Sinan Keten

List of Publications by Year in Descending Order

140 papers	5,298 citations	39 h-index	69 g-index
155 ext. papers	6,158 ext. citations	7.1 avg, IF	6.26 L-index

#	Paper	IF	Citations
140	Scaling for the inverse thickness dependence of specific penetration energy in polymer thin film impact tests. *Journal of the Mechanics and Physics of Solids*, **2022**, 161, 104808	5	
139	Hygromechanics of softwood cellulosic nanocomposite with intermolecular interactions at fiber-matrix interface investigated with molecular dynamics. *Composites Part B: Engineering*, **2022**, 228, 109449	10	1
138	Atomistic investigation of fracture mechanisms in phosphorus-functionalized epoxy resins. *International Journal of Mechanical Sciences*, **2022**, 107412	5.5	
137	Molecular insights into charged nanofiltration membranes: Structure, water transport, and water diffusion. *Journal of Membrane Science*, **2021**, 120057	9.6	3
136	Systematic Coarse-graining of Epoxy Resins with Machine Learning-Informed Energy Renormalization. *Npj Computational Materials*, **2021**, 7,	10.9	2
135	Explorations into the Mechanics of Hairy Nanoparticle Assemblies with Molecular Dynamics. *Springer Series in Materials Science*, **2021**, 179-202	0.9	
134	Atomistic Modeling of Peptide Aggregation and β-Sheet Structuring in Corn Zein for Viscoelasticity. *Biomacromolecules*, **2021**, 22, 1856-1866	6.9	0
133	Hydrogen bonds dominated frictional stick-slip of cellulose nanocrystals. *Carbohydrate Polymers*, **2021**, 258, 117682	10.3	10
132	Mesoscopic and multiscale modelling in materials. *Nature Materials*, **2021**, 20, 774-786	27	30
131	Quantifying Chemical Composition and Cross-link Effects on EPDM Elastomer Viscoelasticity with Molecular Dynamics. *Macromolecules*, **2021**, 54, 6780-6789	5.5	2
130	Conformational stability of the bacterial adhesin, FimH, with an inactivating mutation. *Proteins: Structure, Function and Bioinformatics*, **2021**, 89, 276-288	4.2	2
129	Universal Relation for Effective Interaction between Polymer-Grafted Nanoparticles. *Macromolecules*, **2021**, 54, 3052-3064	5.5	6
128	Microbial production of megadalton titin yields fibers with advantageous mechanical properties. *Nature Communications*, **2021**, 12, 5182	17.4	6
127	Hygromechanical mechanisms of wood cell wall revealed by molecular modeling and mixture rule analysis. *Science Advances*, **2021**, 7, eabi8919	14.3	3
126	Tuning star architecture to control mechanical properties and impact resistance of polymer thin films. *Cell Reports Physical Science*, **2021**, 2, 100596	6.1	1
125	Self-strengthening biphasic nanoparticle assemblies with intrinsic catch bonds. *Nature Communications*, **2021**, 12, 85	17.4	2
124	Disentangling Heat and Moisture Effects on Biopolymer Mechanics. *Macromolecules*, **2020**, 53, 1527-1535	5.5	5

123	Energy Renormalization for Coarse-Graining a Biomimetic Copolymer, Poly(catechol-styrene). *Macromolecules*, **2020**, 53, 9397-9405	5.5	7
122	Star topology increases ballistic resistance in thin polymer films. *Extreme Mechanics Letters*, **2020**, 41, 101038	3.9	4
121	Curli-Mediated Self-Assembly of a Fibrous Protein Scaffold for Hydroxyapatite Mineralization. *ACS Synthetic Biology*, **2020**, 9, 3334-3343	5.7	11
120	Structure and Mechanics of Bundled Semiflexible Polymer Networks. *Macromolecules*, **2020**, 53, 6123-6134	5.5	4
119	Interfacial mechanics and viscoelastic properties of patchy graphene oxide reinforced nanocomposites. *Carbon*, **2020**, 158, 303-313	10.4	17
118	Effect of Polymer Chemistry on Chain Conformations in Hairy Nanoparticle Assemblies. *ACS Macro Letters*, **2019**, 8, 1209-1215	6.6	12
117	A Simple Mechanical Model for Synthetic Catch Bonds. *Matter*, **2019**, 1, 911-925	12.7	7
116	Temperature effects on the nanoindentation characterization of stiffness gradients in confined polymers. *Soft Matter*, **2019**, 15, 359-370	3.6	7
115	Mechanical unfolding of alpha- and beta-helical protein motifs. *Soft Matter*, **2019**, 15, 1243-1252	3.6	7
114	Impact resistance of nanocellulose films with bioinspired Bouligand microstructures. *Nanoscale Advances*, **2019**, 1, 1351-1361	5.1	11
113	Failure criteria of unidirectional carbon fiber reinforced polymer composites informed by a computational micromechanics model. *Composites Science and Technology*, **2019**, 172, 81-95	8.6	42
112	Organic Nanotube with Subnanometer, pH-Responsive Lumen. *Journal of the American Chemical Society*, **2019**, 141, 10953-10957	16.4	13
111	Energy renormalization for coarse-graining polymers having different segmental structures. *Science Advances*, **2019**, 5, eaav4683	14.3	35
110	Dimerization energetics of curli fiber subunits CsgA and CsgB. *Npj Computational Materials*, **2019**, 5,	10.9	5
109	Adhesive behavior and detachment mechanisms of bacterial amyloid nanofibers. *Npj Computational Materials*, **2019**, 5,	10.9	7
108	Cohesive and adhesive properties of crosslinked semiflexible biopolymer networks. *Soft Matter*, **2019**, 15, 3807-3816	3.6	10
107	Microstructure and Size Effects on the Mechanics of Two Dimensional, High Aspect Ratio Nanoparticle Assemblies. *Frontiers in Materials*, **2019**, 6,	4	2
106	Stable micelles based on a mixture of coiled-coils: the role of different oligomeric states. *Nanoscale* , **2018**, 10, 7589-7596	7.7	2

105	Ballistic impact response of lipid membranes. *Nanoscale*, **2018**, 10, 4761-4770	7.7	8
104	Effect of Surface Modification on Water Adsorption and Interfacial Mechanics of Cellulose Nanocrystals. *ACS Applied Materials & Interfaces*, **2018**, 10, 8349-8358	9.5	20
103	Energy Renormalization for Coarse-Graining the Dynamics of a Model Glass-Forming Liquid. *Journal of Physical Chemistry B*, **2018**, 122, 2040-2045	3.4	30
102	A nanoscale perspective on the effects of transverse microprestress on drying creep of nanoporous solids. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2018**, 474, 20170570	2.4	3
101	Tunable seat belt behavior in nanocomposite interfaces inspired from bacterial adhesion pili. *Soft Matter*, **2018**, 14, 1530-1539	3.6	6
100	Multi-scale computational analysis of unidirectional carbon fiber reinforced polymer composites under various loading conditions. *Composite Structures*, **2018**, 196, 30-43	5.3	49
99	Binary Cellulose Nanocrystal Blends for Bioinspired Damage Tolerant Photonic Films. *Advanced Functional Materials*, **2018**, 28, 1800032	15.6	41
98	Spalling-like failure by cylindrical projectiles deteriorates the ballistic performance of multi-layer graphene plates. *Carbon*, **2018**, 126, 611-619	10.4	24
97	Analysis of Cone Wave Reflection in Finite-Size Elastic Membranes and Extension of the Ballistic Impact Problem From Elastic to Viscoelastic Membranes. *Journal of Applied Mechanics, Transactions ASME*, **2018**, 85,	2.7	1
96	Unraveling the Effect of Material Properties and Geometrical Factors on Ballistic Penetration Energy of Nanoscale Thin Films. *Journal of Applied Mechanics, Transactions ASME*, **2018**, 85,	2.7	15
95	Experimental and computational analysis of failure mechanisms in unidirectional carbon fiber reinforced polymer laminates under longitudinal compression loading. *Composite Structures*, **2018**, 203, 335-348	5.3	37
94	Achieving Enhanced Interfacial Adhesion and Dispersion in Cellulose Nanocomposites via Amorphous Interfaces. *Macromolecules*, **2018**, 51, 10304-10311	5.5	39
93	Biomimetic engineering of conductive curli protein films. *Nanotechnology*, **2018**, 29, 454002	3.4	24
92	Structure and Dynamics of a Graphene Melt. *ACS Nano*, **2018**, 12, 5427-5435	16.7	22
91	Energy Renormalization Method for the Coarse-Graining of Polymer Viscoelasticity. *Macromolecules*, **2018**, 51,	5.5	25
90	Materials by Design for Stiff and Tough Hairy Nanoparticle Assemblies. *ACS Nano*, **2018**, 12, 7946-7958	16.7	28
89	Side-group size effects on interfaces and glass formation in supported polymer thin films. *Journal of Chemical Physics*, **2017**, 146, 203311	3.9	25
88	Optimizing the mechanical properties of cellulose nanopaper through surface energy and critical length scale considerations. *Cellulose*, **2017**, 24, 3289-3299	5.5	20

87	Reduced ballistic limit velocity of graphene membranes due to cone wave reflection. *Extreme Mechanics Letters*, **2017**, 15, 70-77	3.9	25
86	A coarse-grained model for the mechanical behavior of graphene oxide. *Carbon*, **2017**, 117, 476-487	10.4	39
85	Plasticity resulted from phase transformation for monolayer molybdenum disulfide film during nanoindentation simulations. *Nanotechnology*, **2017**, 28, 164005	3.4	21
84	Energy-Renormalization for Achieving Temperature Transferable Coarse-Graining of Polymer Dynamics. *Macromolecules*, **2017**, 50,	5.5	56
83	Bending energy penalty enhances the adhesive strength of functional amyloid curli to surfaces. *Nanotechnology*, **2017**, 28, 464002	3.4	9
82	Dynamics of interacting interphases in polymer bilayer thin films. *MRS Communications*, **2017**, 7, 832-839	2.7	4
81	Sub-20 nm Stable Micelles Based on a Mixture of Coiled-Coils: A Platform for Controlled Ligand Presentation. *Biomacromolecules*, **2017**, 18, 3572-3580	6.9	8
80	Structural predictions for curli amyloid fibril subunits CsgA and CsgB. *RSC Advances*, **2017**, 7, 48102-48113	3.7	22
79	Simultaneously Tailoring Surface Energies and Thermal Stabilities of Cellulose Nanocrystals Using Ion Exchange: Effects on Polymer Composite Properties for Transportation, Infrastructure, and Renewable Energy Applications. *ACS Applied Materials & Interfaces*, **2016**, 8, 27270-27281	9.5	41
78	Transient effects of drying creep in nanoporous solids: understanding the effects of nanoscale energy barriers. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2016**, 472, 20160490	2.4	9
77	Conformational changes during permeation of Na through a modified cyclic peptide nanotube promote energy landscape roughness. *Physical Chemistry Chemical Physics*, **2016**, 18, 31698-31710	3.6	2
76	Adhesion mechanisms of curli subunit CsgA to abiotic surfaces. *Science Advances*, **2016**, 2, e1600998	14.3	52
75	Design of polymer conjugated 3-helix micelles as nanocarriers with tunable shapes. *Nanoscale*, **2016**, 8, 19334-19342	7.7	10
74	Recoverable Slippage Mechanism in Multilayer Graphene Leads to Repeatable Energy Dissipation. *ACS Nano*, **2016**, 10, 1820-8	16.7	89
73	Dynamics of water and solute transport in polymeric reverse osmosis membranes via molecular dynamics simulations. *Journal of Membrane Science*, **2016**, 506, 95-108	9.6	92
72	Rejection mechanisms for contaminants in polyamide reverse osmosis membranes. *Journal of Membrane Science*, **2016**, 509, 36-47	9.6	37
71	Mechanical Reinforcement of Proteins with Polymer Conjugation. *ACS Nano*, **2016**, 10, 2259-67	16.7	19
70	Predicting the Macroscopic Fracture Energy of Epoxy Resins from Atomistic Molecular Simulations. *Macromolecules*, **2016**, 49, 9474-9483	5.5	52

69	Glass-Transition and Side-Chain Dynamics in Thin Films: Explaining Dissimilar Free Surface Effects for Polystyrene vs Poly(methyl methacrylate). *ACS Macro Letters*, **2016**, 5, 481-486	6.6	44
68	Designing multi-layer graphene-based assemblies for enhanced toughness in nacre-inspired nanocomposites. *Molecular Systems Design and Engineering*, **2016**, 1, 40-47	4.6	33
67	Polymer Conjugation as a Strategy for Long-Range Order in Supramolecular Polymers. *Journal of Physical Chemistry B*, **2016**, 120, 3425-33	3.4	5
66	Critical length scales and strain localization govern the mechanical performance of multi-layer graphene assemblies. *Nanoscale*, **2016**, 8, 6456-62	7.7	49
65	Understanding the Interfacial Mechanical Response of Nanoscale Polymer Thin Films via Nanoindentation. *Macromolecules*, **2016**, 49, 3810-3817	5.5	39
64	Internal Structure of 15 nm 3-Helix Micelle Revealed by Small-Angle Neutron Scattering and Coarse-Grained MD Simulation. *Biomacromolecules*, **2016**, 17, 3262-3267	6.9	13
63	Multiple PEG Chains Attached onto the Surface of a Helix Bundle: Conformations and Implications. *ACS Biomaterials Science and Engineering*, **2015**, 1, 79-84	5.5	11
62	The role of mechanics in biological and bio-inspired systems. *Nature Communications*, **2015**, 6, 7418	17.4	125
61	Regulating Ion Transport in Peptide Nanotubes by Tailoring the Nanotube Lumen Chemistry. *Journal of Physical Chemistry Letters*, **2015**, 6, 1514-20	6.4	14
60	Thermomechanically Consistent and Temperature Transferable Coarse-Graining of Atactic Polystyrene. *Macromolecules*, **2015**, 48, 3057-3068	5.5	61
59	Impact of Moisture Adsorption on Structure and Physical Properties of Amorphous Biopolymers. *Macromolecules*, **2015**, 48, 2793-2800	5.5	54
58	Numerical Study of the Creep of Slit Nanopores: Role of Water **2015**,		1
57	Understanding emergent functions in self-assembled fibrous networks. *Nanotechnology*, **2015**, 26, 352501	3.4	
56	Anisotropy of Shear Relaxation in Confined Thin Films of Unentangled Polymer Melts. *Macromolecules*, **2015**, 48, 7631-7639	5.5	6
55	Creep of Lubricated Layered Nano-Porous Solids and Application To Cementitious Materials. *Journal of Nanomechanics & Micromechanics*, **2015**, 5, 04015002		10
54	Tuning Glass Transition in Polymer Nanocomposites with Functionalized Cellulose Nanocrystals through Nanoconfinement. *Nano Letters*, **2015**, 15, 6738-44	11.5	55
53	A coarse-grained model for the mechanical behavior of multi-layer graphene. *Carbon*, **2015**, 82, 103-115	10.4	118
52	Size-dependent mechanical behavior of free-standing glassy polymer thin films. *Journal of Materials Research*, **2015**, 30, 36-45	2.5	22

51	Tailoring the water structure and transport in nanotubes with tunable interiors. *Nanoscale*, **2015**, 7, 121-32	7.7	40
50	Stiffness Enhancement in Nacre-Inspired Nanocomposites due to Nanoconfinement. *Scientific Reports*, **2015**, 5, 16452	4.9	29
49	Effect of Polymer Conjugation Site on Stability and Self-Assembly of Coiled Coils. *BioNanoScience*, **2015**, 5, 140-149	3.4	12
48	Molecular Weight Effects on the Glass Transition and Confinement Behavior of Polymer Thin Films. *Macromolecular Rapid Communications*, **2015**, 36, 1422-7	4.8	41
47	Interfacial mechanics of cellulose nanocrystals. *MRS Bulletin*, **2015**, 40, 340-348	3.2	38
46	Interfacial stiffening of polymer thin films under nanoconfinement. *Extreme Mechanics Letters*, **2015**, 4, 89-95	3.9	25
45	Traction–separation laws and stick–slip shear phenomenon of interfaces between cellulose nanocrystals. *Journal of the Mechanics and Physics of Solids*, **2015**, 78, 526-539	5	45
44	A comparative molecular dynamics study of crystalline, paracrystalline and amorphous states of cellulose. *Cellulose*, **2014**, 21, 1103-1116	5.5	90
43	Thermodynamics versus Kinetics Dichotomy in the Linear Self-Assembly of Mixed Nanoblocks. *Journal of Physical Chemistry Letters*, **2014**, 5, 2021-6	6.4	5
42	Directing the self-assembly of supra-biomolecular nanotubes using entropic forces. *Soft Matter*, **2014**, 10, 851-61	3.6	16
41	Hierarchical cascades of instability govern the mechanics of coiled coils: helix unfolding precedes coil unzipping. *Biophysical Journal*, **2014**, 107, 477-484	2.9	10
40	Dependence of Polymer Thin Film Adhesion Energy on Cohesive Interactions between Chains. *Macromolecules*, **2014**, 47, 5286-5294	5.5	40
39	Molecular Mechanism of Moisture-Induced Transition in Amorphous Cellulose. *ACS Macro Letters*, **2014**, 3, 1037-1040	6.6	47
38	Systematic Method for Thermomechanically Consistent Coarse-Graining: A Universal Model for Methacrylate-Based Polymers. *Journal of Chemical Theory and Computation*, **2014**, 10, 2514-27	6.4	82
37	Dimensions of Biological Cellulose Nanocrystals Maximize Fracture Strength. *ACS Macro Letters*, **2014**, 3, 64-69	6.6	60
36	Effect of moisture on the traction-separation behavior of cellulose nanocrystal interfaces. *Applied Physics Letters*, **2014**, 105, 243702	3.4	22
35	Multiscale Modeling of Elasticity and Fracture in Organic Nanotubes. *Journal of Engineering Mechanics - ASCE*, **2014**, 140, 431-442	2.4	5
34	Coupled effects of substrate adhesion and intermolecular forces on polymer thin film glass-transition behavior. *Langmuir*, **2013**, 29, 12730-6	4	31

33	Substrate vs. free surface: Competing effects on the glass transition of polymer thin films. *Polymer*, **2013**, 54, 5942-5951	3.9	73
32	Coarse-grained simulation of molecular mechanisms of recovery in thermally activated shape-memory polymers. *Journal of the Mechanics and Physics of Solids*, **2013**, 61, 2625-2637	5	22
31	Poly(ethylene glycol) conjugation stabilizes the secondary structure of helices by reducing peptide solvent accessible surface area. *Biomacromolecules*, **2013**, 14, 4053-60	6.9	52
30	Critical Scales Govern the Mechanical Fragmentation Mechanisms of Biomolecular Assemblies. *Journal of Applied Mechanics, Transactions ASME*, **2013**, 80,	2.7	1
29	Persistence length and stochastic fragmentation of supramolecular nanotubes under mechanical force. *Nanotechnology*, **2013**, 24, 195103	3.4	21
28	Atomistic simulation based prediction of the solvent effect on the molecular mobility and glass transition of poly (methyl methacrylate). *Applied Physics Letters*, **2013**, 102, 041903	3.4	10
27	Tunable nanomechanics of protein disulfide bonds in redox microenvironments. *Journal of the Mechanical Behavior of Biomedical Materials*, **2012**, 5, 32-40	4.1	45
26	Hydrodynamics of capillary imbibition under nanoconfinement. *Langmuir*, **2012**, 28, 14488-95	4	43
25	ATOMISTIC MODELING AND MECHANICS OF SELF-ASSEMBLED ORGANIC NANOTUBES. *International Journal of Applied Mechanics*, **2011**, 03, 667-684	2.4	5
24	Processable cyclic peptide nanotubes with tunable interiors. *Journal of the American Chemical Society*, **2011**, 133, 15296-9	16.4	111
23	Triangular core as a universal strategy for stiff nanostructures in biology and biologically inspired materials. *Materials Science and Engineering C*, **2011**, 31, 775-780	8.3	14
22	Nanoconfinement controls stiffness, strength and mechanical toughness of beta-sheet crystals in silk. *Nature Materials*, **2010**, 9, 359-67	27	916
21	Linking Genetics and Mechanics in Structural Protein Materials: A Case Study of an Alport Syndrome Mutation in Tropocollagen. *Mathematics and Mechanics of Solids*, **2010**, 15, 755-770	2.3	8
20	Nanostructure and molecular mechanics of spider dragline silk protein assemblies. *Journal of the Royal Society Interface*, **2010**, 7, 1709-21	4.1	178
19	Molecular and nanostructural mechanisms of deformation, strength and toughness of spider silk fibrils. *Nano Letters*, **2010**, 10, 2626-34	11.5	301
18	Atomistic model of the spider silk nanostructure. *Applied Physics Letters*, **2010**, 96, 153701	3.4	77
17	Colloquium: Failure of molecules, bones, and the Earth itself. *Reviews of Modern Physics*, **2010**, 82, 1459-1487	44.9	36
16	Atomistic simulation of nanomechanical properties of Alzheimer's Abeta(1-40) amyloid fibrils under compressive and tensile loading. *Journal of Biomechanics*, **2010**, 43, 1196-201	2.9	82

15	Multiscale Modeling of Biological Protein Materials Deformation and Failure. *Challenges and Advances in Computational Chemistry and Physics*, **2010**, 473-533	0.7	
14	Alport Syndrome mutation changes molecular structure and nanomechanics of type IV tropocollagen. *Materials Research Society Symposia Proceedings*, **2009**, 1187, 26		
13	A multi-timescale strength model of alpha-helical protein domains. *Journal of Physics Condensed Matter*, **2009**, 21, 035111	1.8	16
12	Nanomechanical Characterization of the Triple Helix Domain in the Cell Puncture Needle of Bacteriophage T4 Virus. *Cellular and Molecular Bioengineering*, **2009**, 2, 66-74	3.9	15
11	Alport syndrome mutations in type IV tropocollagen alter molecular structure and nanomechanical properties. *Journal of Structural Biology*, **2009**, 168, 503-10	3.4	33
10	Geometric confinement governs the rupture strength of H-bond assemblies at a critical length scale. *Nano Letters*, **2008**, 8, 743-8	11.5	183
9	Asymptotic strength limit of hydrogen-bond assemblies in proteins at vanishing pulling rates. *Physical Review Letters*, **2008**, 100, 198301	7.4	70
8	Strength limit of entropic elasticity in beta-sheet protein domains. *Physical Review E*, **2008**, 78, 061913	2.4	32
7	Elasticity, strength and resilience: A comparative study on mechanical signatures of Helix, sheet and tropocollagen domains. *Nano Research*, **2008**, 1, 63-71	10	35
6	Theoretical and computational hierarchical nanomechanics of protein materials: Deformation and fracture. *Progress in Materials Science*, **2008**, 53, 1101-1241	42.2	144
5	Large deformation and fracture mechanics of a beta-helical protein nanotube: Atomistic and continuum modeling. *Computer Methods in Applied Mechanics and Engineering*, **2008**, 197, 3203-3214	5.7	26
4	Geometric confinement governs the rupture strength of H-bond assemblies at a critical length scale. *Materials Research Society Symposia Proceedings*, **2007**, 1061, 1		0
3	Asymptotic Strength Limit of Hydrogen Bond Assemblies in Proteins at Vanishing Pulling Rates. *Materials Research Society Symposia Proceedings*, **2007**, 1062, 1		
2	Hierarchies, multiple energy barriers, and robustness govern the fracture mechanics of alpha-helical and beta-sheet protein domains. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 16410-5	11.5	155
1	El Farol revisited. *Physica A: Statistical Mechanics and Its Applications*, **2005**, 346, 651-656	3.3	6