Joel Koplik

List of Publications by Citations

120 papers	8,432 citations	42 h-index	91 g-index
126 ext. papers	9,006 ext. citations	4.6 avg, IF	5.74 L-index

#	Paper	IF	Citations
120	Theory of dynamic permeability and tortuosity in fluid-saturated porous media. *Journal of Fluid Mechanics*, **1987**, 176, 379	3.7	1443
119	Pattern selection in fingered growth phenomena. *Advances in Physics*, **1988**, 37, 255-339	18.4	831
118	Capillary displacement and percolation in porous media. *Journal of Fluid Mechanics*, **1982**, 119, 249-267	3.7	392
117	New pore-size parameter characterizing transport in porous media. *Physical Review Letters*, **1986**, 57, 2564-2567	7.4	358
116	Molecular dynamics of fluid flow at solid surfaces. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 781-794		343
115	Molecular dynamics of Poiseuille flow and moving contact lines. *Physical Review Letters*, **1988**, 60, 1282-1285	7.4	286
114	Boundary conditions at a fluid-solid interface. *Physical Review Letters*, **2001**, 86, 803-6	7.4	267
113	Conductivity and permeability of rocks. *Physical Review B*, **1984**, 30, 6606-6614	3.3	259
112	Geometrical models of interface evolution. *Physical Review A*, **1984**, 29, 1335-1342	2.6	223
111	Vortex reconnection in superfluid helium. *Physical Review Letters*, **1993**, 71, 1375-1378	7.4	220
110	Geometrical Approach to Moving-Interface Dynamics. *Physical Review Letters*, **1983**, 51, 1111-1114	7.4	178
109	Viscosity renormalization in the Brinkman equation. *Physics of Fluids*, **1983**, 26, 2864		127
108	Creeping flow in two-dimensional networks. *Journal of Fluid Mechanics*, **1982**, 119, 219-247	3.7	127
107	Geometrical models of interface evolution. II. Numerical simulation. *Physical Review A*, **1984**, 30, 3161-3174	2.6	122
106	Steady-state dendritic crystal growth. *Physical Review A*, **1986**, 33, 3352-3357	2.6	111
105	Geometrical models of interface evolution. III. Theory of dendritic growth. *Physical Review A*, **1985**, 31, 1712-1717	2.6	105
104	Interface moving through a random background. *Physical Review B*, **1985**, 32, 280-292	3.3	104

103	Hydrodynamic dispersion in network models of porous media. *Physical Review Letters*, **1986**, 57, 996-999	7.4	93
102	Deterministic and stochastic behaviour of non-Brownian spheres in sheared suspensions. *Journal of Fluid Mechanics*, **2002**, 460, 307-335	3.7	92
101	Terraced spreading of chain molecules via molecular dynamics. *Physical Review Letters*, **1995**, 74, 928-931	7.4	91
100	Molecular dynamics of drop spreading on a solid surface. *Physical Review Letters*, **1991**, 67, 3539-3542	7.4	89
99	Self-diffusiophoretic colloidal propulsion near a solid boundary. *Physics of Fluids*, **2016**, 28, 053107	4.4	83
98	Suppression of coalescence by shear and temperature gradients. *Physics of Fluids*, **1996**, 8, 15-28	4.4	82
97	Thermal walls in computer simulations. *Physical Review E*, **1998**, 57, R17-R20	2.4	81
96	Freezing in confined geometries. *Applied Physics Letters*, **1992**, 61, 777-779	3.4	77
95	Dendritic growth in a channel. *Physical Review A*, **1986**, 34, 4980-4987	2.6	77
94	Numerical simulation of two-dimensional snowflake growth. *Physical Review A*, **1984**, 30, 2820-2823	2.6	77
93	Flow channeling in a single fracture induced by shear displacement. *Geothermics*, **2006**, 35, 576-588	4.3	75
92	Terraced spreading of simple liquids on solid surfaces. *Physical Review A*, **1992**, 46, 7738-7749	2.6	66
91	Dynamics of phase separation of binary fluids. *Physical Review A*, **1992**, 45, R5347-R5350	2.6	62
90	Molecular simulations of dewetting. *Physical Review Letters*, **2000**, 84, 4401-4	7.4	61
89	Nonlinear flow in porous media. *Physical Review E*, **1998**, 58, 4776-4782	2.4	55
88	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, 012001	4.4	54
87	A molecular dynamics study of freezing in a confined geometry. *Journal of Chemical Physics*, **1992**, 97, 485-493	3.9	54
86	Colloidal adsorption at fluid interfaces: regime crossover from fast relaxation to physical aging. *Physical Review Letters*, **2013**, 111, 028302	7.4	53

85	Terraced spreading mechanisms for chain molecules. *Physical Review E*, **1996**, 53, 562-569	2.4	51
84	Molecular dynamics of interface rupture. *Physics of Fluids A, Fluid Dynamics*, **1993**, 5, 521-536		49
83	Scattering of superfluid vortex rings. *Physical Review Letters*, **1996**, 76, 4745-4748	7.4	45
82	Hydrodynamic interaction of two particles in confined linear shear flow at finite Reynolds number. *Physics of Fluids*, **2007**, 19, 113305	4.4	43
81	Molecular dynamics of flows in the Knudsen regime. *Physica A: Statistical Mechanics and Its Applications*, **2000**, 287, 153-160	3.3	43
80	Slip, immiscibility, and boundary conditions at the liquid-liquid interface. *Physical Review Letters*, **2006**, 96, 044505	7.4	42
79	Immiscible fluid displacement in small networks. *Journal of Colloid and Interface Science*, **1985**, 108, 304-330	3.3	42
78	Nanoscale fluid flows in the vicinity of patterned surfaces. *Physical Review Letters*, **2006**, 96, 114502	7.4	41
77	Molecular dynamics study of the influence of surfactant structure on surfactant-facilitated spreading of droplets on solid surfaces. *Langmuir*, **2005**, 21, 12160-70	4	40
76	Network model for deep bed filtration. *Physics of Fluids*, **2001**, 13, 1076-1086	4.4	39
75	Applications of statistical mechanics in subcontinuum fluid dynamics. *Physica A: Statistical Mechanics and Its Applications*, **1999**, 274, 281-293	3.3	39
74	Wetting of hydrophobic substrates by nanodroplets of aqueous trisiloxane and alkyl polyethoxylate surfactant solutions. *Chemical Engineering Science*, **2009**, 64, 4657-4667	4.4	37
73	Permeability of self-affine rough fractures. *Physical Review E*, **2000**, 62, 8076-85	2.4	37
72	No-Slip Condition for a Mixture of Two Liquids. *Physical Review Letters*, **1998**, 80, 5125-5128	7.4	37
71	Dynamical clustering of counterions on flexible polyelectrolytes. *Physical Review Letters*, **2008**, 100, 128301	7.4	36
70	Stokes drag and lubrication flows: A molecular dynamics study. *Physical Review E*, **1996**, 53, 4852-4864	2.4	36
69	Dynamics of growing interfaces. *Physical Review Letters*, **1992**, 69, 3193-3195	7.4	36
68	A molecular dynamics study of the motion of a nanodroplet of pure liquid on a wetting gradient. *Journal of Chemical Physics*, **2008**, 129, 164708	3.9	35

67	Molecular dynamics simulations: insight into molecular phenomena at interfaces. *Langmuir*, **2014**, 30, 11272-83	4	34
66	Microstructure and velocity fluctuations in sheared suspensions. *Journal of Fluid Mechanics*, **2004**, 511, 237-263	3.7	34
65	Adsorption phenomena in the transport of a colloidal particle through a nanochannel containing a partially wetting fluid. *Physical Review Letters*, **2002**, 89, 244501	7.4	34
64	Extracting the equation of state of lattice gases from random sequential adsorption simulations by means of the Gibbs adsorption isotherm. *Physical Review E*, **2017**, 96, 052803	2.4	33
63	Interfacial roughening induced by phase separation. *Physical Review Letters*, **1996**, 76, 1106-1109	7.4	33
62	Nanoscale simulations of directional locking. *Physics of Fluids*, **2010**, 22, 052005	4.4	31
61	Wetting Hysteresis at the Molecular Scale. *Physical Review Letters*, **1997**, 78, 1520-1523	7.4	29
60	Adhesion of solids. *Physical Review E*, **1997**, 56, 2626-2634	2.4	29
59	Multiscale liquid drop impact on wettable and textured surfaces. *Physics of Fluids*, **2014**, 26, 082003	4.4	28
58	Resistance of Random Walks. *Physical Review Letters*, **1983**, 51, 1115-1118	7.4	26
57	The effect of capillary bridging on the Janus particle stability at the interface of two immiscible liquids. *Soft Matter*, **2013**, 9, 4585	3.6	24
56	Atomistic hybrid DSMC/NEMD method for nonequilibrium multiscale simulations. *Journal of Computational Physics*, **2010**, 229, 1381-1400	4.1	24
55	Absence of many-body effects in interactions between charged colloidal particles. *Physical Review E*, **1999**, 59, R1335-R1338	2.4	24
54	Molecular dynamics simulation of the equilibrium liquid□apor interphase with solidification. *Fluid Phase Equilibria*, **2010**, 297, 77-89	2.5	23
53	Stokes drag at the molecular level. *Physical Review Letters*, **1995**, 75, 232-235	7.4	23
52	Molecular dynamics of phase separation in narrow channels. *Physical Review E*, **1993**, 47, R2265-R2268	2.4	23
51	Shear flow pumping in open micro- and nanofluidic systems. *Physical Review Letters*, **2007**, 98, 224504	7.4	21
50	Nanoparticles at liquid interfaces: rotational dynamics and angular locking. *Journal of Chemical Physics*, **2014**, 140, 014904	3.9	20

49	Molecular dynamics (MD) simulation on the collision of a nano-sized particle onto another nano-sized particle adhered on a flat substrate. *Journal of Aerosol Science*, **2005**, 36, 1427-1443	4.3	20
48	Numerical study of geometrical dispersion in self-affine rough fractures. *Physical Review E*, **1998**, 58, 3334-3346	2.4	20
47	Self-propelled colloidal particle near a planar wall: A Brownian dynamics study. *Physical Review Fluids*, **2018**, 3,	2.8	20
46	Atomistic simulations of the wetting behavior of nanodroplets of water on homogeneous and phase separated self-assembled monolayers. *Soft Matter*, **2010**, 6, 1297	3.6	19
45	Diffusivity and hydrodynamic drag of nanoparticles at a vapor-liquid interface. *Physical Review Fluids*, **2017**, 2,	2.8	19
44	Velocity slip on curved surfaces. *Physical Review E*, **2014**, 89, 023005	2.4	18
43	Liquid-hexatic-solid phase transition of a hard-core lattice gas with third neighbor exclusion. *Journal of Chemical Physics*, **2019**, 151, 104702	3.9	17
42	Molecular dynamics simulation of the motion of colloidal nanoparticles in a solute concentration gradient and a comparison to the continuum limit. *Physical Review Letters*, **2013**, 111, 184501	7.4	17
41	Dynamical relaxation of the surface tension of miscible phases. *Physical Review Letters*, **1993**, 71, 3465-3468	7.4	17
40	Physics of Fluids at Low Reynolds Numbers: A molecular Approach. *Computers in Physics*, **1998**, 12, 424		16
39	Dynamics of nanoscale droplets. *Physical Review E*, **2002**, 65, 021504	2.4	15
38	Depletion forces in hard-sphere colloids. *Physical Review E*, **1999**, 59, R1339-R1342	2.4	14
37	Simple model for deep bed filtration. *Physical Review E*, **1996**, 54, 4011-4020	2.4	14
36	Molecular dynamics simulation of liquid bridge extensional flows. *Journal of Non-Newtonian Fluid Mechanics*, **2003**, 109, 51-89	2.7	13
35	Molecular-dynamics studies of systems of confined dumbbell molecules. *Physical Review E*, **1995**, 51, 441-453	2.4	13
34	Composition waves in confined geometries. *Physical Review E*, **1993**, 48, R2362-R2365	2.4	12
33	Micro- and nanoscale fluid flow on chemical channels. *Soft Matter*, **2012**, 8, 9221	3.6	11
32	Microscopic motion of particles flowing through a porous medium. *Physics of Fluids*, **1999**, 11, 76-87	4.4	11

31	Molecular dynamics study of the translation and rotation of amphiphilic Janus nanoparticles at a vapor-liquid surface. *Physical Review Fluids*, **2019**, 4,	2.8	10
30	Multiscale molecular simulations of argon vapor condensation onto a cooled substrate with bulk flow. *Physics of Fluids*, **2010**, 22, 112002	4.4	9
29	Energy scales and diffraction scattering. *Physical Review D*, **1975**, 12, 785-791	4.9	8
28	Extensional rupture of model non-Newtonian fluid filaments. *Physical Review E*, **2003**, 67, 011502	2.4	7
27	The Translational and Rotational Dynamics of a Colloid Moving Along the Air-Liquid Interface of a Thin Film. *Scientific Reports*, **2018**, 8, 8910	4.9	6
26	Suspension flow and sedimentation in self-affine fractures. *Physics of Fluids*, **2012**, 24, 053303	4.4	5
25	Tracer dispersion in three-dimensional multipole flows. *Physical Review E*, **1997**, 56, 4244-4258	2.4	5
24	Path-integral variational methods for flow through porous media. *Physical Review E*, **1994**, 49, 1353-1366	2.4	5
23	Dynamics of rough surfaces with an arbitrary topology. *Physical Review E*, **1994**, 49, R937-R940	2.4	5
22	Steady-state dendritic growth at non-zero capillarity. *Scripta Metallurgica*, **1984**, 18, 463-466		5
21	Molecular Simulation of Reentrant Corner Flow. *Physical Review Letters*, **1997**, 78, 2116-2119	7.4	4
20	The Tracer Transit-Time Tail in Multipole Reservoir Flows. *Transport in Porous Media*, **2001**, 42, 199-209	3.1	4
19	Multiperipheral model of direct muon production. *Physical Review D*, **1975**, 11, 3134-3144	4.9	4
18	Glassy dynamics and equilibrium state on the honeycomb lattice: Role of surface diffusion and desorption on surface crowding. *Physical Review E*, **2021**, 103, 022801	2.4	4
17	Koplik and Banavar Reply:. *Physical Review Letters*, **1999**, 82, 1334-1334	7.4	3
16	Comment on Positive Regge-Cut Discontinuities. *Physical Review D*, **1973**, 7, 558-560	4.9	3
15	Channeling and stress during fluid and suspension flow in self-affine fractures. *Physical Review E*, **2014**, 89, 023010	2.4	2
14	Field-induced alignment of flexible polyelectrolytes in solution. *Physical Review Letters*, **2010**, 104, 218303	7.4	2

13	Variational bounds for first-passage-time problems in stratified porous media. *Physical Review E*, **1995**, 52, 2718-2726	2.4	2
12	First passage time in a two-layer system. *Journal of Statistical Physics*, **1995**, 79, 895-922	1.5	2
11	Simple models of interface growth. *Physica D: Nonlinear Phenomena*, **1984**, 12, 241-244	3.3	2
10	Multiperipheral Model of Meson and Baryon Multiplicities. *Physical Review D*, **1973**, 7, 3317-3323	4.9	2
9	Pairwise hydrodynamic interactions of spherical colloids at a gas-liquid interface. *Journal of Fluid Mechanics*, **2021**, 915,	3.7	2
8	Film deposition and dynamics of a self-propelled wetting droplet on a conical fibre. *Journal of Fluid Mechanics*, **2021**, 907,	3.7	2
7	Adsorption kinetics and thermodynamic properties of a binary mixture of hard-core particles on a square lattice. *Journal of Chemical Physics*, **2021**, 154, 074705	3.9	2
6	MOLECULAR DYNAMICS SIMULATIONS OF NON-NEWTONIAN EXTENSIONAL FLUID FLOWS. *International Journal of Modern Physics B*, **2003**, 17, 27-32	1.1	1
5	Frictional force on sliding drops. *Physical Review Fluids*, **2019**, 4,	2.8	1
4	Surfactant and dilatational viscosity effects on the deformation of liquid droplets in an electric field. *Journal of Colloid and Interface Science*, **2022**, 607, 900-911	9.3	0
3	Impurity solvation in a liquid. *Journal of Chemical Physics*, **1998**, 108, 2104-2110	3.9	
2	Superdiffusion transport in stratified porous media. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 1469-1469		
1	MOLECULAR ASPECTS OF CONTACT-LINE DYNAMICS **2002**, 89-103		