Alvaro de Gracia

List of Publications by Year
in descending order

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93 papers	7,621 citations	70961 41 h-index	51492 86 g-index
93 all docs	93 docs citations	93 times ranked	5276 citing authors

#	Article	IF	Citations
1	Materials used as PCM in thermal energy storage in buildings: A review. Renewable and Sustainable Energy Reviews, 2011, 15, 1675-1695.	8.2	1,333
2	Review on phase change materials (PCMs) for cold thermal energy storage applications. Applied Energy, 2012, 99, 513-533.	5.1	852
3	Phase change materials and thermal energy storage for buildings. Energy and Buildings, 2015, 103, 414-419.	3.1	486
4	Vertical greenery systems for energy savings in buildings: A comparative study between green walls and green facades. Building and Environment, 2017, 111, 228-237.	3.0	252
5	Thermal energy storage in building integrated thermal systems: AÂreview. Part 1. active storage systems. Renewable Energy, 2016, 88, 526-547.	4.3	230
6	Simulation-based optimization of PCM melting temperature to improve the energy performance in buildings. Applied Energy, 2017, 202, 420-434.	5.1	226
7	Thermal energy storage in building integrated thermal systems: A review. Part 2. Integration as passive system. Renewable Energy, 2016, 85, 1334-1356.	4.3	208
8	Supercritical CO2 as heat transfer fluid: A review. Applied Thermal Engineering, 2017, 125, 799-810.	3.0	197
9	Energy savings due to the use of PCM for relocatable lightweight buildings passive heating and cooling in different weather conditions. Energy and Buildings, 2016, 129, 274-283.	3.1	158
10	Passive cooling of buildings with phase change materials using whole-building energy simulation tools: A review. Renewable and Sustainable Energy Reviews, 2017, 80, 1239-1255.	8.2	158
11	Numerical simulation of a PCM packed bed system: A review. Renewable and Sustainable Energy Reviews, 2017, 69, 1055-1063.	8.2	148
12	Economic impact of integrating PCM as passive system in buildings using Fanger comfort model. Energy and Buildings, 2016, 112, 159-172.	3.1	143
13	Comparative life cycle assessment of thermal energy storage systems for solar power plants. Renewable Energy, 2012, 44, 166-173.	4.3	134
14	Experimental study of a ventilated facade with PCM during winter period. Energy and Buildings, 2013, 58, 324-332.	3.1	132
15	Life Cycle Assessment of the inclusion of phase change materials (PCM) in experimental buildings. Energy and Buildings, 2010, 42, 1517-1523.	3.1	128
16	Simulation and control of thermally activated building systems (TABS). Energy and Buildings, 2016, 127, 22-42.	3.1	116
17	Optimized demand side management (DSM) of peak electricity demand by coupling low temperature thermal energy storage (TES) and solar PV. Applied Energy, 2018, 211, 604-616.	5.1	113
18	Dynamic building envelope with PCM for cooling purposes â€“ Proof of concept. Applied Energy, 2019, 235, 1245-1253.	5.1	108

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19	Thermal analysis of a ventilated facade with PCM for cooling applications. Energy and Buildings, 2013, 65, 508-515.	3.1	97
20	Numerical modelling of ventilated facades: A review. Renewable and Sustainable Energy Reviews, 2013, 22, 539-549.	8.2	94
21	Integration of renewable technologies in historical and heritage buildings: A review. Energy and Buildings, 2018, 177, 96-111.	3.1	85
22	Optimal control of natural ventilation as passive cooling strategy for improving the energy performance of building envelope with PCM integration. Renewable Energy, 2020, 162, 171-181.	4.3	84
23	Thermal analysis of including phase change material in a domestic hot water cylinder. Applied Thermal Engineering, 2011, 31, 3938-3945.	3.0	80
24	Acoustic insulation capacity of Vertical Greenery Systems for buildings. Applied Acoustics, 2016, 110, 218-226.	1.7	76
25	Energy performance of a ventilated double skin facade with PCM under different climates. Energy and Buildings, 2015, 91, 37-42.	3.1	71
26	PCM incorporation in a concrete core slab as a thermal storage and supply system: Proof of concept. Energy and Buildings, 2015, 103, 70-82.	3.1	70
27	Numerical study on the thermal performance of a ventilated facade with PCM. Applied Thermal Engineering, 2013, 61, 372-380.	3.0	65
28	Life Cycle Assessment of alveolar brick construction system incorporating phase change materials (PCMs). Applied Energy, 2013, 101, 600-608.	5.1	65
29	Comparison of three different devices available in Spain to test thermal properties of building materials including phase change materials. Applied Energy, 2013, 109, 421-427.	5.1	64
30	Experimental study of an active slab with PCM coupled to a solar air collector for heating purposes. Energy and Buildings, 2016, 128, 12-21.	3.1	62
31	CO 2 mitigation accounting for Thermal Energy Storage (TES) case studies. Applied Energy, 2015, 155, 365-377.	5.1	58
32	Thermal stress reduction in cool roof membranes using phase change materials (PCM). Energy and Buildings, 2018, 158, 1097-1105.	3.1	57
33	Model predictive control strategy applied to different types of building for space heating. Applied Energy, 2018, 231, 959-971.	5.1	57
34	In situ thermal and acoustic performance and environmental impact of the introduction of a shape-stabilized PCM layer for building applications. Renewable Energy, 2016, 85, 281-286.	4.3	51
35	Improving the energy efficiency of passive PCM system using controlled natural ventilation. Energy and Buildings, 2020, 228, 110483.	3.1	51
36	Experimental set-up for testing active and passive systems for energy savings in buildings â€“ Lessons learnt. Renewable and Sustainable Energy Reviews, 2018, 82, 1014-1026.	8.2	50

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37	Life cycle assessment of a ventilated facade with PCM in its air chamber. Solar Energy, 2014, 104, 115-123.	2.9	47
38	Perspectives on thermal energy storage research. Energy, 2021, 231, 120943.	4.5	47
39	Active phase change material package for thermal protection of ice cream containers. International Journal of Refrigeration, 2013, 36, 102-109.	1.8	44
40	Control of a PCM ventilated facade using reinforcement learning techniques. Energy and Buildings, 2015, 106, 234-242.	3.1	43
41	Experimental Evaluation of a Paraffin as Phase Change Material for Thermal Energy Storage in Laboratory Equipment and in a Shell-and-Tube Heat Exchanger. Applied Sciences (Switzerland), 2016, 6, 112.	1.3	43
42	Bibliometric analysis of smart control applications in thermal energy storage systems. A model predictive control approach. Journal of Energy Storage, 2020, 32, 101704.	3.9	41
43	Systematic review on model predictive control strategies applied to active thermal energy storage systems. Renewable and Sustainable Energy Reviews, 2021, 149, 111385.	8.2	39
44	Experimental evaluation of a heating radiant wall coupled to a ground source heat pump. Renewable Energy, 2017, 105, 520-529.	4.3	37
45	Control concepts of a radiant wall working as thermal energy storage for peak load shifting of a heat pump coupled to a PV array. Renewable Energy, 2018, 118, 489-501.	4.3	37
46	Dynamic thermal performance of alveolar brick construction system. Energy Conversion and Management, 2011, 52, 2495-2500.	4.4	36
47	Adaptation of rammed earth to modern construction systems: Comparative study of thermal behavior under summer conditions. Applied Energy, 2016, 175, 180-188.	5.1	35
48	Experimental testing of cooling internal loads with a radiant wall. Renewable Energy, 2018, 116, 1-8.	4.3	35
49	Phase Change Material Selection for Thermal Energy Storage at High Temperature Range between 210 Â°C and 270 Â°C. Energies, 2018, 11, 861.	1.6	35
50	Experimental validation of the exact analytical solution to the steady periodic heat transfer problem in a PCM layer. Energy, 2017, 140, 1131-1147.	4.5	34
51	Systematic review on the use of heat pipes in latent heat thermal energy storage tanks. Journal of Energy Storage, 2020, 32, 101733.	3.9	34
52	Model predictive control applied to a heating system with PV panels and thermal energy storage. Energy, 2020, 197, 117229.	4.5	34
53	New equipment for testing steady and transient thermal performance of multilayered building envelopes with PCM. Energy and Buildings, 2011, 43, 3704-3709.	3.1	33
54	Experimental evaluation of a cooling radiant wall coupled to a ground heat exchanger. Energy and Buildings, 2016, 129, 484-490.	3.1	33

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55	Thermal characterization of different substrates under dried conditions for extensive green roofs. Energy and Buildings, 2017, 144, 175-180.	3.1	33
56	Optimization of roof solar reflectance under different climate conditions, occupancy, building configuration and energy systems. Energy and Buildings, 2017, 151, 81-97.	3.1	29
57	Use of partial load operating conditions for latent thermal energy storage management. Applied Energy, 2018, 216, 234-242.	5.1	29
58	A simple model to predict the thermal performance of a ventilated facade with phase change materials. Energy and Buildings, 2015, 93, 137-142.	3.1	28
59	Experimental evaluation of a concrete core slab with phase change materials for cooling purposes. Energy and Buildings, 2016, 116, 411-419.	3.1	28
60	Computational efficiency in numerical modeling of high temperature latent heat storage: Comparison of selected software tools based on experimental data. Applied Energy, 2016, 161, 337-348.	5.1	26
61	Study of the Thermal Properties and the Fire Performance of Flame Retardant-Organic PCM in Bulk Form. Materials, 2018, 11, 117.	1.3	25
62	Influence of the storage period between charge and discharge in a latent heat thermal energy storage system working under partial load operating conditions. Applied Energy, 2019, 235, 1389-1399.	5.1	25
63	Cool Roof Impact on Building Energy Need: The Role of Thermal Insulation with Varying Climate Conditions. Energies, 2019, 12, 3354.	1.6	24
64	Control strategies comparison of a ventilated facade with PCM â€“ energy savings, cost reduction and CO2 mitigation. Energy and Buildings, 2016, 130, 821-828.	3.1	22
65	Experimental analysis of a latent thermal energy storage system enhanced with metal foam. Journal of Energy Storage, 2021, 41, 102860.	3.9	22
66	New formulation and characterization of enhanced bulk-organic phase change materials. Energy and Buildings, 2018, 167, 38-48.	3.1	21
67	Solar Absorption in a Ventilated Facade with PCM. Experimental Results. Energy Procedia, 2012, 30, 986-994.	1.8	17
68	Design of a Prefabricated Concrete Slab with PCM Inside the Hollows. Energy Procedia, 2014, 57, 2324-2332.	1.8	17
69	A novel numerical methodology for modelling simple vapour compression refrigeration system. Applied Thermal Engineering, 2017, 115, 188-200.	3.0	17
70	Experimental Study on Two PCM Macro-Encapsulation Designs in a Thermal Energy Storage Tank. Applied Sciences (Switzerland), 2021, 11, 6171.	1.3	16
71	Thermal behaviour of insulation and phase change materials in buildings with internal heat loads: experimental study. Energy Efficiency, 2015, 8, 895-904.	1.3	15
72	IEA SHC Task 42 / ECES Annex 29 â€“ A Simple Tool for the Economic Evaluation of Thermal Energy Storages. Energy Procedia, 2016, 91, 197-206.	1.8	15

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73	Development and experimental validation of a transient 2D numeric model for radiant walls. Renewable Energy, 2018, 115, 859-870.	4.3	15
74	A correlation of the convective heat transfer coefficient between an air flow and a phase change material plate. Applied Thermal Engineering, 2013, 51, 1245-1254.	3.0	14
75	Control strategies for defrost and evaporator fans operation in walk-in freezers. International Journal of Refrigeration, 2018, 91, 101-110.	1.8	14
76	Comparative Analysis of Energy Demand and CO2 Emissions on Different Typologies of Residential Buildings in Europe. Energies, 2019, 12, 2436.	1.6	14
77	Smart control of dynamic phase change material wall system. Applied Energy, 2020, 279, 115807.	5.1	14
78	Assessing corrosive behaviour of commercial phase change materials in the 21â€“25 ÂºC temperature range. Journal of Energy Storage, 2020, 32, 101711.	3.9	14
79	Optimization of deterministic controls for a cooling radiant wall coupled to a PV array. Applied Energy, 2018, 229, 1103-1110.	5.1	12
80	Economic evaluation of a hybrid heating system in different climate zones based on model predictive control. Energy Conversion and Management, 2020, 221, 113205.	4.4	11
81	Comparative study between heat pipe and shell-and-tube thermal energy storage. Applied Thermal Engineering, 2021, 192, 116974.	3.0	10
82	Analysis of thermal energy storage tanks and PV panels combinations in different buildings controlled through model predictive control. Energy, 2022, 239, 122201.	4.5	10
83	Numerical Analysis of Building Envelope with Movable Phase Change Materials for Heating Applications. Applied Sciences (Switzerland), 2019, 9, 3688.	1.3	8
84	Frost detection method on evaporator in vapour compression systems. International Journal of Refrigeration, 2020, 110, 75-82.	1.8	8
85	Thermal characterization of buildings from the monitoring of the AC system consumption. Energy and Buildings, 2016, 116, 59-68.	3.1	7
86	Optimization of Design Variables of a Phase Change Material Storage Tank and Comparison of a 2D Implicit vs. 2D Explicit Model. Energies, 2021, 14, 2605.	1.6	7
87	Characterisation of commercial phase change materials with potential application in gypsum boards for buildings. International Journal of Energy Research, 2022, 46, 860-875.	2.2	5
88	Simulation analysis of an innovative micro-solar 2kWe Organic Rankine Cycle plant coupled with a multi-apartments building for domestic hot water supply. Energy Procedia, 2019, 158, 2225-2230.	1.8	1
89	Thermal energy storage systems for cooling in residential buildings. , 2021, , 595-623.		1
90	Thermal Behaviour of Mediterranean Buildings: Experimental Study. , 2010, , .		1

#	Article	IF	Citations
91	Static Concept at University of Lleida. , 2018, , 131-156.		0
92	Optimization of Time-Of-Use Tariffs Demand Side Management Coupled with Cold Thermal Energy Storage (TES) and Solar PV to Reduce On-Peak Demand. , 2016, , .		0
93	Control Solutions for TES Applications. , 2022, , 579-583.		0