Robert M Elder

List of Publications by Year
in descending order

32 papers	769 citations	516710 16 h-index	526287 27 g-index
32 all docs	32 docs citations	32 times ranked	910 citing authors

#	Article	IF	Citations
1	Understanding the Effect of Polylysine Architecture on DNA Binding Using Molecular Dynamics Simulations. Biomacromolecules, 2011, 12, 3870-3879.	5.4	78
2	Overcoming the structural versus energy dissipation trade-off in highly crosslinked polymer networks: Ultrahigh strain rate response in polydicyclopentadiene. Composites Science and Technology, 2015, 114, 17-25.	7.8	63
3	Influence of molecular weight between crosslinks on the mechanical properties of polymers formed via ring-opening metathesis. Soft Matter, 2018, 14, 3344-3360.	2.7	60
4	Nanovoid formation and mechanics: a comparison of poly(dicyclopentadiene) and epoxy networks from molecular dynamics simulations. Soft Matter, 2016, 12, 4418-4434.	2.7	49
5	Stacking order dependent mechanical properties of graphene/MoS2 bilayer and trilayer heterostructures. Applied Physics Letters, 2015, 107, .	3.3	45
6	Parameter-free predictions of the viscoelastic response of glassy polymers from non-affine lattice dynamics. Soft Matter, 2018, 14, 8475-8482.	2.7	45
7	Epoxy resin thermo-mechanics and failure modes: Effects of cure and cross-linker length. Composites Part B: Engineering, 2020, 186, 107814.	12.0	43
8	Interaction of Hyaluronan Binding Peptides with Glycosaminoglycans in Poly(ethylene glycol) Hydrogels. Biomacromolecules, 2014, 15, 1132-1141.	5.4	34
9	A molecular simulation study of the glass transition of cross-linked poly(dicyclopentadiene) networks. Chemical Physics Letters, 2015, 637, 103-109.	2.6	34
10	Glass fiber-epoxy interactions in the presence of silane: A molecular dynamics study. Applied Surface Science, 2021, 542, 148738.	6.1	34
11	Effect of Hydrophobic and Hydrophilic Surfaces on the Stability of Double-Stranded DNA. Biomacromolecules, 2015, 16, 1862-1869.	5.4	28
12	Structure and thermodynamics of ssDNA oligomers near hydrophobic and hydrophilic surfaces. Soft Matter, 2013, 9, 11521.	2.7	26
13	Mechanics and nanovoid nucleation dynamics: effects of polar functionality in glassy polymer networks. Soft Matter, 2018, 14, 8895-8911.	2.7	24
14	Coarse-Grained Simulation Studies of Effects of Polycation Architecture on Structure of the Polycation and Polycationâ€“Polyanion Complexes. Macromolecules, 2012, 45, 8083-8096.	4.8	20
15	Molecular Simulations of Polycationâ€“DNA Binding Exploring the Effect of Peptide Chemistry and Sequence in Nuclear Localization Sequence Based Polycations. Journal of Physical Chemistry B, 2013, 117, 11988-11999.	2.6	18
16	Molecular origins of anisotropic shock propagation in crystalline and amorphous polyethylene. Physical Review Materials, 2018, 2, .	2.4	18
17	Nonmonotonic dependence of polymer-glass mechanical response on chain bending stiffness. Physical Review E, 2017, 96, 030501.	2.1	16
18	Graphene/hexagonal boron nitride heterostructures: Mechanical properties and fracture behavior from nanoindentation simulations. Applied Physics Letters, 2018, 113, .	3.3	16

#	Article	IF	Citations
19	Shock-wave propagation and reflection in semicrystalline polyethylene: A molecular-level investigation. Physical Review Materials, 2017, 1, .	2.4	15
20	Identifying Nonaffine Softening Modes in Glassy Polymer Networks: A Pathway to Chemical Design. ACS Macro Letters, 2019, 8, 1160-1165.	4.8	14
21	Leveraging Extraction Testing to Predict Patient Exposure to Polymeric Medical Device Leachables Using Physics-based Models. Toxicological Sciences, 2020, 178, 201-211.	3.1	14
22	Sequence-Specific Recognition of Cancer Drug-DNA Adducts by HMGB1a Repair Protein. Biophysical Journal, 2012, 102, 2331-2338.	0.5	11
23	Origins of error in the localized virial stress. Chemical Physics Letters, 2019, 731, 136580.	2.6	9
24	Simulation study of the effects of surface chemistry and temperature on the conformations of ssDNA oligomers near hydrophilic and hydrophobic surfaces. Journal of Chemical Physics, 2014, 140, .	3.0	8
25	Modeling of glycidoxypropyltrimethoxy silane compositions using molecular dynamics simulations. Computational Materials Science, 2017, 140, 82-88.	3.0	8
26	Scaling up the lattice dynamics of amorphous materials by orders of magnitude. Physical Review B, 2020, 102, .	3.2	8
27	Topological structure and mechanics of glassy polymer networks. Soft Matter, 2017, 13, 8392-8401.	2.7	7
28	Advances in predicting patient exposure to medical device leachables. Medical Devices & Sensors, 2020, 3, e10063.	2.7	7
29	Role of structure and dynamics of DNA with cisplatin and oxaliplatin adducts in various sequence contexts on binding of HMGB1a. Molecular Simulation, 2012, 38, 793-808.	2.0	5
30	Ballistic Response of Polydicyclopentadiene vs. Epoxy Resins and Effects of Crosslinking. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 285-290.	0.5	5
31	Relations Between Dynamic Localization and Solute Diffusion in Polymers. Journal of Physical Chemistry B, 2021, 125, 9372-9383.	2.6	4
32	Predicting Solute Diffusivity in Polymers Using Timeâ€“Temperature Superposition. Journal of Physical Chemistry B, 2022, 126, 3768-3777.	2.6	3