Matthew K Borg

List of Publications by Year
in descending order

65	1,607	218677	315739
papers	citations	26 h-index	38 g-index

65	65	65	1397
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Methane scattering on porous kerogen surfaces and its impact on mesopore transport in shale. Fuel, 2022, 316, 123259.	6.4	8
2	Acoustothermal Nucleation of Surface Nanobubbles. Nano Letters, 2021, 21, 1267-1273.	9.1	19
3	Shock-induced collapse of surface nanobubbles. Soft Matter, 2021, 17, 6884-6898.	2.7	12
4	A multiscale volume of fluid method with self-consistent boundary conditions derived from molecular dynamics. Physics of Fluids, 2021, 33, .	4.0	16
5	Self-diffusivity of dense confined fluids. Physics of Fluids, 2021, 33, .	4.0	13
6	Pore-scale gas flow simulations by the DSBGK and DVM methods. Computers and Fluids, 2021, 226, 105017.	2.5	12
7	Sub-nanometre pore adsorption of methane in kerogen. Chemical Engineering Journal, 2021, 426, 130984.	12.7	12
8	Untangling the physics of water transport in boron nitride nanotubes. Nanoscale, 2021, 13, 18096-18102.	5.6	8
9	Impact of surface nanostructure and wettability on interfacial ice physics. Journal of Chemical Physics, 2021, 155, 234307.	3.0	4
10	Enhanced nanoparticle rejection in aligned boron nitride nanotube membranes. Nanoscale, 2020, 12, 21138-21145.	5.6	15
11	Forced oscillation dynamics of surface nanobubbles. Journal of Chemical Physics, 2020, 153, 184705.	3.0	7
12	Molecular physics of jumping nanodroplets. Nanoscale, 2020, 12, 20631-20637.	5.6	14
13	Rarefied flow separation in microchannel with bends. Journal of Fluid Mechanics, 2020, 901, .	3.4	18
14	Dense gas flow simulations in ultra-tight confinement. Physics of Fluids, 2020, 32, .	4.0	31
15	Variation of molecular mean free path in confined geometries. AIP Conference Proceedings, 2019, , .	0.4	1
16	Effective mean free path and viscosity of confined gases. Physics of Fluids, 2019, 31, .	4.0	24
17	Droplet Coalescence is Initiated by Thermal Motion. Physical Review Letters, 2019, 122, 104501.	7.8	61
18	Surface-Controlled Water Flow in Nanotube Membranes. ACS Applied Materials & Interfaces, 2019, 11, 1689-1698.	8.0	18

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19	Mechanical Stability of Surface Nanobubbles. Langmuir, 2019, 35, 9325-9333.	3.5	27
20	Multiscale simulation of water flow through laboratory-scale nanotube membranes. Journal of Membrane Science, 2018, 567, 115-126.	8.2	49
21	Acoustothermal Atomization of Water Nanofilms. Physical Review Letters, 2018, 121, 104502.	7.8	14
22	Dynamics of Nanodroplets on Vibrating Surfaces. Langmuir, 2018, 34, 11898-11904.	3.5	18
23	A critical assessment of the line tension determined by the modified Youngâ€™s equation. Physics of Fluids, 2018, 30, .	4.0	44
24	Multiscale simulation of enhanced water flow in nanotubes. MRS Bulletin, 2017, 42, 294-299.	3.5	30
25	Multiscale simulation of dynamic wetting. International Journal of Heat and Mass Transfer, 2017, 115, 886-896.	4.8	43
26	Liquid slip over gas nanofilms. Physical Review Fluids, 2017, 2, .	2.5	12
27	Coupling heterogeneous continuum-particle fields to simulate non-isothermal microscale gas flows. International Journal of Heat and Mass Transfer, 2016, 98, 712-727.	4.8	5
28	Mechanical properties of pristine and nanoporous graphene. Molecular Simulation, 2016, 42, 1502-1511.	2.0	32
29	Electrowetting Controls the Deposit Patterns of Evaporated Salt Water Nanodroplets. Langmuir, 2016, 32, 1542-1549.	3.5	49
30	Electric fields can control the transport of water in carbon nanotubes. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150025.	3.4	50
31	Wetting and evaporation of salt-water nanodroplets: A molecular dynamics investigation. Physical Review E, 2015, 92, 052403.	2.1	81
32	Design of Multiscale Nanofluidic Networks. , 2015, , .		0
33	A Particle-Continuum Hybrid Framework for Transport Phenomena and Chemical Reactions in Multicomponent Systems at the Micro and Nanoscale. Journal of Heat Transfer, 2015, 137, .	2.1	4
34	Multiscale simulation of nanofluidic networks of arbitrary complexity. Microfluidics and Nanofluidics, 2015, 18, 841-858.	2.2	9
35	Benchmark numerical simulations of rarefied non-reacting gas flows using an open-source DSMC code. Computers and Fluids, 2015, 120, 140-157.	2.5	44
36	Hybrid molecular-continuum simulations of water flow through carbon nanotube membranes of realistic thickness. Microfluidics and Nanofluidics, 2015, 19, 997-1010.	2.2	28

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37	Asynchronous coupling of hybrid models for efficient simulation of multiscale systems. Journal of Computational Physics, 2015, 284, 261-272.	3.8	10
38	Open-Source Direct Simulation MonteÂCarlo Chemistry Modeling for Hypersonic Flows. AIAA Journal, 2015, 53, 1670-1680.	2.6	84
39	Enhancing nano-scale computational fluid dynamics with molecular pre-simulations: Unsteady problems and design optimisation. Computers and Fluids, 2015, 115, 46-53.	2.5	12
40	A hybrid molecularâ€“continuum method for unsteady compressible multiscale flows. Journal of Fluid Mechanics, 2015, 768, 388-414.	3.4	41
41	Molecular dynamics pre-simulations for nanoscale computational fluid dynamics. Microfluidics and Nanofluidics, 2015, 18, 461-474.	2.2	39
42	Multiscale Simulation of Nano-Fluidic Networks. , 2014, , .		0
43	Boundary conditions for molecular dynamics simulations of water transport through nanotubes. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2014, 228, 186-195.	2.1	13
44	Multiscale simulation of heat transfer in a rarefied gas. International Journal of Heat and Fluid Flow, 2014, 50, 114-125.	2.4	15
45	The atomistic-continuum hybrid taxonomy and the hybrid-hybrid approach. International Journal for Numerical Methods in Engineering, 2014, 98, 534-546.	2.8	6
46	The FADE mass-stat: A technique for inserting or deleting particles in molecular dynamics simulations. Journal of Chemical Physics, 2014, 140, 074110.	3.0	27
47	A DSMC investigation of gas flows in micro-channels with bends. Computers and Fluids, 2013, 71, 261-271.	2.5	68
48	A hybrid molecular-continuum simulation method for incompressible flows in micro/nanofluidic networks. Microfluidics and Nanofluidics, 2013, 15, 541-557.	2.2	27
49	A multiscale method for micro/nano flows of high aspect ratio. Journal of Computational Physics, 2013, 233, 400-413.	3.8	58
50	Hybrid continuumâ€“molecular modelling of multiscale internal gas flows. Journal of Computational Physics, 2013, 255, 558-571.	3.8	28
51	Fluid simulations with atomistic resolution: a hybrid multiscale method with field-wise coupling. Journal of Computational Physics, 2013, 255, 149-165.	3.8	27
52	Time-step coupling for hybrid simulations of multiscale flows. Journal of Computational Physics, 2013, 237, 344-365.	3.8	33
53	A Laplacian-based algorithm for non-isothermal atomistic-continuum hybrid simulation of micro and nano-flows. Computer Methods in Applied Mechanics and Engineering, 2013, 264, 81-94.	6.6	17
54	Dynamics of Nanoscale Droplets on Moving Surfaces. Langmuir, 2013, 29, 6936-6943.	3.5	46

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55	An Atomistic-Continuum Hybrid Approach for Modelling Transport Phenomena at the Micro- and Nano-Scale. , 2013, , .		1
56	Multiscale Simulation of Internal Rarefied Gas Flows. , 2013, , .		0
57	A Multi-Scale Method for Modeling Nanochannel Flows. , 2012, , .		0
58	Efficient Time-Step Coupling For Hybrid Continuum/Molecular Modelling of Unsteady Micro-Scale Gas Flows. Journal of Physics: Conference Series, 2012, 362, 012044.	0.4	0
59	Accounting for rotational non-equilibrium effects in subsonic DSMC boundary conditions. Journal of Physics: Conference Series, 2012, 362, 012016.	0.4	2
60	Water transport through carbon nanotubes with defects. Molecular Simulation, 2012, 38, 781-785.	2.0	53
61	Water transport through (7,7) carbon nanotubes of different lengths using molecular dynamics. Microfluidics and Nanofluidics, 2012, 12, 257-264.	2.2	101
62	Molecular Dynamics Simulations of Liquid Flow in and Around Carbon Nanotubes. , 2010, , .		2
63	Controllers for imposing continuum-to-molecular boundary conditions in arbitrary fluid flow geometries. Molecular Simulation, 2010, 36, 745-757.	2.0	44
64	A Hybrid Particle-Continuum Framework. , 2008, , .		2
65	Generation of initial molecular dynamics configurations in arbitrary geometries and in parallel. Molecular Simulation, 2007, 33, 1199-1212.	2.0	19