Steven J Plimpton

List of Publications by Year in Descending Order

55 papers	33,484 citations	29 h-index	56 g-index
56 ext. papers	39,459 ext. citations	4.7 avg, IF	8.01 L-index

#	Paper	IF	Citations
55	Rendezvous algorithms for large-scale modeling and simulation. *Journal of Parallel and Distributed Computing*, **2021**, 147, 184-195	4.4	1
54	LAMMPS - a flexible simulation tool for particle-based materials modeling at the atomic, meso, and continuum scales. *Computer Physics Communications*, **2021**, 271, 108171	4.2	315
53	Granular packings with sliding, rolling, and twisting friction. *Physical Review E*, **2020**, 102, 032903	2.4	10
52	Parallel algorithms for hyperdynamics and local hyperdynamics. *Journal of Chemical Physics*, **2020**, 153, 054116	3.9	2
51	Aspherical particle models for molecular dynamics simulation. *Computer Physics Communications*, **2019**, 243, 12-24	4.2	10
50	Highly scalable discrete-particle simulations with novel coarse-graining: accessing the microscale. *Molecular Physics*, **2018**, 116, 2061-2069	1.7	11
49	Effect of shape and friction on the packing and flow of granular materials. *Physical Review E*, **2018**, 98,	2.4	20
48	Massively parallel symplectic algorithm for coupled magnetic spin dynamics and molecular dynamics. *Journal of Computational Physics*, **2018**, 372, 406-425	4.1	43
47	A historical survey of algorithms and hardware architectures for neural-inspired and neuromorphic computing applications. *Biologically Inspired Cognitive Architectures*, **2017**, 19, 49-64		29
46	Li-Ion Synaptic Transistor for Low Power Analog Computing. *Advanced Materials*, **2017**, 29, 1604310	24	276
45	Oxygen Modulates the Effectiveness of Granuloma Mediated Host Response to Mycobacterium tuberculosis: A Multiscale Computational Biology Approach. *Frontiers in Cellular and Infection Microbiology*, **2016**, 6, 6	5.9	27
44	Increasing Molecular Dynamics Simulation Rates with an 8-Fold Increase in Electrical Power Efficiency **2016**,		3
43	Accelerating dissipative particle dynamics simulations for soft matter systems. *Computational Materials Science*, **2015**, 100, 173-180	3.2	22
42	Optimizing legacy molecular dynamics software with directive-based offload. *Computer Physics Communications*, **2015**, 195, 95-101	4.2	23
41	Particle dynamics modeling methods for colloid suspensions. *Computational Particle Mechanics*, **2014**, 1, 321-356	3	110
40	Streaming data analytics via message passing with application to graph algorithms. *Journal of Parallel and Distributed Computing*, **2014**, 74, 2687-2698	4.4	8
39	Developing community codes for materials modeling. *Current Opinion in Solid State and Materials Science*, **2013**, 17, 271-276	12	7

38	Implementing molecular dynamics on hybrid high performance computers – Particle–particle particle-mesh. *Computer Physics Communications*, **2012**, 183, 449-459	4.2	267
37	Computational aspects of many-body potentials. *MRS Bulletin*, **2012**, 37, 513-521	3.2	201
36	No-slip boundary conditions and forced flow in multiparticle collision dynamics. *Physical Review E*, **2012**, 86, 066703	2.4	27
35	MapReduce in MPI for Large-scale graph algorithms. *Parallel Computing*, **2011**, 37, 610-632	1	130
34	Evaporation of Lennard-Jones fluids. *Journal of Chemical Physics*, **2011**, 134, 224704	3.9	76
33	Implementing molecular dynamics on hybrid high performance computers – short range forces. *Computer Physics Communications*, **2011**, 182, 898-911	4.2	400
32	Mesoscale hydrodynamics via stochastic rotation dynamics: comparison with Lennard-Jones fluid. *Journal of Chemical Physics*, **2010**, 132, 174106	3.9	34
31	Software components for parallel multiscale simulation: an example with LAMMPS. *Engineering With Computers*, **2010**, 26, 205-211	4.5	42
30	General formulation of pressure and stress tensor for arbitrary many-body interaction potentials under periodic boundary conditions. *Journal of Chemical Physics*, **2009**, 131, 154107	3.9	517
29	Liquid crystal nanodroplets in solution. *Journal of Chemical Physics*, **2009**, 130, 044901	3.9	52
28	Implementing peridynamics within a molecular dynamics code. *Computer Physics Communications*, **2008**, 179, 777-783	4.2	193
27	Accurate and efficient methods for modeling colloidal mixtures in an explicit solvent using molecular dynamics. *Computer Physics Communications*, **2008**, 179, 320-329	4.2	53
26	Substructured molecular dynamics using multibody dynamics algorithms. *International Journal of Non-Linear Mechanics*, **2008**, 43, 1040-1055	2.8	27
25	Computing the mobility of grain boundaries. *Nature Materials*, **2006**, 5, 124-7	27	197
24	Parallel Sn Sweeps on Unstructured Grids: Algorithms for Prioritization, Grid Partitioning, and Cycle Detection. *Nuclear Science and Engineering*, **2005**, 150, 267-283	1.2	25
23	Finding strongly connected components in distributed graphs. *Journal of Parallel and Distributed Computing*, **2005**, 65, 901-910	4.4	50
22	Feature length-scale modeling of LPCVD and PECVD MEMS fabrication processes. *Microsystem Technologies*, **2005**, 12, 137-142	1.7	6
21	Discrete element simulations of stress distributions in silos: crossover from two to three dimensions. *Powder Technology*, **2004**, 139, 233-239	5.2	49

20	Effect of end-tethered polymers on surface adhesion of glassy polymers. *Journal of Polymer Science, Part B: Polymer Physics*, **2004**, 42, 199-208	2.6	69
19	A parallel rendezvous algorithm for interpolation between multiple grids. *Journal of Parallel and Distributed Computing*, **2004**, 64, 266-276	4.4	29
18	Parallel Genehunter: implementation of a linkage analysis package for distributed-memory architectures. *Journal of Parallel and Distributed Computing*, **2003**, 63, 674-682	4.4	10
17	A load-balancing algorithm for a parallel electromagnetic particle-in-cell code. *Computer Physics Communications*, **2003**, 152, 227-241	4.2	24
16	Equilibration of long chain polymer melts in computer simulations. *Journal of Chemical Physics*, **2003**, 119, 12718-12728	3.9	399
15	Carbon sequestration in Synechococcus Sp.: from molecular machines to hierarchical modeling. *OMICS A Journal of Integrative Biology*, **2002**, 6, 305-30	3.8	8
14	Scalability and Performance of Two Large Linux Clusters. *Journal of Parallel and Distributed Computing*, **2001**, 61, 1546-1569	4.4	6
13	Parallel strategies for crash and impact simulations. *Computer Methods in Applied Mechanics and Engineering*, **2000**, 184, 375-390	5.7	58
12	Spatial correlations of mobility and immobility in a glass-forming Lennard-Jones liquid. *Physical Review E*, **1999**, 60, 3107-19	2.4	425
11	The diffusion of simple penetrants in tangent site polymer melts. *Journal of Chemical Physics*, **1999**, 111, 9822-9831	3.9	5
10	Parallel Transient Dynamics Simulations: Algorithms for Contact Detection and Smoothed Particle Hydrodynamics. *Journal of Parallel and Distributed Computing*, **1998**, 50, 104-122	4.4	37
9	Molecular dynamics simulations of low-energy (25200 eV) argon ion interactions with silicon surfaces: Sputter yields and product formation pathways. *Journal of Applied Physics*, **1998**, 83, 4055-4063	2.5	67
8	Stringlike Cooperative Motion in a Supercooled Liquid. *Physical Review Letters*, **1998**, 80, 2338-2341	7.4	784
7	The effect of attractions on the structure and thermodynamics of model polymer blends. *Journal of Chemical Physics*, **1997**, 107, 4024-4032	3.9	7
6	Dynamical Heterogeneities in a Supercooled Lennard-Jones Liquid. *Physical Review Letters*, **1997**, 79, 2827-2830	7.4	784
5	A new parallel method for molecular dynamics simulation of macromolecular systems. *Journal of Computational Chemistry*, **1996**, 17, 326-337	3.5	94
4	Computational limits of classical molecular dynamics simulations. *Computational Materials Science*, **1995**, 4, 361-364	3.2	73
3	Molecular dynamics simulations of athermal polymer blends: Comparison with integral equation theory. *Journal of Chemical Physics*, **1995**, 103, 1208-1215	3.9	19

2	Fast Parallel Algorithms for Short-Range Molecular Dynamics. *Journal of Computational Physics*, **1995**, 117, 1-19	4.1	27311
1	Load-balancing techniques for a parallel electromagnetic particle-in-cell code		2