricity storage. Energy, 2013, 49, 484-501.	8.8	72
27	Development of a diabatic two-phase flow pattern map for horizontal flow boiling. International Journal of Heat and Mass Transfer, 2002, 45, 291-301.	4.8	69
28	Thermo-Economic Modelling and Optimisation of Fuel Cell Systems. Fuel Cells, 2005, 5, 5-24.	2.4	68
29	Simulation of thermal stresses in anode-supported solid oxide fuel cell stacks. Part II: Loss of gas-tightness, electrical contact and thermal buckling. Journal of Power Sources, 2009, 193, 216-226.	7.8	68
30	Defining â€œWaste Heatâ€•for industrial processes. Applied Thermal Engineering, 2013, 61, 134-142.	6.0	64
31	Experimental investigation of a direct driven radial compressor for domestic heat pumps. International Journal of Refrigeration, 2009, 32, 1918-1928.	3.4	62
32	Process Modeling and Integration of Fuel Ethanol Production from Lignocellulosic Biomass Based on Double Acid Hydrolysis. Energy & Fuels, 2009, 23, 1759-1765.	5.1	60
33	Modelling of the receiver transient flux distribution due to cloud passages on a solar tower thermal power plant. Solar Energy, 2013, 87, 42-52.	6.1	57
34	Thermo-Economic Optimization of a Solid Oxide Fuel Cell, Gas Turbine Hybrid System. Journal of Fuel Cell Science and Technology, 2007, 4, 123-129.	0.8	52
35	In-Tube Flow Boiling of R-407C and R-407C/Oil Mixtures Part II: Plain Tube Results and Predictions. HVAC and R Research, 1998, 4, 373-399.	0.6	50
36	An environomic approach for the modeling and optimization of a district heating network based on centralized and decentralized heat pumps, cogeneration and/or gas furnace. Part II: Application. International Journal of Thermal Sciences, 2000, 39, 731-741.	4.9	48

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37	Generalized model of planar SOFC repeat element for design optimization. Journal of Power Sources, 2004, 131, 304-312.	7.8	48
38	The challenge of introducing an exergy indicator in a local law on energy. Energy, 2008, 33, 130-136.	8.8	48
39	Process integration and optimization of a solid oxide fuel cell â€“ Gas turbine hybrid cycle fueled with hydrothermally gasified waste biomass. Energy, 2012, 41, 408-419.	8.8	48
40	Design and optimization of district energy systems. Computer Aided Chemical Engineering, 2007, 24, 1127-1132.	0.5	46
41	Thermoeconomic analysis of a solar enhanced energy storage concept based on thermodynamic cycles. Energy, 2012, 45, 358-365.	8.8	46
42	Strategic energy planning for large-scale energy systems: A modelling framework to aid decision-making. Energy, 2015, 90, 173-186.	8.8	46
43	Comparison between direct and indirect (prechamber) spark ignition in the case of a cogeneration natural gas engine, part I: engine geometrical parameters. Applied Thermal Engineering, 2002, 22, 1217-1229.	6.0	45
44	Investigation of the prechamber geometrical configuration of a natural gas spark ignition engine for cogeneration: part I. Numerical simulation. International Journal of Thermal Sciences, 2003, 42, 223-237.	4.9	45
45	The Thermoeconomic and Environomic Modeling and Optimization of the Synthesis, Design, and Operation of Combined Cycles With Advanced Options. Journal of Engineering for Gas Turbines and Power, 2001, 123, 717-726.	1.1	44
46	Oxygen permeation and stability of La0.4Ca0.6Fe1â^'xCoxO3â^'Î´ (x = 0, 0.25, 0.5) membranes. Journal of Power Sources, 2003, 118, 270-275.	7.8	44
47	Improving performances of a lean burn cogeneration biogas engine equipped with combustion prechambers. Fuel, 2005, 84, 2001-2007.	6.4	44
48	Energy integration of industrial processes based on the pinch analysis method extended to include exergy factors. Applied Thermal Engineering, 1996, 16, 497-507.	6.0	43
49	Electrochemical Model of Solid Oxide Fuel Cell for Simulation at the Stack Scale II: Implementation of Degradation Processes. Journal of the Electrochemical Society, 2011, 158, B1102.	2.9	42
50	Progressive activation of degradation processes in solid oxide fuel cells stacks: Part I: Lifetime extension by optimisation of the operating conditions. Journal of Power Sources, 2012, 216, 449-463.	7.8	42
51	An environomic approach for the modeling and optimization of a district heating network based on centralized and decentralized heat pumps, cogeneration and/or gas furnace. Part I: Methodology. International Journal of Thermal Sciences, 2000, 39, 721-730.	4.9	41
52	Prototype of a thermally driven heat pump based on integrated Organic Rankine Cycles (ORC). Energy, 2012, 41, 10-17.	8.8	41
53	Thermal modeling of a small anode supported solid oxide fuel cell. Journal of Power Sources, 2003, 118, 367-374.	7.8	38
54	Multi-objective optimization of an advanced combined cycle power plant including CO2 separation options. Energy, 2006, 31, 3117-3134.	8.8	37

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55	Experimental investigation of a Thermally Driven Heat Pump based on a double Organic Rankine Cycle and an oil-free Compressor-Turbine Unit. International Journal of Refrigeration, 2014, 44, 91-100.	3.4	36
56	In-Tube Flow Boiling of R-407C and R-407C/Oil Mixtures Part I: Microfin Tube. HVAC and R Research, 1998, 4, 347-372.	0.6	35
57	Experimental investigation of prechamber autoignition in a natural gas engine for cogeneration. Fuel, 2009, 88, 547-552.	6.4	35
58	Power and cogeneration technology environomic performance typification in the context of CO2 abatement part II: Combined heat and power cogeneration. Energy, 2010, 35, 3517-3523.	8.8	35
59	Evaporation of refrigerants in a horizontal tube: an improved flow pattern dependent heat transfer model compared to ammonia data. International Journal of Heat and Mass Transfer, 2002, 45, 303-317.	4.8	34
60	Investigation of the prechamber geometrical configuration of a natural gas spark ignition engine for cogeneration: part II. Experimentation. International Journal of Thermal Sciences, 2003, 42, 239-253.	4.9	32
61	Sensitivity of Stresses and Failure Mechanisms in SOFCs to the Mechanical Properties and Geometry of the Constitutive Layers. Fuel Cells, 2011, 11, 537-552.	2.4	32
62	Modeling and experimental validation of solid oxide fuel cell materials and stacks. Journal of the European Ceramic Society, 2005, 25, 2627-2632.	5.7	31
63	CO2 mitigation through the use of hybrid solar-combined cycles. Energy Conversion and Management, 1997, 38, S661-S667.	9.2	30
64	Planar and tubular perovskite-type membrane reactors for the partial oxidation of methane to syngas. Journal of Solid State Electrochemistry, 2004, 8, 611.	2.5	29
65	Modeling and Study of the Influence of Sealing on a Solid Oxide Fuel Cell. Journal of Fuel Cell Science and Technology, 2008, 5, .	0.8	29
66	Locally-Resolved Study of Degradation in a SOFC Repeat-Element. ECS Transactions, 2009, 25, 457-466.	0.5	29
67	Electrochemical Model of Solid Oxide Fuel Cell for Simulation at the Stack Scale I. Calibration Procedure on Experimental Data. Journal of the Electrochemical Society, 2011, 158, B1083.	2.9	29
68	Comparison between direct and indirect (prechamber) spark ignition in the case of a cogeneration natural gas engine,. Applied Thermal Engineering, 2002, 22, 1231-1243.	6.0	27
69	Progressive activation of degradation processes in solid oxide fuel cell stacks: Part II: Spatial distribution of the degradation. Journal of Power Sources, 2012, 216, 434-448.	7.8	27
70	Integrated Design and Optimization of Gas Bearing Supported Rotors. Journal of Mechanical Design, Transactions of the ASME, 2010, 132, .	2.9	25
71	The effect of real gas on the properties of Herringbone Grooved Journal Bearings. Tribology International, 2010, 43, 1602-1614.	5.9	23
72	Conventional and advanced CO2 based district energy systems. Energy, 2010, 35, 5070-5081.	8.8	22

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73	Performance and profitability perspectives of a CO2 based district energy network in Geneva's City Centre. Energy, 2015, 85, 221-235.	8.8	22
74	An onset of nucleate boiling criterion for horizontal flow boiling. International Journal of Thermal Sciences, 2000, 39, 909-918.	4.9	20
75	Innovative Hybrid Cycle Solid Oxide FuelÂCellâ€Inverted Gas Turbine with CO₂ÂSeparation. Fuel Cells, 2011, 11, 565-572.	2.4	20
76	Green heating system: characteristics and illustration with multi-criteria optimization of an integrated energy system. Energy, 2004, 29, 225-244.	8.8	18
77	Development of a natural gas reaction mechanism for engine simulations based on rapid compression machine experiments using a multi-objective optimisation strategy. Fuel, 2008, 87, 3046-3054.	6.4	15
78	Study of a Small Size Cogeneration Gas Engine in Stoichiometric and Lean Burn Modes: Experimentation and Simulation. , 1998, , .		13
79	Local current measurement in a solid oxide fuel cell repeat element. Journal of the European Ceramic Society, 2007, 27, 1035-1040.	5.7	11
80	The Error in Gas Temperature Measurements with Thermocouples: Application on an SOFC System Heat Exchanger. Fuel Cells, 2012, 12, 32-40.	2.4	10
81	Key energy and technological aspects of three innovative concepts of district energy networks. Energy, 2016, 117, 465-477.	8.8	10
82	Methodological aspects of the definition of a 2kW society. Energy, 2006, 31, 3159-3170.	8.8	8
83	Impact analysis of carbon tax on the renewal planning of energy supply system for an office building. Energy, 2010, 35, 1040-1046.	8.8	8
84	Evaluation and recommendation of a subsidy instrument for new large hydropower plants, use case of Switzerland. Sustainable Energy Technologies and Assessments, 2018, 26, 6-16.	2.7	8
85	Network synthesis for a district energy system: a step towards sustainability. Computer Aided Chemical Engineering, 2006, 21, 1869-1874.	0.5	7
86	Power and cogeneration technology environomic performance typification in the context of CO2 abatement part I: Power generation. Energy, 2010, 35, 3143-3154.	8.8	7
87	Numerical Simulations of a Prechamber Autoignition Engine Operating on Natural Gas. International Journal of Thermodynamics, 2011, 14, .	1.0	7
88	The effect of bias in gas temperature measurements on the control of a Solid Oxide Fuel Cells system. Journal of Power Sources, 2014, 245, 19-26.	7.8	6
89	Multi-Objective Optimisation of Herringbone Grooved Gas Bearings Supporting a High Speed Rotor, Taking Into Account Rarefied Gas and Real Gas Effects. , 2006, , 857.		5
90	Investigating Reliability on Fuel Cell Model Identification. Part I: A Design of Experiments Approach. Fuel Cells, 2011, 11, 850-865.	2.4	3

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91	The Effects of Dynamic Dispatch on the Degradation and Lifetime of Solid Oxide Fuel Cell Systems. ECS Transactions, 2011, 35, 285-296.	0.5	2
92	Current State of Models for the Prediction of Mechanical Failures in Solid Oxide Fuel Cells. Green Energy and Technology, 2013, , 121-162.	0.6	2
93	Ultra Rapid Natural Gas Port Injection. , 0, , .		1
94	Investigating Reliability on Fuel Cell Model Identification. Part II: An Estimation Method for Stochastic Parameters. Fuel Cells, 2012, 12, 685-708.	2.4	1
95	Multi-scale modeling methodology for computer aided design of a solid oxide fuel cell stack. Computer Aided Chemical Engineering, 2004, , 1081-1086.	0.5	0
96	Introduction to ECOS 2010. Energy, 2012, 41, 2.	8.8	0
97	Investigating Reliability on Fuel Cell Model Identification. Part III: Behavior of Assessment Criteria and Limits in Identification. Fuel Cells, 2013, 13, n/a-n/a.	2.4	0