

Joel Koplik

List of Publications by Year in descending order

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121
papers

9,684
citations

57631

44
h-index

35952

97
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126
all docs

126
docs citations

126
times ranked

5319
citing authors

#	ARTICLE	IF	CITATIONS
1	Theory of dynamic permeability and tortuosity in fluid-saturated porous media. Journal of Fluid Mechanics, 1987, 176, 379.	1.4	1,778
2	Pattern selection in fingered growth phenomena. Advances in Physics, 1988, 37, 255-339.	35.9	932
3	Capillary displacement and percolation in porous media. Journal of Fluid Mechanics, 1982, 119, 249-267.	1.4	438
4	New Pore-Size Parameter Characterizing Transport in Porous Media. Physical Review Letters, 1986, 57, 2564-2567.	2.9	404
5	Molecular dynamics of fluid flow at solid surfaces. Physics of Fluids A, Fluid Dynamics, 1989, 1, 781-794.	1.6	388
6	Molecular dynamics of Poiseuille flow and moving contact lines. Physical Review Letters, 1988, 60, 1282-1285.	2.9	327
7	Conductivity and permeability of rocks. Physical Review B, 1984, 30, 6606-6614.	1.1	299
8	Boundary Conditions at a Fluid-Solid Interface. Physical Review Letters, 2001, 86, 803-806.	2.9	293
9	Vortex reconnection in superfluid helium. Physical Review Letters, 1993, 71, 1375-1378.	2.9	256
10	Geometrical models of interface evolution. Physical Review A, 1984, 29, 1335-1342.	1.0	238
11	Geometrical Approach to Moving-Interface Dynamics. Physical Review Letters, 1983, 51, 1111-1114.	2.9	191
12	Viscosity renormalization in the Brinkman equation. Physics of Fluids, 1983, 26, 2864.	1.4	165
13	Creeping flow in two-dimensional networks. Journal of Fluid Mechanics, 1982, 119, 219-247.	1.4	153
14	Geometrical models of interface evolution. II. Numerical simulation. Physical Review A, 1984, 30, 3161-3174.	1.0	129
15	Steady-state dendritic crystal growth. Physical Review A, 1986, 33, 3352-3357.	1.0	117
16	Geometrical models of interface evolution. III. Theory of dendritic growth. Physical Review A, 1985, 31, 1712-1717.	1.0	111
17	Nonlinear flow in porous media. Physical Review E, 1998, 58, 4776-4782.	0.8	111
18	Interface moving through a random background. Physical Review B, 1985, 32, 280-292.	1.1	110

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19	Deterministic and stochastic behaviour of non-Brownian spheres in sheared suspensions. Journal of Fluid Mechanics, 2002, 460, 307-335.	1.4	106
20	Self-diffusiophoretic colloidal propulsion near a solid boundary. Physics of Fluids, 2016, 28, .	1.6	103
21	Molecular dynamics of drop spreading on a solid surface. Physical Review Letters, 1991, 67, 3539-3542.	2.9	102
22	Terraced Spreading of Chain Molecules via Molecular Dynamics. Physical Review Letters, 1995, 74, 928-931.	2.9	101
23	Hydrodynamic Dispersion in Network Models of Porous Media. Physical Review Letters, 1986, 57, 996-999.	2.9	100
24	Suppression of coalescence by shear and temperature gradients. Physics of Fluids, 1996, 8, 15-28.	1.6	96
25	Thermal walls in computer simulations. Physical Review E, 1998, 57, R17-R20.	0.8	88
26	Flow channeling in a single fracture induced by shear displacement. Geothermics, 2006, 35, 576-588.	1.5	87
27	Freezing in confined geometries. Applied Physics Letters, 1992, 61, 777-779.	1.5	82
28	Dendritic growth in a channel. Physical Review A, 1986, 34, 4980-4987.	1.0	81
29	Numerical simulation of two-dimensional snowflake growth. Physical Review A, 1984, 30, 2820-2823.	1.0	78
30	Terraced spreading of simple liquids on solid surfaces. Physical Review A, 1992, 46, 7738-7749.	1.0	74
31	Dynamics of phase separation of binary fluids. Physical Review A, 1992, 45, R5347-R5350.	1.0	70
32	Molecular Simulations of Dewetting. Physical Review Letters, 2000, 84, 4401-4404.	2.9	69
33	Diffusiophoretic self-propulsion of colloids driven by a surface reaction: The sub-micron particle regime for exponential and van der Waals interactions. Physics of Fluids, 2013, 25, .	1.6	64
34	A molecular dynamics study of freezing in a confined geometry. Journal of Chemical Physics, 1992, 97, 485-493.	1.2	59
35	Colloidal Adsorption at Fluid Interfaces: Regime Crossover from Fast Relaxation to Physical Aging. Physical Review Letters, 2013, 111, 028302.	2.9	58
36	Terraced spreading mechanisms for chain molecules. Physical Review E, 1996, 53, 562-569.	0.8	55

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37	Slip, Immiscibility, and Boundary Conditions at the Liquid-Liquid Interface. <i>Physical Review Letters</i> , 2006, 96, 044505.	2.9	55
38	Immiscible fluid displacement in small networks. <i>Journal of Colloid and Interface Science</i> , 1985, 108, 304-330.	5.0	51
39	Molecular dynamics of interface rupture. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993, 5, 521-536.	1.6	51
40	Scattering of Superfluid Vortex Rings. <i>Physical Review Letters</i> , 1996, 76, 4745-4748.	2.9	48
41	Hydrodynamic interaction of two particles in confined linear shear flow at finite Reynolds number. <i>Physics of Fluids</i> , 2007, 19, .	1.6	48
42	Nanoscale Fluid Flows in the Vicinity of Patterned Surfaces. <i>Physical Review Letters</i> , 2006, 96, 114502.	2.9	47
43	Molecular dynamics of flows in the Knudsen regime. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2000, 287, 153-160.	1.2	46
44	Network model for deep bed filtration. <i>Physics of Fluids</i> , 2001, 13, 1076-1086.	1.6	44
45	No-Slip Condition for a Mixture of Two Liquids. <i>Physical Review Letters</i> , 1998, 80, 5125-5128.	2.9	42
46	Applications of statistical mechanics in subcontinuum fluid dynamics. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999, 274, 281-293.	1.2	42
47	Permeability of self-affine rough fractures. <i>Physical Review E</i> , 2000, 62, 8076-8085.	0.8	41
48	Molecular Dynamics Study of the Influence of Surfactant Structure on Surfactant-Facilitated Spreading of Droplets on Solid Surfaces. <i>Langmuir</i> , 2005, 21, 12160-12170.	1.6	41
49	Molecular Dynamics Simulations: Insight into Molecular Phenomena at Interfaces. <i>Langmuir</i> , 2014, 30, 11272-11283.	1.6	41
50	Stokes drag and lubrication flows: A molecular dynamics study. <i>Physical Review E</i> , 1996, 53, 4852-4864.	0.8	40
51	Multiscale liquid drop impact on wettable and textured surfaces. <i>Physics of Fluids</i> , 2014, 26, .	1.6	40
52	Microstructure and velocity fluctuations in sheared suspensions. <i>Journal of Fluid Mechanics</i> , 2004, 511, 237-263.	1.4	38
53	A molecular dynamics study of the motion of a nanodroplet of pure liquid on a wetting gradient. <i>Journal of Chemical Physics</i> , 2008, 129, 164708.	1.2	38
54	Dynamical Clustering of Counterions on Flexible Polyelectrolytes. <i>Physical Review Letters</i> , 2008, 100, 128301.	2.9	38

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55	Wetting of hydrophobic substrates by nanodroplets of aqueous trisiloxane and alkyl polyethoxylate surfactant solutions. <i>Chemical Engineering Science</i> , 2009, 64, 4657-4667.	1.9	38
56	Dynamics of growing interfaces. <i>Physical Review Letters</i> , 1992, 69, 3193-3195.	2.9	37
57	Interfacial Roughening Induced by Phase Separation. <i>Physical Review Letters</i> , 1996, 76, 1106-1109.	2.9	35
58	Adsorption Phenomena in the Transport of a Colloidal Particle through a Nanochannel Containing a Partially Wetting Fluid. <i>Physical Review Letters</i> , 2002, 89, 244501.	2.9	35
59	Nanoscale simulations of directional locking. <i>Physics of Fluids</i> , 2010, 22, .	1.6	35
60	Extracting the equation of state of lattice gases from random sequential adsorption simulations by means of the Gibbs adsorption isotherm. <i>Physical Review E</i> , 2017, 96, 052803.	0.8	35
61	Wetting Hysteresis at the Molecular Scale. <i>Physical Review Letters</i> , 1997, 78, 1520-1523.	2.9	34
62	Stokes Drag at the Molecular Level. <i>Physical Review Letters</i> , 1995, 75, 232-235.	2.9	31
63	Adhesion of solids. <i>Physical Review E</i> , 1997, 56, 2626-2634.	0.8	31
64	Molecular dynamics simulation of the equilibrium liquid-vapor interphase with solidification. <i>Fluid Phase Equilibria</i> , 2010, 297, 77-89.	1.4	28
65	The effect of capillary bridging on the Janus particle stability at the interface of two immiscible liquids. <i>Soft Matter</i> , 2013, 9, 4585.	1.2	28
66	Resistance of Random Walks. <i>Physical Review Letters</i> , 1983, 51, 1115-1118.	2.9	26
67	Atomistic hybrid DSMC/NEMD method for nonequilibrium multiscale simulations. <i>Journal of Computational Physics</i> , 2010, 229, 1381-1400.	1.9	26
68	Molecular dynamics of phase separation in narrow channels. <i>Physical Review E</i> , 1993, 47, R2265-R2268.	0.8	25
69	Absence of many-body effects in interactions between charged colloidal particles. <i>Physical Review E</i> , 1999, 59, R1335-R1338.	0.8	25
70	Numerical study of geometrical dispersion in self-affine rough fractures. <i>Physical Review E</i> , 1998, 58, 3334-3346.	0.8	24
71	Shear Flow Pumping in Open Micro- and Nanofluidic Systems. <i>Physical Review Letters</i> , 2007, 98, 224504.	2.9	24
72	Self-propelled colloidal particle near a planar wall: A Brownian dynamics study. <i>Physical Review Fluids</i> , 2018, 3, .	1.0	24

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73	Molecular dynamics (MD) simulation on the collision of a nano-sized particle onto another nano-sized particle adhered on a flat substrate. <i>Journal of Aerosol Science</i> , 2005, 36, 1427-1443.	1.8	22
74	Atomistic simulations of the wetting behavior of nanodroplets of water on homogeneous and phase separated self-assembled monolayers. <i>Soft Matter</i> , 2010, 6, 1297.	1.2	22
75	Diffusivity and hydrodynamic drag of nanoparticles at a vapor-liquid interface. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	21
76	Nanoparticles at liquid interfaces: Rotational dynamics and angular locking. <i>Journal of Chemical Physics</i> , 2014, 140, 014904.	1.2	20
77	Velocity slip on curved surfaces. <i>Physical Review E</i> , 2014, 89, 023005.	0.8	20
78	Dynamical relaxation of the surface tension of miscible phases. <i>Physical Review Letters</i> , 1993, 71, 3465-3468.	2.9	19
79	Liquid-hexatic-solid phase transition of a hard-core lattice gas with third neighbor exclusion. <i>Journal of Chemical Physics</i> , 2019, 151, 104702.	1.2	19
80	Physics of Fluids at Low Reynolds Numbers—A molecular Approach. <i>Computers in Physics</i> , 1998, 12, 424.	0.6	18
81	Molecular Dynamics Simulation of the Motion of Colloidal Nanoparticles in a Solute Concentration Gradient and a Comparison to the Continuum Limit. <i>Physical Review Letters</i> , 2013, 111, 184501.	2.9	18
82	Dynamics of nanoscale droplets. <i>Physical Review E</i> , 2002, 65, 021504.	0.8	16
83	Simple model for deep bed filtration. <i>Physical Review E</i> , 1996, 54, 4011-4020.	0.8	15
84	Depletion forces in hard-sphere colloids. <i>Physical Review E</i> , 1999, 59, R1339-R1342.	0.8	14
85	Micro- and nanoscale fluid flow on chemical channels. <i>Soft Matter</i> , 2012, 8, 9221.	1.2	14
86	Composition waves in confined geometries. <i>Physical Review E</i> , 1993, 48, R2362-R2365.	0.8	13
87	Molecular-dynamics studies of systems of confined dumbbell molecules. <i>Physical Review E</i> , 1995, 51, 441-453.	0.8	13
88	Microscopic motion of particles flowing through a porous medium. <i>Physics of Fluids</i> , 1999, 11, 76-87.	1.6	13
89	Molecular dynamics simulation of liquid bridge extensional flows. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2003, 109, 51-89.	1.0	13
90	Molecular dynamics study of the translation and rotation of amphiphilic Janus nanoparticles at a vapor-liquid surface. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	12

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91	Multiscale molecular simulations of argon vapor condensation onto a cooled substrate with bulk flow. <i>Physics of Fluids</i> , 2010, 22, .	1.6	11
92	The Translational and Rotational Dynamics of a Colloid Moving Along the Air-Liquid Interface of a Thin Film. <i>Scientific Reports</i> , 2018, 8, 8910.	1.6	10
93	Energy scales and diffraction scattering. <i>Physical Review D</i> , 1975, 12, 785-791.	1.6	9
94	Molecular Simulation of Reentrant Corner Flow. <i>Physical Review Letters</i> , 1997, 78, 2116-2119.	2.9	7
95	Extensional rupture of model non-Newtonian fluid filaments. <i>Physical Review E</i> , 2003, 67, 011502.	0.8	7
96	Surfactant and dilatational viscosity effects on the deformation of liquid droplets in an electric field. <i>Journal of Colloid and Interface Science</i> , 2022, 607, 900-911.	5.0	7
97	Path-integral variational methods for flow through porous media. <i>Physical Review E</i> , 1994, 49, 1353-1366.	0.8	6
98	Tracer dispersion in three-dimensional multipole flows. <i>Physical Review E</i> , 1997, 56, 4244-4258.	0.8	6
99	Suspension flow and sedimentation in self-affine fractures. <i>Physics of Fluids</i> , 2012, 24, 053303.	1.6	6
100	Glassy dynamics and equilibrium state on the honeycomb lattice: Role of surface diffusion and desorption on surface crowding. <i>Physical Review E</i> , 2021, 103, 022801.	0.8	6
101	Adsorption kinetics and thermodynamic properties of a binary mixture of hard-core particles on a square lattice. <i>Journal of Chemical Physics</i> , 2021, 154, 074705.	1.2	6
102	Pairwise hydrodynamic interactions of spherical colloids at a gas-liquid interface. <i>Journal of Fluid Mechanics</i> , 2021, 915, .	1.4	6
103	Steady-state dendritic growth at non-zero capillarity. <i>Scripta Metallurgica</i> , 1984, 18, 463-466.	1.2	5
104	Dynamics of rough surfaces with an arbitrary topology. <i>Physical Review E</i> , 1994, 49, R937-R940.	0.8	5
105	Film deposition and dynamics of a self-propelled wetting droplet on a conical fibre. <i>Journal of Fluid Mechanics</i> , 2021, 907, .	1.4	5
106	Continuum and Molecular Dynamics Studies of the Hydrodynamics of Colloids Straddling a Fluid Interface. <i>Annual Review of Fluid Mechanics</i> , 2022, 54, 495-523.	10.8	5
107	Multiperipheral model of direct muon production. <i>Physical Review D</i> , 1975, 11, 3134-3144.	1.6	4
108	The Tracer Transit-Time Tail in Multipole Reservoir Flows. <i>Transport in Porous Media</i> , 2001, 42, 199-209.	1.2	4

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109	Comment on Positive Regge-Cut Discontinuities. Physical Review D, 1973, 7, 558-560.	1.6	3
110	Simple models of interface growth. Physica D: Nonlinear Phenomena, 1984, 12, 241-244.	1.3	3
111	Koplik and Banavar Reply:. Physical Review Letters, 1999, 82, 1334-1334.	2.9	3
112	Multiperipheral Model of Meson and Baryon Multiplicities. Physical Review D, 1973, 7, 3317-3323.	1.6	2
113	First passage time in a two-layer system. Journal of Statistical Physics, 1995, 79, 895-922.	0.5	2
114	Variational bounds for first-passage-time problems in stratified porous media. Physical Review E, 1995, 52, 2718-2726.	0.8	2
115	Field-Induced Alignment of Flexible Polyelectrolytes in Solution. Physical Review Letters, 2010, 104, 218303.	2.9	2
116	Channeling and stress during fluid and suspension flow in self-affine fractures. Physical Review E, 2014, 89, 023010.	0.8	2
117	Frictional force on sliding drops. Physical Review Fluids, 2019, 4, .	1.0	2
118	MOLECULAR DYNAMICS SIMULATIONS OF NON-NEWTONIAN EXTENSIONAL FLUID FLOWS. International Journal of Modern Physics B, 2003, 17, 27-32.	1.0	1
119	Superdiffusion transport in stratified porous media. Physics of Fluids A, Fluid Dynamics, 1991, 3, 1469-1469.	1.6	0
120	Impurity solvation in a liquid. Journal of Chemical Physics, 1998, 108, 2104-2110.	1.2	0
121	MOLECULAR ASPECTS OF CONTACT-LINE DYNAMICS. , 2002, , 89-103.		0