JiÅÃ᷾ MadÄ›ra

List of Publications by Year
in descending order

145 papers	729 citations	623734 14 h-index	642732 23 g-index
145 all docs	145 docs citations	145 times ranked	352 citing authors

#	Article	IF	Citations
1	The effect of compressive stress on thermal and hygric properties of Portland cement mortar in wide temperature and moisture ranges. Cement and Concrete Research, 2000, 30, 1267-1276.	11.0	52
2	Application of waste ceramic dust as a ready-to-use replacement of cement in lime-cement plasters: an environmental-friendly and energy-efficient solution. Clean Technologies and Environmental Policy, 2016, 18, 1725-1733.	4.1	51
3	Exterior thermal insulation systems for AAC building envelopes: Computational analysis aimed at increasing service life. Energy and Buildings, 2012, 47, 84-90.	6.7	43
4	Computational modelling of coupled water and salt transport in porous materials using diffusionâ€"advection model. Journal of the Franklin Institute, 2011, 348, 1574-1587.	3.4	41
5	Parallel modeling of hygrothermal performance of external wall made of highly perforated bricks. Advances in Engineering Software, 2017, 113, 47-53.	3.8	37
6	Effect of applied weather data sets in simulation of building energy demands: Comparison of design years with recent weather data. Renewable and Sustainable Energy Reviews, 2019, 100, 22-32.	16.4	33
7	Computer aided design of interior thermal insulation system suitable for autoclaved aerated concrete structures. Applied Thermal Engineering, 2013, 58, 165-172.	6.0	29
8	Damage functions for the cold regions and their applications in hygrothermal simulations of different types of building structures. Cold Regions Science and Technology, 2017, 135, 1-7.	3.5	28
9	Generation of a critical weather year for hygrothermal simulations using partial weather data sets. Building and Environment, 2014, 76, 54-61.	6.9	27
10	Thermal and hygric assessment of an inside-insulated brick wall: 2D critical experiment and computational analysis. Journal of Building Physics, 2018, 41, 497-520.	2.4	26
11	Service Life Assessment of Historical Building Envelopes Constructed Using Different Types of Sandstone: A Computational Analysis Based on Experimental Input Data. Scientific World Journal, The, 2014, 2014, 1-12.	2.1	25
12	A fast computational approach for the determination of thermal properties of hollow bricks in energy-related calculations. Energy, 2015, 83, 749-755.	8.8	18
13	Determination of the equivalent thermal conductivity of complex material systems with large-scale heterogeneities. International Journal of Thermal Sciences, 2014, 86, 365-373.	4.9	16
14	Coupled shrinkage and damage analysis of autoclaved aerated concrete. Applied Mathematics and Computation, 2015, 267, 427-435.	2.2	16
15	Computational analysis of hygrothermal performance of renovation renders. , 2010, , .		16
16	Effect of Moisture Content on Thermal Properties of Porous Building Materials. International Journal of Thermophysics, 2017, 38, 1.	2.1	13
17	Interior thermal insulation systems based on wood fiberboards: experimental analysis and computational assessment of hygrothermal and energy performance in the Central European climate. Energy and Buildings, 2020, 222, 110093.	6.7	13
18	Computational assessment of thermal performance of contemporary ceramic blocks with complex internal geometry in building envelopes. Energy and Buildings, 2015, 99, 61-66.	6.7	12

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19	Heat and Moisture Transport and Storage Parameters of Bricks Affected by the Environment. International Journal of Thermophysics, 2018, 39, 1.	2.1	12
20	Computational prediction of hygrothermal conditions in innovated AAC-based building envelopes. WIT Transactions on Engineering Sciences, 2010, , .	0.0	10
21	Water transport parameters of autoclaved aerated concrete: Experimental assessment of different modeling approaches. Journal of Building Physics, 2015, 39, 170-188.	2.4	9
22	Hygrothermal performance of innovative renovation renders used for different types of historical masonry. , 2011, , .		9
23	A material database for computational models of heat, moisture, salt and momentum transport: Construction of the code as an input module and example of application. , 2013, , .		8
24	Determination of Radiative Heat Transfer Coefficient at High Temperatures Using a Combined Experimental-Computational Technique. Measurement Science Review, 2015, 15, 85-91.	1.0	8
25	Assessment of fast heat evolving processes using inverse analysis of calorimetric data. International Journal of Heat and Mass Transfer, 2017, 115, 831-838.	4.8	8
26	Heat transport and storage processes in differential scanning calorimeter: Computational analysis and model validation. International Journal of Heat and Mass Transfer, 2019, 136, 355-364.	4.8	8
27	Database of climatic data as a rewarding tool for inclusion of weather observations in computational service life assessments of historical buildings. , 2013, , .		8
28	Determination of moisture-dependent moisture diffusivity using smoothed experimental data. , 2013, , .		7
29	Modification of the computational model of coupled heat and moisture transport: The transition between the liquid and gaseous phases of water. AIP Conference Proceedings, 2015, , .	0.4	7
30	Correction of Errors in DSC Measurements Using Detailed Modeling of Thermal Phenomena in Calorimeter-Sample System. IEEE Transactions on Instrumentation and Measurement, 2020, 69, 8178-8186.	4.7	7
31	Heat and moisture transport in porous materials involving cyclic wetting and drying. , 2009, , .		7
32	Contribution of waste products in single-layer ceramic building envelopes to overall energy savings. Energy, 2016, 111, 947-955.	8.8	6
33	Influence of weather-affected material characteristics on appearance of freeze/thaw cycles in building envelopes. AIP Conference Proceedings, 2017, , .	0.4	6
34	Analysis of the Frost-Induced Damage of Building Enclosures on the Territory of the Czech Republic. Advances in Materials Science and Engineering, 2018, 2018, 1-11.	1.8	6
35	Experimental Determination of Frost Resistance of Autoclaved Aerated Concrete at Different Levels of Moisture Saturation. International Journal of Thermophysics, 2018, 39, 1.	2.1	6
36	Experimental and Computational Study of Thermal Processes in Red Clays Exposed to High Temperatures. Energies, 2020, 13, 2211.	3.1	6

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37	Influence of material characteristics of concrete and thermal insulation on the service life of exterior renders. WIT Transactions on Modelling and Simulation, 2009, , .	0.0	6
38	Formulation of a hygrothermal model for description of ice-forming process in porous building materials. AIP Conference Proceedings, 2018, , .	0.4	5
39	Computational compensation of systematic errors accompanying non-equilibrium thermocouple measurements. International Journal of Thermal Sciences, 2021, 168, 107049.	4.9	5
40	Effect of thermal insulation on hygric and thermal conditions in the envelopes of renovated historical buildings. , 2012, , .		5
41	Long-term monitoring of the Sedlec Ossuary â€" Analysis of hygrothermal conditions. AIP Conference Proceedings, 2016, , .	0.4	4
42	A Laboratory Experiment for Monitoring the Time Development of Water Freezing Processes in Porous Materials and Its Computational Analysis. International Journal of Thermophysics, 2016, 37, 1.	2.1	4
43	Identification of Water Diffusivity of Inorganic Porous Materials Using Evolutionary Algorithms. Transport in Porous Media, 2016, 113, 51-66.	2.6	4
44	Computational analysis of heat transport and storage processes in large-volume isothermal heat flow calorimeter. Applied Thermal Engineering, 2017, 121, 547-553.	6.0	4
45	Physical and mathematical models of hygrothermal processes in historical building envelopes. AIP Conference Proceedings, 2017, , .	0.4	4
46	Effect of Zeolite Admixture on Freeze/Thaw Resistance of Concrete Exposed to the Dynamic Climatic Conditions. Advanced Materials Research, 0, 982, 27-31.	0.3	3
47	Software for service life assessment of historical buildings: Implementation of coupled heat, moisture and salt transport model. AIP Conference Proceedings, 2015, , .	0.4	3
48	Seebeck effect influence on joule heat evolution in electrically conductive silicate materials. AIP Conference Proceedings, 2016, , .	0.4	3
49	Chapel of cemetery church of all saints in Sedlec â€" Long-term analysis of hygrothermal conditions. AIP Conference Proceedings, 2017, , .	0.4	3
50	Computational simulation of hygrothermal processes in historical building envelopes provided with interior thermal insulation. IOP Conference Series: Materials Science and Engineering, 2018, 364, 012009.	0.6	3
51	Experimental Determination of Heat and Moisture Transport Properties of AAC in the Range of Subzero to Room Temperatures. International Journal of Thermophysics, 2019, 40, 1.	2.1	3
52	New Type of Lime Plaster with Pozzolana Admixture for Renewal of Historical Buildings. Advanced Materials Research, 0, 324, 336-339.	0.3	2
53	Hygro-thermo-mechanical modeling of transport phenomena for simulation of building envelopes detachment. AIP Conference Proceedings, 2016, , .	0.4	2
54	Modeling of heat evolution in silicate building materials with electrically conductive admixtures. AIP Conference Proceedings, 2016, , .	0.4	2

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55	Data acquisition and acoustic modeling of heterogeneous building materials. AIP Conference Proceedings, 2019, , .	0.4	2
56	Analysis of plaster detachment and experimental determination of plaster–masonry interface shear capacity. AIP Conference Proceedings, 2019, , .	0.4	2
57	Computational Prediction of Susceptibility to Biofilms Growth: Two-Dimensional Analysis of Critical Construction Details. Energies, 2020, 13, 293.	3.1	2
58	Indoor air temperature modelling: Thermal retrofitting of historical building. AIP Conference Proceedings, 2021, , .	0.4	2
59	Computational simulation of the effect of crystallization inhibitors on salt transport and crystallization in porous materials. WIT Transactions on Modelling and Simulation, 2007, , .	0.0	2
60	Optimization methods for determination of moisture diffusivity of building materials in the drying phase. WIT Transactions on Ecology and the Environment, 2012, , .	0.0	2
61	Computational analysis of a modified guarded hot plate experiment. , 2012, , .		1
62	Identification of water vapour transport properties of gypsum using evolutionary algorithms. , 2012, , .		1
63	Moisture and salt transport coupled with damage mechanics. AIP Conference Proceedings, 2015, , .	0.4	1
64	Computational modeling of latent-heat-storage in PCM modified interior plaster. AIP Conference Proceedings, 2016, , .	0.4	1
65	Computational identification of freezing zones in building materials exposed to low temperatures. AIP Conference Proceedings, 2017, , .	0.4	1
66	Optimization procedure for design of geometrical configuration of acoustic bricks. AIP Conference Proceedings, 2018, , .	0.4	1
67	Computational modelling of thermal processes in a calorimetric experiment. AIP Conference Proceedings, 2018, , .	0.4	1
68	Water thermoporometry of aerated autoclaved concrete. AIP Conference Proceedings, 2018, , .	0.4	1
69	Efficient Techniques for Solution of Complex Computational Tasks in Building Physics. Advances in Civil Engineering, 2019, 2019, 1-11.	0.7	1
70	Influence of built-in thermocouples on temperature field in cement composites exposed to high temperatures. AIP Conference Proceedings, 2020, , .	0.4	1
71	Effect of moisture dependent thermal and hygric parameters on the moisture and temperature fields in multi-layered systems of building materials. WIT Transactions on Modelling and Simulation, 2013, , .	0.0	1
72	Application of a combined computational-experimental approach for the service life estimate of exterior plasters of historical buildings. , 2009, , .		1

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73	Influence of characteristic types of thermal insulation on energy savings of AAC-based building envelope: a comparison. , 2012, , .		1
74	A complex finite-element model for the investigation of historical masonry. WIT Transactions on the Built Environment, 2013, , .	0.0	1
75	Computational assessment of energy efficiency and hygrothermal performance of retrofitted historical building envelopes. , 2015, , .		1
76	Computational Analysis of the Energy Efficiency of Stone Walls: Current Situation and Possible Improvements. International Journal of Sustainable Development and Planning, 2017, 12, 264-272.	0.7	1
77	Numerical assessment of radionuclide leakage in a low or intermediate level waste geological repository. AIP Conference Proceedings, 2020, , .	0.4	1
78	Optimization of concrete mixture composition with superabsorbent polymer admixture. AIP Conference Proceedings, 2020, , .	0.4	1
79	Computational simulation of salt transport and crystallization in surface layers of building envelopes. , 2012, , .		0
80	Effect of hysteresis on moisture transport in porous building materials. , 2012, , .		0
81	Numerical analysis of coupled heat and moisture transport with discontinuities. , 2012, , .		0
82	A verification of the genetic programming method in the inverse analysis of moisture transport in building materials. , 2013, , .		0
83	A method for selection of a critical weather year for hygrothermal simulation based on incomplete weather data. , 2013, , .		0
84	Computational model of coupled heat, moisture and salt transport in multi-layered building structures: Implementation of the deterministic physical model and example of application. , 2013, , .		0
85	Deterministic physical and mathematical models of coupled heat, moisture and salt transport in multi-layered systems of building materials. , 2013, , .		0
86	Uncertainty Analysis of Computational-Experimental Approach for Determination of Equivalent Thermal Conductivity of Highly Perforated Bricks. Advanced Materials Research, 0, 1126, 105-110.	0.3	0
87	<i>In Situ</i> Examination and Laboratory Testing of the Enclosure Wall of the Star Game Preserve. Advanced Materials Research, 0, 1126, 137-142.	0.3	0
88	<i>In Situ</i> Analysis of Hygrothermal Performance of the Sedlec Ossuary. Advanced Materials Research, 2015, 1126, 22-27.	0.3	0
89	Online climatic database for in-depth numerical analysis of building performance: Design of the code and example of application. AIP Conference Proceedings, 2015, , .	0.4	0
90	Analysis of the building constructions from the point of view of possible freeze-thaw deterioration. AIP Conference Proceedings, 2016, , .	0.4	0

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91	Analysis of the impact of applied climatic data on the computational modelling of frost damage in building structures. AIP Conference Proceedings, 2016, , .	0.4	0
92	Computational modeling of the effect of external environment on the degradation of high-performance concrete. AIP Conference Proceedings, 2017, , .	0.4	0
93	Influence of the cavity geometry on the heat transfer conditions inside highly perforated bricks. AIP Conference Proceedings, 2017, , .	0.4	0
94	Utilization of computational modelling for determination of hydration kinetics of heterogeneous materials. AIP Conference Proceedings, 2017, , .	0.4	0
95	Hygrothermal analysis of surface layers of historical masonry. AIP Conference Proceedings, 2017, , .	0.4	0
96	Verification of Joule heat evolution model for silicate building materials with electrically conductive admixtures. AIP Conference Proceedings, 2017, , .	0.4	0
97	Thawing of ice in porous space of building materials: Experimental monitoring and computational modelling. AIP Conference Proceedings, 2017, , .	0.4	0
98	Assessment of local environmental loads in terms of energy demands of selected building enclosures in the Czech Republic. AIP Conference Proceedings, 2018, , .	0.4	0
99	Long-time assessment of hygrothermal conditions of the Sedlec charnel house. AIP Conference Proceedings, 2018, , .	0.4	0
100	Retrofitting of building envelopes: Evaluation of effectiveness using weather-affected material parameters. IOP Conference Series: Materials Science and Engineering, 2018, 415, 012009.	0.6	0
101	Computational modelling of degradation processes in exterior renders. AIP Conference Proceedings, 2018, , .	0.4	0
102	Uncertainty in moisture transport modelling and its effect on ice formation in porous building materials. AIP Conference Proceedings, 2018, , .	0.4	0
103	Computational analysis of thermal processes at early-age hydration of lime-based binders. AIP Conference Proceedings, 2018, , .	0.4	0
104	Experimental determination of mechanical parameters for damage modeling of gypsum-based composites. AIP Conference Proceedings, 2018, , .	0.4	0
105	Hygrothermal model for description of ice-forming process in porous building materials: Sensitivity analysis of input material parameters. AIP Conference Proceedings, 2018, , .	0.4	0
106	Computational simulation of transport phenomena in self-heating aluminosilicate composites. AIP Conference Proceedings, 2018, , .	0.4	0
107	Effect of moisture variations on damage cumulation in surface layers of building structures. AIP Conference Proceedings, 2018, , .	0.4	0
108	Mechanical parameters of cementitious materials with superabsorbent polymer admixture. MATEC Web of Conferences, 2019, 282, 02063.	0.2	0

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109	Experimental determination of length changes of autoclaved aerated concrete during the freeze-thaw cycle. MATEC Web of Conferences, 2019, 282, 02074.	0.2	0
110	Monetized environmental assessment of interior thermal insulation. MATEC Web of Conferences, 2019, 282, 02106.	0.2	0
111	Effect of the current warming trend on the computational damage assessment of building materials. AIP Conference Proceedings, 2019, , .	0.4	0
112	Material homogenization technique based on overall hygrothermal performance. AIP Conference Proceedings, 2019, , .	0.4	0
113	Self-heating experiment: Alkali-activated aluminosilicate with carbon-based admixture. AIP Conference Proceedings, 2019, , .	0.4	0
114	Comparison of hygric responses of three different plasters for interior applications. AIP Conference Proceedings, 2019, , .	0.4	0
115	Condensation of water vapor in baroque church. AIP Conference Proceedings, 2019, , .	0.4	0
116	Hygrothermal modelling of wall assemblies: Quantification of convenient conditions for biofilms growth. AIP Conference Proceedings, 2019, , .	0.4	0
117	Determination of effective specific heat capacity of interior plaster containing phase change materials. MATEC Web of Conferences, 2019, 282, 02052.	0.2	0
118	Numerical simulation of degradation of porous building materials caused by freeze-thaw cycles. MATEC Web of Conferences, 2019, 282, 02090.	0.2	0
119	Determination of pore size distribution of porcelain samples using water thermoporometry. AIP Conference Proceedings, 2019, , .	0.4	0
120	Computer-aided assessment of critical details of interior thermal insulation systems for historical masonry. AIP Conference Proceedings, 2019, , .	0.4	0
121	Thermal and energy performance of AAC exposed to low temperatures in the computational simulation with advanced input parameters. AIP Conference Proceedings, 2019, , .	0.4	0
122	Energy performance of the building envelopes provided with interior plasters with moisture buffering effect. AIP Conference Proceedings, 2019, , .	0.4	0
123	Verification of computational model for the assessment of interior thermal insulation systems using a laboratory critical experiment. AIP Conference Proceedings, 2019, , .	0.4	0
124	Thermal comfort in residential buildings after application of different thermal retrofitting measures. AIP Conference Proceedings, 2020, , .	0.4	0
125	Exterior thermal insulation systems and their influence on surface hygrothermal conditions. AIP Conference Proceedings, 2020, , .	0.4	0
126	Physical and mathematical models of heat and moisture transport in a tunnel dryer. AIP Conference Proceedings, 2021, , .	0.4	0

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127	Interior thermal insulation materials on natural basis: Evaluation of heat losses reduction. AIP Conference Proceedings, 2021, , .	0.4	0
128	Coupled heat and moisture transport in a building envelope on cast gypsum basis. WIT Transactions on Engineering Sciences, 2006, , .	0.0	0
129	Effect of Environmental Conditions on Service Life of Thermal Insulation Systems. , 2011, , .		0
130	Computational modelling and experimental verification of the effective thermal conductivity of hollow bricks. WIT Transactions on Engineering Sciences, 2012, , .	0.0	0
131	The Use of Diatomite in Cement Mortar. , 2013, , .		0
132	Predictive service life analysis of characteristic applications of zeolite concrete in building structures. , 2014, , .		0
133	Numerical simulation for the drying shrinkage of autoclaved aerated concrete. WIT Transactions on Engineering Sciences, 2014, , .	0.0	0
134	Application of latent-heat-storage building envelope systems for increasing energy efficiency in the building sector. , 2015, , .		0
135	COMPUTATIONAL APPROACH FOR ESTIMATING HYGRIC PROPERTIES OF HETEROGENEOUS MATERIALS IN LONG-TERM ASSESSMENT OF MOISTURE-INDUCED DAMAGE. Proceedings of International Structural Engineering and Construction, 2017, 4, .	0.1	0
136	WEATHER AFFECTED PARAMETERS OF CONCRETES: A LONG-TERM ASSESSMENT UNDER DIFFERENT CLIMATIC CONDITIONS. , 2018, , .		0
137	COMPUTATIONAL SIMULATION OF HYGROTHERMAL PERFORMANCE OF PLASTERS WITH ENHANCED MOISTURE ACCUMULATION CAPABILITY. Proceedings of International Structural Engineering and Construction, 2019, 6, .	0.1	0
138	HYGROTHERMAL PERFORMANCE OF WALL SEGMENT UNDER CONDITIONS ALLOWING ICE FORMING PROCESSES. , 2019, , .		0
139	Experimental and theoretical approach to determination of heat evolution in electrically conductive aluminosilicates. Thermal Science, 2020, 24, 787-794.	1.1	0
140	EFFECT OF LOAD BEARING MATERIALS ON SUSCEPTIBILITY TO BIOFILMS GROWTH. Proceedings of International Structural Engineering and Construction, 2020, 7, .	0.1	0
141	COMPUTATIONAL ANALYSIS OF HEAT AND MASS TRANSPORT IN CHARACTERISTIC DETAIL OF INTERIOR THERMAL INSULATION SYSTEM. Proceedings of International Structural Engineering and Construction, 2020, 7, .	0.1	0
142	EFFECT OF APPLIED INTERIOR THERMAL INSULATION SYSTEMS ON THE ENERGY PERFORMANCE OF A HISTORICAL/CONTEMPORARY MASONRY. Proceedings of International Structural Engineering and Construction, 2020, 7, .	0.1	0
143	Influence of biofilms on thermal performance of selected plasters. AIP Conference Proceedings, 2021, , .	0.4	0
144	Hygro-thermo-mechanical model for building materials exposed to different climate loads. AIP Conference Proceedings, 2020, , .	0.4	0

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145	Models of sound attenuation in homogeneous materials. AIP Conference Proceedings, 2022, , .	0.4	0