Jan Carmeliet

List of Publications by Year
in descending order

44 papers	1,999 citations	236925 25 h-index	243625 44 g-index
44 all docs	44 docs citations	44 times ranked	1694 citing authors

#	Article	IF	Citations
1	A review of wind-driven rain research in building science. Journal of Wind Engineering and Industrial Aerodynamics, 2004, 92, 1079-1130.	3.9	346
2	Influence of the urban microclimate in street canyons on the energy demand for space cooling and heating of buildings. Energy and Buildings, 2012, 55, 823-832.	6.7	137
3	Spatial and temporal distribution of driving rain on a low-rise building. Wind and Structures, an International Journal, 2002, 5, 441-462.	0.8	124
4	A comparative molecular dynamics study of crystalline, paracrystalline and amorphous states of cellulose. Cellulose, 2014, 21, 1103-1116.	4.9	122
5	Role of hydrogen bonding in hysteresis observed in sorption-induced swelling of soft nanoporous polymers. Nature Communications, 2018, 9, 3507.	12.8	101
6	High-resolution wind-driven rain measurements on a low-rise buildingâ€"experimental data for model development and model validation. Journal of Wind Engineering and Industrial Aerodynamics, 2005, 93, 905-928.	3.9	84
7	Parametric study of the influence of environmental factors and tree properties on the transpirative cooling effect of trees. Agricultural and Forest Meteorology, 2018, 248, 259-274.	4.8	79
8	Impact of Moisture Adsorption on Structure and Physical Properties of Amorphous Biopolymers. Macromolecules, 2015, 48, 2793-2800.	4.8	72
9	Hygroscopic swelling and shrinkage of latewood cell wall micropillars reveal ultrastructural anisotropy. Journal of the Royal Society Interface, 2014, 11, 20140126.	3.4	60
10	Hygrothermal modeling and evaluation of freeze-thaw damage risk of masonry walls retrofitted with internal insulation. Building and Environment, 2017, 125, 285-298.	6.9	57
11	Study of non-isothermal liquid evaporation in synthetic micro-pore structures with hybrid lattice Boltzmann model. Journal of Fluid Mechanics, 2019, 866, 33-60.	3.4	53
12	Robust moisture reference year methodology for hygrothermal simulations. Building and Environment, 2016, 110, 23-35.	6.9	50
13	Urban Heat Island and Its Interaction with Heatwaves: A Review of Studies on Mesoscale. Sustainability, 2021, 13, 10923.	3.2	49
14	Simulation of quasi-static drainage displacement in porous media on pore-scale: Coupling lattice Boltzmann method and pore network model. Journal of Hydrology, 2020, 588, 125080.	5.4	48
15	Impact of wind on the spatial distribution of rain over micro-scale topography: numerical modelling and experimental verification. Hydrological Processes, 2006, 20, 345-368.	2.6	47
16	Dynamic Wicking Process in Textiles. Transport in Porous Media, 2017, 119, 611-632.	2.6	42
17	Improved pore network models to simulate single-phase flow in porous media by coupling with lattice Boltzmann method. Advances in Water Resources, 2020, 145, 103738.	3.8	39
18	Moisture adsorption of glucomannan and xylan hemicelluloses. Cellulose, 2016, 23, 1629-1637.	4.9	38

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19	COSMO-BEP-Tree v1.0: a coupled urban climate model with explicit representation of street trees. Geoscientific Model Development, 2020, 13, 1685-1710.	3.6	37
20	Natural convection over vertical and horizontal heated flat surfaces: A review of recent progress focusing on underpinnings and implications for heat transfer and environmental applications. Physics of Fluids, 2021, 33, .	4.0	36
21	Poroelastic model for adsorption-induced deformation of biopolymers obtained from molecular simulations. Physical Review E, 2015, 92, 022605.	2.1	33
22	Advancement in Urban Climate Modelling at Local Scale: Urban Heat Island Mitigation and Building Cooling Demand. Atmosphere, 2020, 11, 1313.	2.3	33
23	Impact of green walls on ventilation and heat removal from street canyons: Coupling of thermal and aerodynamic resistance. Building and Environment, 2022, 214, 108945.	6.9	29
24	Impact of hydration on the micromechanical properties of the polymer composite structure of wood investigated with atomistic simulations. Journal of the Mechanics and Physics of Solids, 2017, 103, 221-235.	4.8	28
25	3D Virtual Pome Fruit Tissue Generation Based on Cell Growth Modeling. Food and Bioprocess Technology, 2014, 7, 542-555.	4.7	27
26	Assessment of risk of freeze-thaw damage in internally insulated masonry in a changing climate. Building and Environment, 2020, 175, 106773.	6.9	24
27	Novel Application of Neutron Radiography to Forced Convective Drying of Fruit Tissue. Food and Bioprocess Technology, 2013, 6, 3353-3367.	4.7	23
28	Smart wetting of permeable pavements as an evaporative-cooling measure for improving the urban climate during heat waves. Journal of Building Physics, 2021, 45, 36-66.	2.4	21
29	A Network Modeling Approach to Derive Unsaturated Hydraulic Properties of a Rough-Walled Fracture. Transport in Porous Media, 2003, 50, 197-221.	2.6	20
30	Impact of drying methods on the changes of fruit microstructure unveiled by X-ray micro-computed tomography. RSC Advances, 2019, 9, 10606-10624.	3.6	19
31	Hygromechanical mechanisms of wood cell wall revealed by molecular modeling and mixture rule analysis. Science Advances, 2021, 7, eabi8919.	10.3	18
32	Hygromechanics of softwood cellulosic nanocomposite with intermolecular interactions at fiber-matrix interface investigated with molecular dynamics. Composites Part B: Engineering, 2022, 228, 109449.	12.0	16
33	Moisture-induced crossover in the thermodynamic and mechanical response of hydrophilic biopolymer. Cellulose, 2020, 27, 89-99.	4.9	13
34	Modeling wicking in textiles using the dual porosity approach. Textile Reseach Journal, 2019, 89, 3519-3528.	2.2	9
35	Four-dimensional imaging and free-energy analysis of sudden pore-filling events in wicking of yarns. Physical Review E, 2021, 103, 053101.	2.1	9
36	Poromechanical modeling of moisture induced swelling anisotropy in cellular tissues of softwoods. RSC Advances, 2015, 5, 3560-3566.	3.6	8

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37	Two-stage wicking of yarns at the fiber scale investigated by synchrotron X-ray phase-contrast fast tomography. Textile Reseach Journal, 2019, 89, 4967-4979.	2.2	8
38	Combined Use of Wind-Driven Rain Load and Potential Evaporation to Evaluate Moisture Damage Risk: Case Study on the Parliament Buildings in Ottawa, Canada. Buildings, 2021, 11, 476.	3.1	7
39	Wicking dynamics in yarns. Journal of Colloid and Interface Science, 2022, 625, 1-11.	9.4	7
40	Role of cellulose nanocrystals on hysteretic sorption and deformation of nanocomposites. Cellulose, 2020, 27, 6945-6960.	4.9	6
41	Towards unraveling the moisture-induced shape memory effect of wood: the role of interface mechanics revealed by upscaling atomistic to composite modeling. NPG Asia Materials, 2021, 13, .	7.9	6
42	A Dynamic Pore Network Model for Imbibition Simulation Considering Corner Film Flow. Water Resources Research, 2022, 58, .	4.2	6
43	Scaling of buoyancy-driven flows on a horizontal plate subject to a ramp heating of a finite time. International Journal of Heat and Mass Transfer, 2021, 171, 121061.	4.8	5
44	Wicking through complex interfaces at interlacing yarns. Journal of Colloid and Interface Science, 2022, 626, 416-425.	9.4	3