

David S Simmons

List of Publications by Citations

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45
papers

1,146
citations

21
h-index

33
g-index

46
ext. papers

1,349
ext. citations

5.6
avg, IF

5.28
L-index

#	Paper	IF	Citations
45	Interfacial Dynamic Length Scales in the Glass Transition of a Model Freestanding Polymer Film and Their Connection to Cooperative Motion. <i>Macromolecules</i> , 2013 , 46, 9818-9825	5.5	94
44	Combined Dependence of Nanoconfined on Interfacial Energy and Softness of Confinement.. <i>ACS Macro Letters</i> , 2014 , 3, 758-762	6.6	89
43	Generalized localization model of relaxation in glass-forming liquids. <i>Soft Matter</i> , 2012 , 8, 11455-11461	3.6	82
42	An Emerging Unified View of Dynamic Interphases in Polymers. <i>Macromolecular Chemistry and Physics</i> , 2016 , 217, 137-148	2.6	73
41	Neural-Network-Biased Genetic Algorithms for Materials Design: Evolutionary Algorithms That Learn. <i>ACS Combinatorial Science</i> , 2017 , 19, 96-107	3.9	63
40	Nanoconfinement effects on the fragility of glass formation of a model freestanding polymer film. <i>Soft Matter</i> , 2014 , 10, 3166-70	3.6	50
39	Progress towards a phenomenological picture and theoretical understanding of glassy dynamics and vitrification near interfaces and under nanoconfinement. <i>Journal of Chemical Physics</i> , 2019 , 151, 240901	3.9	50
38	Understanding the Decreased Segmental Dynamics of Supported Thin Polymer Films Reported by Incoherent Neutron Scattering. <i>Macromolecules</i> , 2015 , 48, 801-808	5.5	47
37	Nature and interrelations of fast dynamic properties in a coarse-grained glass-forming polymer melt. <i>Soft Matter</i> , 2011 , 7, 11010	3.6	44
36	The Glass Transition of a Single Macromolecule. <i>Macromolecules</i> , 2016 , 49, 7597-7604	5.5	39
35	Design Rules for Highly Conductive Polymeric Ionic Liquids from Molecular Dynamics Simulations. <i>Macromolecules</i> , 2018 , 51, 6630-6644	5.5	39
34	Designing Sequence-Specific Copolymer Compatibilizers Using a Molecular-Dynamics-Simulation-Based Genetic Algorithm. <i>Macromolecules</i> , 2017 , 50, 1155-1166	5.5	37
33	Glass Formation near Covalently Grafted Interfaces: Ionomers as a Model Case. <i>Macromolecules</i> , 2015 , 48, 2313-2323	5.5	36
32	The relationship between dynamic and pseudo-thermodynamic measures of the glass transition temperature in nanostructured materials. <i>Journal of Chemical Physics</i> , 2017 , 146, 203316	3.9	32
31	Tuning Polymer Glass Formation Behavior and Mechanical Properties with Oligomeric Diluents of Varying Stiffness. <i>ACS Macro Letters</i> , 2015 , 4, 1134-1138	6.6	31
30	Universal localization transition accompanying glass formation: insights from efficient molecular dynamics simulations of diverse supercooled liquids. <i>Soft Matter</i> , 2019 , 15, 1223-1242	3.6	30
29	Influence of physical and chemical heterogeneity shape on thin film rupture. <i>Journal of Colloid and Interface Science</i> , 2006 , 295, 472-81	9.3	28

28	Enhancing heterogenous crystallization resistance in a bead-spring polymer model by modifying bond length. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 2014 , 52, 134-140	2.6	26
27	Temperature-Independent Rescaling of the Local Activation Barrier Drives Free Surface Nanoconfinement Effects on Segmental-Scale Translational Dynamics near T _g . <i>ACS Macro Letters</i> , 2018 , 7, 1295-1301	6.6	26
26	Roles of chain stiffness and segmental rattling in ionomer glass formation. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 2015 , 53, 1458-1469	2.6	25
25	Antifreeze Hydrogels from Amphiphilic Statistical Copolymers. <i>Chemistry of Materials</i> , 2019 , 31, 135-145	9.6	21
24	Three-Layer Model for the Emergence of Ultrastable Glasses from the Surfaces of Supercooled Liquids. <i>Journal of Physical Chemistry B</i> , 2016 , 120, 4861-5	3.4	19
23	Heterogeneous Rouse Model Predicts Polymer Chain Translational Normal Mode Decoupling. <i>Macromolecules</i> , 2018 , 51, 2887-2898	5.5	18
22	Spatially Distributed Rheological Properties in Confined Polymers by Noncontact Shear. <i>Journal of Physical Chemistry Letters</i> , 2017 , 8, 1229-1234	6.4	16
21	Correspondence between the rigid amorphous fraction and nanoconfinement effects on glass formation. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 2017 , 55, 907-918	2.6	16
20	Does fragility of glass formation determine the strength of T-nanoconfinement effects?. <i>Journal of Chemical Physics</i> , 2017 , 146, 104902	3.9	14
19	A Model for a Thermally Induced Polymer Coil-to-Globule Transition. <i>Macromolecules</i> , 2008 , 41, 5885-5889	9.5	14
18	Mobility gradients yield rubbery surfaces on top of polymer glasses. <i>Nature</i> , 2021 , 596, 372-376	50.4	13
17	Design rules for glass formation from model molecules designed by a neural-network-biased genetic algorithm. <i>Soft Matter</i> , 2019 , 15, 7795-7808	3.6	11
16	Scaled Particle Theory for the Coil-to-Globule Transition of an Isolated Polymer Chain. <i>Macromolecules</i> , 2013 , 46, 4691-4697	5.5	10
15	Poisson ratio mismatch drives low-strain reinforcement in elastomeric nanocomposites. <i>Soft Matter</i> , 2019 , 15, 656-670	3.6	8
14	HORIZONS FOR DESIGN OF FILLED RUBBER INFORMED BY MOLECULAR DYNAMICS SIMULATION. <i>Rubber Chemistry and Technology</i> , 2017 , 90, 238-263	1.7	8
13	Response to [Comment on [Generalized Localization Model of Relaxation in Glass-Forming Liquids]] by A. Ottochian et al.. <i>Soft Matter</i> , 2013 , 9, 7892	3.6	6
12	Nature of dynamic gradients, glass formation, and collective effects in ultrathin freestanding films. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	6
11	Probing the Metrology and Chemistry Dependences of the Onset Condition of Strong Nanoconfinement Effects on Dynamics. <i>Macromolecules</i> , 2020 , 53, 4158-4171	5.5	5

10	Pressure Effects on Polymer Coil-Globule Transitions near an LCST. <i>Macromolecules</i> , 2010 , 43, 1571-1574	5.5	5
9	Do String-like Cooperative Motions Predict Relaxation Times in Glass-Forming Liquids?. <i>Journal of Physical Chemistry B</i> , 2020 , 124, 266-276	3.4	5
8	Forecasting the experimental glass transition from short time relaxation data. <i>Journal of Non-Crystalline Solids</i> , 2020 , 544, 120205	3.9	4
7	Dynamical Correlations for Statistical Copolymers from High-Throughput Broad-Band Dielectric Spectroscopy. <i>ACS Combinatorial Science</i> , 2019 , 21, 276-299	3.9	3
6	Structure, nanomechanics, and dynamics of dispersed surfactant-free clay nanocomposite films. <i>Polymer Engineering and Science</i> , 2018 , 58, 1285-1295	2.3	1
5	The microscopic origins of stretched exponential relaxation in two model glass-forming liquids as probed by simulations in the isoconfigurational ensemble. <i>Journal of Chemical Physics</i> , 2020 , 153, 234503	3.9	1
4	Hierarchical Shape-Specified Model Polymer Nanoparticles via Copolymer Sequence Control. <i>Macromolecules</i> , 2022 , 55, 1957-1969	5.5	1
3	Near-Substrate Gradients in Chain Relaxation and Viscosity in a Model Low-Molecular Weight Polymer. <i>Macromolecules</i> , 2021 , 54, 5935-5949	5.5	0
2	Temperature dependence of aging dynamics in highly non-equilibrium model polymer glasses.. <i>Journal of Chemical Physics</i> , 2022 , 156, 114504	3.9	
1	Macromolecular Modeling	1-40	