# 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 | 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 |
| 2 | 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 |
| 3 | Wicking dynamics in yarns. Journal of Colloid and Interface Science, 2022, 625, 1-11. | 9.4 | 7 |
| 4 | A Dynamic Pore Network Model for Imbibition Simulation Considering Corner Film Flow. Water Resources Research, 2022, 58, . | 4.2 | 6 |
| 5 | Wicking through complex interfaces at interlacing yarns. Journal of Colloid and Interface Science, 2022, 626, 416-425. | 9.4 | 3 |
| 6 | 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 |
| 7 | 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 |
| 8 | 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 |
| 9 | Hygromechanical mechanisms of wood cell wall revealed by molecular modeling and mixture rule analysis. Science Advances, 2021, 7, eabi8919. | 10.3 | 18 |
| 10 | Urban Heat Island and Its Interaction with Heatwaves: A Review of Studies on Mesoscale. Sustainability, 2021, 13, 10923. | 3.2 | 49 |
| 11 | 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 |
| 12 | 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 |
| 13 | 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 |
| 14 | Moisture-induced crossover in the thermodynamic and mechanical response of hydrophilic biopolymer. Cellulose, 2020, 27, 89-99. | 4.9 | 13 |
| 15 | 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 |
| 16 | Advancement in Urban Climate Modelling at Local Scale: Urban Heat Island Mitigation and Building Cooling Demand. Atmosphere, 2020, 11, 1313. | 2.3 | 33 |
| 17 | Role of cellulose nanocrystals on hysteretic sorption and deformation of nanocomposites. Cellulose, 2020, 27, 6945-6960. | 4.9 | 6 |
| 18 | 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 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Assessment of risk of freeze-thaw damage in internally insulated masonry in a changing climate. Building and Environment, 2020, 175, 106773. | 6.9 | 24 |
| 20 | 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 |
| 21 | 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 |
| 22 | 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 |
| 23 | 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 |
| 24 | Modeling wicking in textiles using the dual porosity approach. Textile Reseach Journal, 2019, 89, 3519-3528. | 2.2 | 9 |
| 25 | 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 |
| 26 | Role of hydrogen bonding in hysteresis observed in sorption-induced swelling of soft nanoporous polymers. Nature Communications, 2018, 9, 3507. | 12.8 | 101 |
| 27 | 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 |
| 28 | 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 |
| 29 | Dynamic Wicking Process in Textiles. Transport in Porous Media, 2017, 119, 611-632. | 2.6 | 42 |
| 30 | Moisture adsorption of glucomannan and xylan hemicelluloses. Cellulose, 2016, 23, 1629-1637. | 4.9 | 38 |
| 31 | Robust moisture reference year methodology for hygrothermal simulations. Building and Environment, 2016, 110, 23-35. | 6.9 | 50 |
| 32 | Poroelastic model for adsorption-induced deformation of biopolymers obtained from molecular simulations. Physical Review E, 2015, 92, 022605. | 2.1 | 33 |
| 33 | Impact of Moisture Adsorption on Structure and Physical Properties of Amorphous Biopolymers. Macromolecules, 2015, 48, 2793-2800. | 4.8 | 72 |
| 34 | Poromechanical modeling of moisture induced swelling anisotropy in cellular tissues of softwoods. RSC Advances, 2015, 5, 3560-3566. | 3.6 | 8 |
| 35 | Hygroscopic swelling and shrinkage of latewood cell wall micropillars reveal ultrastructural anisotropy. Journal of the Royal Society Interface, 2014, 11, 20140126. | 3.4 | 60 |
| 36 | 3D Virtual Pome Fruit Tissue Generation Based on Cell Growth Modeling. Food and Bioprocess Technology, 2014, 7, 542-555. | 4.7 | 27 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | A comparative molecular dynamics study of crystalline, paracrystalline and amorphous states of cellulose. Cellulose, 2014, 21, 1103-1116. | 4.9 | 122 |
| 38 | Novel Application of Neutron Radiography to Forced Convective Drying of Fruit Tissue. Food and Bioprocess Technology, 2013, 6, 3353-3367. | 4.7 | 23 |
| 39 | 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 |
| 40 | 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 |
| 41 | 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 |
| 42 | A review of wind-driven rain research in building science. Journal of Wind Engineering and Industrial Aerodynamics, 2004, 92, 1079-1130. | 3.9 | 346 |
| 43 | 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 |
| 44 | 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 |