

P Muthukumar

List of Publications by Year in descending order

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127
papers

4,631
citations

66336

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h-index

118840

62
g-index

132
all docs

132
docs citations

132
times ranked

2195
citing authors

#	ARTICLE	IF	CITATIONS
1	A critical review of high-temperature reversible thermochemical energy storage systems. Applied Energy, 2019, 254, 113733.	10.1	185
2	Drying kinetics and quality analysis of black turmeric (<i>Curcuma caesia</i>) drying in a mixed mode forced convection solar dryer integrated with thermal energy storage. Renewable Energy, 2018, 120, 23-34.	8.9	165
3	Experiments on a metal hydride-based hydrogen storage device. International Journal of Hydrogen Energy, 2005, 30, 1569-1581.	7.1	152
4	Performance studies on a forced convection solar dryer integrated with a paraffin wax-based latent heat storage system. Solar Energy, 2017, 149, 214-226.	6.1	146
5	Role of hybrid-nanofluid in heat transfer enhancement – A review. International Communications in Heat and Mass Transfer, 2021, 125, 105341.	5.6	140
6	Energy and exergy analyses of the solar drying processes of ghost chilli pepper and ginger. Renewable Energy, 2017, 105, 764-773.	8.9	138
7	Performance analyses of mixed mode forced convection solar dryer for drying of stevia leaves. Solar Energy, 2019, 188, 507-518.	6.1	132
8	Metal hydride based heating and cooling systems: A review. International Journal of Hydrogen Energy, 2010, 35, 3817-3831.	7.1	119
9	Experimental investigation of thin layer drying kinetics of ghost chilli pepper (<i>Capsicum Chinense</i>) Tj ETQq1 1 0.784314 rgBT /Overload	8.9	108
10	Thermal modeling and performance analysis of industrial-scale metal hydride based hydrogen storage container. International Journal of Hydrogen Energy, 2012, 37, 14351-14364.	7.1	85
11	Development of novel porous radiant burners for LPG cooking applications. Fuel, 2013, 112, 562-566.	6.4	84
12	A critical review on design aspects and developmental status of metal hydride based thermal machines. International Journal of Hydrogen Energy, 2018, 43, 17753-17779.	7.1	83
13	Compound charging and discharging enhancement in multi-PCM system using non-uniform fin distribution. Renewable Energy, 2021, 171, 299-314.	8.9	79
14	Parametric studies on a metal hydride based hydrogen storage device. International Journal of Hydrogen Energy, 2007, 32, 4988-4997.	7.1	78
15	Studies on porous radiant burners for LPG (liquefied petroleum gas) cooking applications. Energy, 2011, 36, 6074-6080.	8.8	78
16	Performance investigation of a lab-scale latent heat storage prototype – Numerical results. Energy Conversion and Management, 2017, 135, 188-199.	9.2	73
17	Performance analysis of a forced convection mixed mode horizontal solar cabinet dryer for drying of black ginger (<i>Kaempferia parviflora</i>) using two successive air mass flow rates. Renewable Energy, 2020, 152, 55-66.	8.9	73
18	Investigation of charging and discharging characteristics of a horizontal conical shell and tube latent thermal energy storage device. Energy Conversion and Management, 2019, 188, 381-397.	9.2	71

#	ARTICLE	IF	CITATIONS
19	Studies on hydriding kinetics of some La-based metal hydride alloys. <i>International Journal of Hydrogen Energy</i> , 2009, 34, 7253-7262.	7.1	68
20	Modeling and numerical simulation of a 5 kg LaNi ₅ -based hydrogen storage reactor with internal conical fins. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 8794-8809.	7.1	66
21	Thermochemical energy storage system for cooling and process heating applications: A review. <i>Energy Conversion and Management</i> , 2021, 229, 113617.	9.2	65
22	Experiments on a metal hydride based hydrogen compressor. <i>International Journal of Hydrogen Energy</i> , 2005, 30, 879-892.	7.1	61
23	Thermal modeling of LaNi _{4.91} Sn _{0.15} based solid state hydrogen storage device with embedded cooling tubes. <i>International Journal of Hydrogen Energy</i> , 2014, 39, 15549-15562.	7.1	58
24	Experimental investigations on active solar dryers integrated with thermal storage for drying of black pepper. <i>Renewable Energy</i> , 2021, 167, 728-739.	8.9	58
25	Design and optimization of lab-scale sensible heat storage prototype for solar thermal power plant application. <i>Solar Energy</i> , 2013, 97, 217-229.	6.1	55
26	A review on solar dryers integrated with thermal energy storage units for drying agricultural and food products. <i>Solar Energy</i> , 2021, 229, 22-38.	6.1	54
27	Computational study of metal hydride cooling system. <i>International Journal of Hydrogen Energy</i> , 2009, 34, 3164-3172.	7.1	52
28	Niche applications of metal hydrides and related thermal management issues. <i>Journal of Alloys and Compounds</i> , 2015, 645, S117-S122.	5.5	52
29	Numerical and experimental analyses of LPG (liquefied petroleum gas) combustion in a domestic cooking stove with a porous radiant burner. <i>Energy</i> , 2016, 95, 404-414.	8.8	52
30	A novel approach for performance assessment of mechanical draft wet cooling towers. <i>Applied Thermal Engineering</i> , 2017, 121, 14-26.	6.0	52
31	Performance tests on lab-scale sensible heat storage prototypes. <i>Applied Thermal Engineering</i> , 2018, 129, 953-967.	6.0	52
32	Experimental studies on industrial scale metal hydride based hydrogen storage system with embedded cooling tubes. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 13549-13560.	7.1	51
33	Numerical investigation of coupled heat and mass transfer during desorption of hydrogen in metal hydride beds. <i>Energy Conversion and Management</i> , 2009, 50, 69-75.	9.2	50
34	Performance investigations of a single-stage metal hydride heat pump. <i>International Journal of Hydrogen Energy</i> , 2010, 35, 6950-6958.	7.1	50
35	Performance characterization of a medium-scale liquefied petroleum gas cooking stove with a two-layer porous radiant burner. <i>Applied Thermal Engineering</i> , 2015, 89, 44-50.	6.0	50
36	Modelling and Performance Analysis of U Type Evacuated Tube Solar Collector Using Different Working Fluids. <i>Energy Procedia</i> , 2016, 90, 227-237.	1.8	49

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37	Numerical simulation of coupled heat and mass transfer in metal hydride-based hydrogen storage reactor. <i>Journal of Alloys and Compounds</i> , 2009, 472, 466-472.	5.5	48
38	Design methodology and thermal modelling of industrial scale reactor for solid state hydrogen storage. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 20278-20292.	7.1	48
39	Tests on a metal hydride based thermal energy storage system. <i>International Journal of Hydrogen Energy</i> , 2012, 37, 3818-3824.	7.1	46
40	Experimental investigation and numerical modelling on the performance assessments of evacuated U tube solar collector systems. <i>Renewable Energy</i> , 2019, 134, 1344-1361.	8.9	46
41	A review on solar greenhouse dryer: Design, thermal modelling, energy, economic and environmental aspects. <i>Solar Energy</i> , 2021, 229, 3-21.	6.1	46
42	Tests on mechanically alloyed Mg ₂ Ni for hydrogen storage. <i>Journal of Alloys and Compounds</i> , 2008, 452, 456-461.	5.5	44
43	Experimental investigation and parametric studies on structured packing chamber based liquid desiccant dehumidification and regeneration systems. <i>Building and Environment</i> , 2019, 149, 330-348.	6.9	43
44	Parametric studies on a metal hydride based single stage hydrogen compressor. <i>International Journal of Hydrogen Energy</i> , 2002, 27, 1083-1092.	7.1	42
45	Tests on LmNi _{4.91} Sn _{0.15} based solid state hydrogen storage device with embedded cooling tubes – Part A: Absorption process. <i>International Journal of Hydrogen Energy</i> , 2014, 39, 3342-3351.	7.1	40
46	Performance investigation of a lab-scale latent heat storage prototype – Experimental results. <i>Solar Energy</i> , 2017, 155, 971-984.	6.1	40
47	Development and testing of energy efficient and environment friendly porous radiant burner operating on liquefied petroleum gas. <i>Applied Thermal Engineering</i> , 2018, 129, 482-489.	6.0	39
48	Computational study on metal hydride based three-stage hydrogen compressor. <i>International Journal of Hydrogen Energy</i> , 2012, 37, 3797-3806.	7.1	38
49	Studies on metal hydride based single-stage heat transformer. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 7178-7187.	7.1	38
50	Performance tests on a thermally operated hydrogen compressor. <i>International Journal of Hydrogen Energy</i> , 2008, 33, 463-469.	7.1	35
51	Comparative study of phase change phenomenon in high temperature cascade latent heat energy storage system using conduction and conduction-convection models. <i>Solar Energy</i> , 2018, 176, 627-637.	6.1	35
52	Measurement of thermodynamic properties of some hydrogen absorbing alloys. <i>International Journal of Hydrogen Energy</i> , 2009, 34, 1873-1879.	7.1	33
53	Concrete based high temperature thermal energy storage system: Experimental and numerical studies. <i>Energy Conversion and Management</i> , 2019, 198, 111905.	9.2	32
54	Experimental studies on biogas combustion in a novel double layer inert Porous Radiant Burner. <i>Renewable Energy</i> , 2020, 149, 1040-1052.	8.9	32

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55	Performance analysis of arc rib fin embedded in a solar air heater. Thermal Science and Engineering Progress, 2021, 23, 100891.	2.7	30
56	Performance investigation of high-temperature sensible heat thermal energy storage system during charging and discharging cycles. Clean Technologies and Environmental Policy, 2015, 17, 501-513.	4.1	29
57	Performance tests on a double-stage metal hydride based heat transformer. International Journal of Hydrogen Energy, 2013, 38, 15428-15437.	7.1	28
58	Experimental and numerical investigations on high temperature cast steel based sensible heat storage system. Applied Energy, 2019, 251, 113322.	10.1	28
59	Performance investigation of double-stage metal hydride based heat pump. Applied Thermal Engineering, 2010, 30, 2698-2707.	6.0	27
60	Tests on LmNi ₄ .91Sn _{0.15} based solid state hydrogen storage device with embedded cooling tubes – Part B: Desorption process. International Journal of Hydrogen Energy, 2014, 39, 4966-4972.	7.1	27
61	Design and Performance Prediction of a Compact MmNi ₄ .6Al _{0.4} based Hydrogen Storage System. Journal of Energy Storage, 2021, 39, 102612.	8.1	27
62	Design and performance analysis of an annular metal hydride reactor for large-scale hydrogen storage applications. Renewable Energy, 2022, 181, 1155-1166.	8.9	27
63	Performance Assessment of a Counter Flow Cooling Tower – Unique Approach. Energy Procedia, 2017, 109, 243-252.	1.8	25
64	Life cycle Assessment (LCA) and Techno-economic Assessment (TEA) of medium scale (5–10 kW) LPG cooking stove with two-layer porous radiant burner. Applied Thermal Engineering, 2018, 133, 316-326.	6.0	25
65	Parametric investigations on compressor-driven metal hydride based cooling system. Applied Thermal Engineering, 2016, 97, 87-99.	6.0	23
66	Experimental based multilayer perceptron approach for prediction of evacuated solar collector performance in humid subtropical regions. Renewable Energy, 2019, 143, 1566-1580.	8.9	23
67	Performance studies on mixed-mode forced convection solar cabinet dryer under different air mass flow rates for drying of cluster fig. Solar Energy, 2021, 229, 39-51.	6.1	22
68	A novel finite difference model coupled with recursive algorithm for analyzing heat and mass transfer processes in a cross flow dehumidifier/regenerator. International Journal of Thermal Sciences, 2018, 131, 1-13.	4.9	21
69	Assessment of Heat Transfer Characteristics of a Latent Heat Thermal Energy Storage System: Multi Tube Design. Energy Procedia, 2019, 158, 4677-4683.	1.8	21
70	Performance analysis of metal hydride based simultaneous cooling and heat transformation system. International Journal of Hydrogen Energy, 2019, 44, 10906-10915.	7.1	21
71	Parametric studies on MmNi ₄ .7Fe _{0.3} based reactor with embedded cooling tubes for hydrogen storage and cooling application. Journal of Energy Storage, 2021, 35, 102317.	8.1	19
72	Simulation of double-stage double-effect metal hydride heat pump. International Journal of Hydrogen Energy, 2010, 35, 1474-1484.	7.1	18

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73	A novel heat transfer enhancement technique for performance improvements in encapsulated latent heat storage system. <i>Solar Energy</i> , 2018, 164, 276-286.	6.1	18
74	Energy, entransy and exergy analyses of a liquid desiccant regenerator. <i>International Journal of Refrigeration</i> , 2019, 105, 80-91.	3.4	17
75	Experimental study of coupled heat and mass transfer phenomena between air and desiccant in a solar assisted thermal liquid desiccant system. <i>International Journal of Thermal Sciences</i> , 2021, 162, 106795.	4.9	17
76	Experimental investigations of high-temperature shell and multi-tube latent heat storage system. <i>Applied Thermal Engineering</i> , 2021, 198, 117491.	6.0	17
77	Combustion of biogas in Porous Radiant Burner: Low emission combustion. <i>Energy Procedia</i> , 2019, 158, 1116-1121.	1.8	16
78	Parametric Studies on LaNi _{4.7} Al _{0.3} based Hydrogen Storage Reactor with Embedded Cooling Tubes. <i>Energy Procedia</i> , 2019, 158, 2384-2390.	1.8	16
79	Thermal and economic performance assessments of waste cooking oil /kerosene blend operated pressure cook-stove with porous radiant burner. <i>Energy</i> , 2020, 206, 118102.	8.8	16
80	Study of heat and mass transfer in MmNi _{4.6} Al _{0.4} during desorption of hydrogen. <i>International Journal of Hydrogen Energy</i> , 2010, 35, 10811-10818.	7.1	15
81	Measurement of thermochemical properties of some metal hydrides – Titanium (Ti), misch metal (Mm) and lanthanum (La) based alloys. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 5288-5301.	7.1	15
82	Empirical Correlation Based Models for Estimation of Air Cooled and Water Cooled Condenser's Performance. <i>Energy Procedia</i> , 2017, 109, 293-305.	1.8	15
83	Strategies for scaling-up LaNi ₅ -based hydrogen storage system with internal conical fins and cooling tubes. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 19031-19045.	7.1	15
84	Thermal modelling and parametric investigations on coupled heat and mass transfer processes occurred in a packed tower. <i>Heat and Mass Transfer</i> , 2019, 55, 627-644.	2.1	14
85	Fluid to liquid membrane energy exchanger for simultaneous liquid desiccant regeneration and desalination applications – Theoretical and experimental analyses. <i>Energy Conversion and Management</i> , 2020, 204, 112291.	9.2	14
86	Design assessment of a horizontal shell and tube latent heat storage system: Alternative to fin designs. <i>Journal of Energy Storage</i> , 2021, 44, 103282.	8.1	13
87	Performance tests on metal hydride based hydrogen storage devices. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 9570-9577.	7.1	12
88	Analysis of crossed van't Hoff metal hydride based heat pump. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 11415-11420.	7.1	12
89	Coupled Heat and Mass Transfer Analysis of an Adiabatic Dehumidifier – Unique Approach. <i>Energy Procedia</i> , 2016, 90, 305-315.	1.8	12
90	Evaluation of thermo-kinetic and absorption characteristics of pure desiccants and desiccant mixtures. <i>Materials Today: Proceedings</i> , 2020, 26, 1967-1971.	1.8	12

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91	Clustered Porous Radiant Burner: A cleaner alternative for cooking systems in small and medium scale applications. <i>Journal of Cleaner Production</i> , 2021, 308, 127276.	9.3	12
92	Absorption based solid state hydrogen storage system: A review. <i>Sustainable Energy Technologies and Assessments</i> , 2022, 52, 102204.	2.7	12
93	Performance investigation of a single-stage metal hydride heat transformer. <i>International Journal of Green Energy</i> , 2016, 13, 102-109.	3.8	10
94	Performance assessment of evacuated U-tube solar collector: a numerical study. <i>Sadhana - Academy Proceedings in Engineering Sciences</i> , 2019, 44, 1.	1.3	10
95	Coupling strategy of multi-module high temperature solid sensible heat storage system for large scale application. <i>Applied Energy</i> , 2020, 278, 115665.	10.1	10
96	Experimental investigation on structured packed bed liquid desiccant dehumidifier: An optimal mixture design of experiments strategy. <i>International Journal of Refrigeration</i> , 2021, 122, 232-244.	3.4	10
97	Study of coupled heat and mass transfer during absorption of hydrogen in $MmNi_4\text{-}6Al_0\text{-}4$ based hydrogen storage device. <i>Sadhana - Academy Proceedings in Engineering Sciences</i> , 2009, 34, 255-270.	1.3	9
98	Experimental investigation on annular metal hydride reactor for medium to large-scale hydrogen storage applications. <i>Journal of Energy Storage</i> , 2021, 44, 103473.	8.1	9
99	Development of Double-Stage Metal Hydride-Based Hydrogen Compressor for Heat Transformer Application. <i>Journal of Energy Engineering - ASCE</i> , 2015, 141, .	1.9	8
100	Development and performance assessment of LPG operated cluster Porous Radiant Burner for commercial cooking and industrial applications. <i>Energy</i> , 2021, 219, 119581.	8.8	8
101	Investigation of thermal performance in a solar air heater having variable arc ribbed fin configuration. <i>Sustainable Energy Technologies and Assessments</i> , 2022, 52, 102069.	2.7	8
102	Experimental and numerical investigations on the charging and discharging performances of high-temperature cylindrical phase change material encapsulations. <i>Solar Energy</i> , 2021, 224, 411-424.	6.1	7
103	Performance Assessment of a Porous Radiant Cook Stove Fueled with Blend of Waste Vegetable Oil (WVO) and Kerosene. <i>Energy Procedia</i> , 2019, 158, 2391-2396.	1.8	6
104	Thermal Modeling and Performance Investigation of a Double-Stage Metal Hydride-Based Heat Transformer. <i>Numerical Heat Transfer; Part A: Applications</i> , 2015, 67, 883-901.	2.1	5
105	A Review on Clean Combustion Within Porous Media. <i>Energy, Environment, and Sustainability</i> , 2018, , 209-224.	1.0	5
106	Performance analysis of a mixed mode forced convection solar dryer with and without thermal energy storage heat exchanger. <i>IOP Conference Series: Materials Science and Engineering</i> , 2018, 377, 012195.	0.6	5
107	Effect of combustion zone material on the thermal performance of a biogas-fuelled porous media burner: Experimental studies. <i>Biomass Conversion and Biorefinery</i> , 2022, 12, 1555-1563.	4.6	5
108	Numerical investigation of performance trade-off characteristics of a packed bed dehumidifier using aqueous blends of lithium chloride and calcium chloride. <i>Heat and Mass Transfer</i> , 2020, 56, 3093-3109.	2.1	5

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109	Feasibility Study of the Application of a Latent Heat Storage in a Solar Dryer for Drying Green Chili. , 2018, , .		4
110	Study of effects of various parameter on thermal efficiency of porous burner with kerosene pressure stove. Journal of Physics: Conference Series, 2019, 1240, 012136.	0.4	4
111	Performance investigation of lab-scale sensible heat storage prototypes. International Journal of Green Energy, 2019, 16, 1363-1378.	3.8	4
112	Experimental based multi-objective optimisation for structured packed bed liquid desiccant dehumidification systems. Journal of Building Engineering, 2020, 32, 101813.	3.4	4
113	Experimental investigation of a Cast-Steel based Thermal Energy Storage System. Energy Procedia, 2019, 158, 4664-4670.	1.8	3
114	Performance comparison of evacuated U-tube solar collector integrated parabolic reflector with conventional evacuated U-tube solar collector. Sadhana - Academy Proceedings in Engineering Sciences, 2021, 46, 1.	1.3	3
115	Life Cycle assessment of LPG Cook-stove with Porous Radiant Burner and Conventional Burner “A comparative study. Sustainable Energy Technologies and Assessments, 2022, 52, 102255.	2.7	3
116	Experimental Analysis of a Porous Radiant Pressurized Cook Stove by Using a Blend of Waste Cooking Oil (WCO) and Kerosene. , 2018, , .		2
117	Material Characterization Role in Porous Media Combustion Stability and Performance. Materials Today: Proceedings, 2019, 18, 5063-5068.	1.8	2
118	Study of LPG and Biogas Combustion in Two-Layer Porous Radiant Burners (PRBs). Lecture Notes in Mechanical Engineering, 2020, , 1385-1391.	0.4	2
119	Performance tests on embedded cooling tube type metal hydride reactor for heating and cooling applications. Thermal Science and Engineering Progress, 2022, 33, 101349.	2.7	2
120	Energy Saving and Techno-economic Assessment of Self Aspirated Domestic LPG Stove with Porous Radiant Burner. IOP Conference Series: Materials Science and Engineering, 2018, 377, 012194.	0.6	1
121	Impact of preheat zone properties on the flammability limits of crude biogas combustion in a two-layer porous radiant burner. Journal of Physics: Conference Series, 2020, 1473, 012033.	0.4	1
122	Influence of Geometric Configuration on Charging Characteristics of MmNi _{4.6} Fe _{0.4} Based Hydrogen Storage Device. Springer Proceedings in Energy, 2020, , 397-410.	0.3	1
123	Thermodynamic Analysis on Hydrogen Storage System. , 2022, , 253-263.		1
124	Thermal performance and emission analysis of self-aspirated kerosene pressure stove with porous radiant burner using kerosene nanofuels. International Journal of Environmental Science and Technology, 2023, 20, 4851-4860.	3.5	1
125	Numerical study on heat transfer augmentation techniques in concrete based thermal storage module for solar-thermal applications. Thermal Science and Engineering Progress, 2022, 33, 101350.	2.7	1
126	Biogas Cook Stove with a Novel Porous Radiant Burner“An Alternate for LPG Cook Stoves in Rural and Semi-urban Indian Households. Advances in Sustainability Science and Technology, 2021, , 121-132.	0.6	0

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127	Parametric investigations on LCC1 based hydrogen storage system intended for fuel cell applications. International Journal of Hydrogen Energy, 2022, , .	7.1	0