

Alvaro de Gracia

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

91
papers

5,586
citations

35
h-index

74
g-index

93
ext. papers

6,649
ext. citations

7.5
avg, IF

6.38
L-index

#	Paper	IF	Citations
91	Materials used as PCM in thermal energy storage in buildings: A review. <i>Renewable and Sustainable Energy Reviews</i> , 2011 , 15, 1675-1695	16.2	1068
90	Review on phase change materials (PCMs) for cold thermal energy storage applications. <i>Applied Energy</i> , 2012 , 99, 513-533	10.7	667
89	Phase change materials and thermal energy storage for buildings. <i>Energy and Buildings</i> , 2015 , 103, 414-419		361
88	Thermal energy storage in building integrated thermal systems: A review. Part 1. active storage systems. <i>Renewable Energy</i> , 2016 , 88, 526-547	8.1	178
87	Vertical greenery systems for energy savings in buildings: A comparative study between green walls and green facades. <i>Building and Environment</i> , 2017 , 111, 228-237	6.5	164
86	Thermal energy storage in building integrated thermal systems: A review. Part 2. Integration as passive system. <i>Renewable Energy</i> , 2016 , 85, 1334-1356	8.1	155
85	Simulation-based optimization of PCM melting temperature to improve the energy performance in buildings. <i>Applied Energy</i> , 2017 , 202, 420-434	10.7	153
84	Passive cooling of buildings with phase change materials using whole-building energy simulation tools: A review. <i>Renewable and Sustainable Energy Reviews</i> , 2017 , 80, 1239-1255	16.2	128
83	Supercritical CO ₂ as heat transfer fluid: A review. <i>Applied Thermal Engineering</i> , 2017 , 125, 799-810	5.8	119
82	Energy savings due to the use of PCM for relocatable lightweight buildings passive heating and cooling in different weather conditions. <i>Energy and Buildings</i> , 2016 , 129, 274-283	7	115
81	Comparative life cycle assessment of thermal energy storage systems for solar power plants. <i>Renewable Energy</i> , 2012 , 44, 166-173	8.1	112
80	Economic impact of integrating PCM as passive system in buildings using Fanger comfort model. <i>Energy and Buildings</i> , 2016 , 112, 159-172	7	109
79	Life Cycle Assessment of the inclusion of phase change materials (PCM) in experimental buildings. <i>Energy and Buildings</i> , 2010 , 42, 1517-1523	7	101
78	Numerical simulation of a PCM packed bed system: A review. <i>Renewable and Sustainable Energy Reviews</i> , 2017 , 69, 1055-1063	16.2	100
77	Experimental study of a ventilated facade with PCM during winter period. <i>Energy and Buildings</i> , 2013 , 58, 324-332	7	100
76	Simulation and control of thermally activated building systems (TABS). <i>Energy and Buildings</i> , 2016 , 127, 22-42	7	85
75	Thermal analysis of a ventilated facade with PCM for cooling applications. <i>Energy and Buildings</i> , 2013 , 65, 508-515	7	81

74	Optimized demand side management (DSM) of peak electricity demand by coupling low temperature thermal energy storage (TES) and solar PV. <i>Applied Energy</i> , 2018 , 211, 604-616	10.7	79
73	Numerical modelling of ventilated facades: A review. <i>Renewable and Sustainable Energy Reviews</i> , 2013 , 22, 539-549	16.2	75
72	Thermal analysis of including phase change material in a domestic hot water cylinder. <i>Applied Thermal Engineering</i> , 2011 , 31, 3938-3945	5.8	70
71	Dynamic building envelope with PCM for cooling purposes [Proof of concept]. <i>Applied Energy</i> , 2019 , 235, 1245-1253	10.7	61
70	Numerical study on the thermal performance of a ventilated facade with PCM. <i>Applied Thermal Engineering</i> , 2013 , 61, 372-380	5.8	60
69	Integration of renewable technologies in historical and heritage buildings: A review. <i>Energy and Buildings</i> , 2018 , 177, 96-111	7	59
68	Acoustic insulation capacity of Vertical Greenery Systems for buildings. <i>Applied Acoustics</i> , 2016 , 110, 218-226	3.1	59
67	PCM incorporation in a concrete core slab as a thermal storage and supply system: Proof of concept. <i>Energy and Buildings</i> , 2015 , 103, 70-82	7	58
66	Life Cycle Assessment of alveolar brick construction system incorporating phase change materials (PCMs). <i>Applied Energy</i> , 2013 , 101, 600-608	10.7	58
65	Comparison of three different devices available in Spain to test thermal properties of building materials including phase change materials. <i>Applied Energy</i> , 2013 , 109, 421-427	10.7	55
64	Energy performance of a ventilated double skin facade with PCM under different climates. <i>Energy and Buildings</i> , 2015 , 91, 37-42	7	55
63	Experimental study of an active slab with PCM coupled to a solar air collector for heating purposes. <i>Energy and Buildings</i> , 2016 , 128, 12-21	7	45
62	Life cycle assessment of a ventilated facade with PCM in its air chamber. <i>Solar Energy</i> , 2014 , 104, 115-128	3.8	42
61	CO 2 mitigation accounting for Thermal Energy Storage (TES) case studies. <i>Applied Energy</i> , 2015 , 155, 365-377	10.7	41
60	Thermal stress reduction in cool roof membranes using phase change materials (PCM). <i>Energy and Buildings</i> , 2018 , 158, 1097-1105	7	41
59	Optimal control of natural ventilation as passive cooling strategy for improving the energy performance of building envelope with PCM integration. <i>Renewable Energy</i> , 2020 , 162, 171-181	8.1	39
58	Experimental set-up for testing active and passive systems for energy savings in buildings [Lessons learnt. <i>Renewable and Sustainable Energy Reviews</i> , 2018 , 82, 1014-1026	16.2	36
57	In situ thermal and acoustic performance and environmental impact of the introduction of a shape-stabilized PCM layer for building applications. <i>Renewable Energy</i> , 2016 , 85, 281-286	8.1	35

56	Dynamic thermal performance of alveolar brick construction system. <i>Energy Conversion and Management</i> , 2011 , 52, 2495-2500	10.6	33
55	Experimental Evaluation of a Paraffin as Phase Change Material for Thermal Energy Storage in Laboratory Equipment and in a Shell-and-Tube Heat Exchanger. <i>Applied Sciences (Switzerland)</i> , 2016 , 6, 112	2.6	33
54	Model predictive control strategy applied to different types of building for space heating. <i>Applied Energy</i> , 2018 , 231, 959-971	10.7	32
53	Control of a PCM ventilated facade using reinforcement learning techniques. <i>Energy and Buildings</i> , 2015 , 106, 234-242	7	31
52	Adaptation of rammed earth to modern construction systems: Comparative study of thermal behavior under summer conditions. <i>Applied Energy</i> , 2016 , 175, 180-188	10.7	31
51	Active phase change material package for thermal protection of ice cream containers. <i>International Journal of Refrigeration</i> , 2013 , 36, 102-109	3.8	30
50	New equipment for testing steady and transient thermal performance of multilayered building envelopes with PCM. <i>Energy and Buildings</i> , 2011 , 43, 3704-3709	7	29
49	Experimental evaluation of a heating radiant wall coupled to a ground source heat pump. <i>Renewable Energy</i> , 2017 , 105, 520-529	8.1	27
48	Experimental validation of the exact analytical solution to the steady periodic heat transfer problem in a PCM layer. <i>Energy</i> , 2017 , 140, 1131-1147	7.9	27
47	Experimental evaluation of a cooling radiant wall coupled to a ground heat exchanger. <i>Energy and Buildings</i> , 2016 , 129, 484-490	7	27
46	Experimental testing of cooling internal loads with a radiant wall. <i>Renewable Energy</i> , 2018 , 116, 1-8	8.1	26
45	Bibliometric analysis of smart control applications in thermal energy storage systems. A model predictive control approach. <i>Journal of Energy Storage</i> , 2020 , 32, 101704	7.8	25
44	Optimization of roof solar reflectance under different climate conditions, occupancy, building configuration and energy systems. <i>Energy and Buildings</i> , 2017 , 151, 81-97	7	24
43	Use of partial load operating conditions for latent thermal energy storage management. <i>Applied Energy</i> , 2018 , 216, 234-242	10.7	23
42	Experimental evaluation of a concrete core slab with phase change materials for cooling purposes. <i>Energy and Buildings</i> , 2016 , 116, 411-419	7	23
41	Control concepts of a radiant wall working as thermal energy storage for peak load shifting of a heat pump coupled to a PV array. <i>Renewable Energy</i> , 2018 , 118, 489-501	8.1	23
40	A simple model to predict the thermal performance of a ventilated facade with phase change materials. <i>Energy and Buildings</i> , 2015 , 93, 137-142	7	22
39	Phase Change Material Selection for Thermal Energy Storage at High Temperature Range between 210 °C and 270 °C. <i>Energies</i> , 2018 , 11, 861	3.1	21

38	Cool Roof Impact on Building Energy Need: The Role of Thermal Insulation with Varying Climate Conditions. <i>Energies</i> , 2019 , 12, 3354	3.1	20
37	Improving the energy efficiency of passive PCM system using controlled natural ventilation. <i>Energy and Buildings</i> , 2020 , 228, 110483	7	20
36	Computational efficiency in numerical modeling of high temperature latent heat storage: Comparison of selected software tools based on experimental data. <i>Applied Energy</i> , 2016 , 161, 337-348	10.7	19
35	Systematic review on the use of heat pipes in latent heat thermal energy storage tanks. <i>Journal of Energy Storage</i> , 2020 , 32, 101733	7.8	18
34	Influence of the storage period between charge and discharge in a latent heat thermal energy storage system working under partial load operating conditions. <i>Applied Energy</i> , 2019 , 235, 1389-1399	10.7	18
33	Thermal characterization of different substrates under dried conditions for extensive green roofs. <i>Energy and Buildings</i> , 2017 , 144, 175-180	7	17
32	Control strategies comparison of a ventilated facade with PCM [Energy savings, cost reduction and CO2 mitigation. <i>Energy and Buildings</i> , 2016 , 130, 821-828	7	15
31	Thermal behaviour of insulation and phase change materials in buildings with internal heat loads: experimental study. <i>Energy Efficiency</i> , 2015 , 8, 895-904	3	14
30	New formulation and characterization of enhanced bulk-organic phase change materials. <i>Energy and Buildings</i> , 2018 , 167, 38-48	7	14
29	A novel numerical methodology for modelling simple vapour compression refrigeration system. <i>Applied Thermal Engineering</i> , 2017 , 115, 188-200	5.8	13
28	Model predictive control applied to a heating system with PV panels and thermal energy storage. <i>Energy</i> , 2020 , 197, 117229	7.9	13
27	Study of the Thermal Properties and the Fire Performance of Flame Retardant-Organic PCM in Bulk Form. <i>Materials</i> , 2018 , 11,	3.5	13
26	A correlation of the convective heat transfer coefficient between an air flow and a phase change material plate. <i>Applied Thermal Engineering</i> , 2013 , 51, 1245-1254	5.8	13
25	Design of a Prefabricated Concrete Slab with PCM Inside the Hollows. <i>Energy Procedia</i> , 2014 , 57, 2324-2332	3.2	13
24	Solar Absorption in a Ventilated Facade with PCM. Experimental Results. <i>Energy Procedia</i> , 2012 , 30, 986-994	2.9	13
23	Perspectives on thermal energy storage research. <i>Energy</i> , 2021 , 231, 120943	7.9	13
22	IEA SHC Task 42 / ECES Annex 29 [A Simple Tool for the Economic Evaluation of Thermal Energy Storages. <i>Energy Procedia</i> , 2016 , 91, 197-206	2.3	11
21	Development and experimental validation of a transient 2D numeric model for radiant walls. <i>Renewable Energy</i> , 2018 , 115, 859-870	8.1	10

20	Systematic review on model predictive control strategies applied to active thermal energy storage systems. <i>Renewable and Sustainable Energy Reviews</i> , 2021 , 149, 111385	16.2	10
19	Comparative Analysis of Energy Demand and CO2 Emissions on Different Typologies of Residential Buildings in Europe. <i>Energies</i> , 2019 , 12, 2436	3.1	7
18	Control strategies for defrost and evaporator fans operation in walk-in freezers. <i>International Journal of Refrigeration</i> , 2018 , 91, 101-110	3.8	7
17	Optimization of deterministic controls for a cooling radiant wall coupled to a PV array. <i>Applied Energy</i> , 2018 , 229, 1103-1110	10.7	6
16	Thermal characterization of buildings from the monitoring of the AC system consumption. <i>Energy and Buildings</i> , 2016 , 116, 59-68	7	5
15	Smart control of dynamic phase change material wall system. <i>Applied Energy</i> , 2020 , 279, 115807	10.7	5
14	Comparative study between heat pipe and shell-and-tube thermal energy storage. <i>Applied Thermal Engineering</i> , 2021 , 192, 116974	5.8	5
13	Experimental analysis of a latent thermal energy storage system enhanced with metal foam. <i>Journal of Energy Storage</i> , 2021 , 41, 102860	7.8	5
12	Economic evaluation of a hybrid heating system in different climate zones based on model predictive control. <i>Energy Conversion and Management</i> , 2020 , 221, 113205	10.6	4
11	Experimental Study on Two PCM Macro-Encapsulation Designs in a Thermal Energy Storage Tank. <i>Applied Sciences (Switzerland)</i> , 2021 , 11, 6171	2.6	4
10	Frost detection method on evaporator in vapour compression systems. <i>International Journal of Refrigeration</i> , 2020 , 110, 75-82	3.8	3
9	Optimization of Design Variables of a Phase Change Material Storage Tank and Comparison of a 2D Implicit vs. 2D Explicit Model. <i>Energies</i> , 2021 , 14, 2605	3.1	2
8	Simulation analysis of an innovative micro-solar 2kWe Organic Rankine Cycle plant coupled with a multi-apartments building for domestic hot water supply. <i>Energy Procedia</i> , 2019 , 158, 2225-2230	2.3	1
7	Assessing corrosive behaviour of commercial phase change materials in the 2105 °C temperature range. <i>Journal of Energy Storage</i> , 2020 , 32, 101711	7.8	1
6	Characterisation of commercial phase change materials with potential application in gypsum boards for buildings. <i>International Journal of Energy Research</i> ,	4.5	1
5	Analysis of thermal energy storage tanks and PV panels combinations in different buildings controlled through model predictive control. <i>Energy</i> , 2021 , 239, 122201	7.9	1
4	Numerical Analysis of Building Envelope with Movable Phase Change Materials for Heating Applications. <i>Applied Sciences (Switzerland)</i> , 2019 , 9, 3688	2.6	0
3	Static Concept at University of Lleida 2018 , 131-156		

2 Control Solutions for TES Applications **2020**,

1 Thermal energy storage systems for cooling in residential buildings **2021**, 595-623