Tasuku Nakajima

List of Publications by Year
in descending order

89 papers	8,697 citations	61945 43 h-index	51562 86 g-index
90 all docs	90 docs citations	90 times ranked	6852 citing authors

#	Article	IF	Citations
1	Physical hydrogels composed of polyampholytes demonstrate high toughness and viscoelasticity. Nature Materials, 2013, 12, 932-937.	13.3	1,636
2	Oppositely Charged Polyelectrolytes Form Tough, Selfâ€Healing, and Rebuildable Hydrogels. Advanced Materials, 2015, 27, 2722-2727.	11.1	545
3	Mechanoresponsive self-growing hydrogels inspired by muscle training. Science, 2019, 363, 504-508.	6.0	526
4	Tough Physical Doubleâ€Network Hydrogels Based on Amphiphilic Triblock Copolymers. Advanced Materials, 2016, 28, 4884-4890.	11.1	442
5	True Chemical Structure of Double Network Hydrogels. Macromolecules, 2009, 42, 2184-2189.	2.2	258
6	A Facile Method to Fabricate Anisotropic Hydrogels with Perfectly Aligned Hierarchical Fibrous Structures. Advanced Materials, 2018, 30, 1704937.	11.1	244
7	Doubleâ€Network Hydrogels Strongly Bondable to Bones by Spontaneous Osteogenesis Penetration. Advanced Materials, 2016, 28, 6740-6745.	11.1	225
8	Mechano-actuated ultrafast full-colour switching in layered photonic hydrogels. Nature Communications, 2014, 5, 4659.	5.8	210
9	Characterization of internal fracture process of double network hydrogels under uniaxial elongation. Soft Matter, 2013, 9, 1955-1966.	1.2	195
10	Self-Healing Behaviors of Tough Polyampholyte Hydrogels. Macromolecules, 2016, 49, 4245-4252.	2.2	191
11	A Universal Molecular Stent Method to Toughen any Hydrogels Based on Double Network Concept. Advanced Functional Materials, 2012, 22, 4426-4432.	7.8	175
12	Selfâ€Adjustable Adhesion of Polyampholyte Hydrogels. Advanced Materials, 2015, 27, 7344-7348.	11.1	160
13	Proteoglycans and Glycosaminoglycans Improve Toughness of Biocompatible Double Network Hydrogels. Advanced Materials, 2014, 26, 436-442.	11.1	155
14	Lamellar Hydrogels with High Toughness and Ternary Tunable Photonic Stopâ€Band. Advanced Materials, 2013, 25, 3106-3110.	11.1	152
15	Phaseâ€Separationâ€Induced Anomalous Stiffening, Toughening, and Selfâ€Healing of Polyacrylamide Gels. Advanced Materials, 2015, 27, 6990-6998.	11.1	132
16	Importance of Entanglement between First and Second Components in High-Strength Double Network Gels. Macromolecules, 2007, 40, 6658-6664.	2.2	129
17	Crack Blunting and Advancing Behaviors of Tough and Self-healing Polyampholyte Hydrogel. Macromolecules, 2014, 47, 6037-6046.	2.2	123
18	Anisotropic tough double network hydrogel from fish collagen and its spontaneous inÂvivo bonding to bone. Biomaterials, 2017, 132, 85-95.	5.7	122

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19	Structure Optimization and Mechanical Model for Microgel-Reinforced Hydrogels with High Strength and Toughness. Macromolecules, 2012, 45, 5218-5228.	2.2	119
20	Brittleâ€"ductile transition of double network hydrogels: Mechanical balance of two networks as the key factor. Polymer, 2014, 55, 914-923.	1.8	119
21	Yielding Criteria of Double Network Hydrogels. Macromolecules, 2016, 49, 1865-1872.	2.2	119
22	Energyâ€Dissipative Matrices Enable Synergistic Toughening in Fiber Reinforced Soft Composites. Advanced Functional Materials, 2017, 27, 1605350.	7.8	116
23	Water-Induced Brittle-Ductile Transition of Double Network Hydrogels. Macromolecules, 2010, 43, 9495-9500.	2.2	104
24	Bulk Energy Dissipation Mechanism for the Fracture of Tough and Self-Healing Hydrogels. Macromolecules, 2017, 50, 2923-2931.	2.2	102
25	Molecular structure of self-healing polyampholyte hydrogels analyzed from tensile behaviors. Soft Matter, 2015, 11, 9355-9366.	1.2	100
26	Synthesis and Fracture Process Analysis of Double Network Hydrogels with a Well-Defined First Network. ACS Macro Letters, 2013, 2, 518-521.	2.3	99
27	Double network hydrogels from polyzwitterions: high mechanical strength and excellent anti-biofouling properties. Journal of Materials Chemistry B, 2013, 1, 3685.	2.9	99
28	Free Reprocessability of Tough and Self-Healing Hydrogels Based on Polyion Complex. ACS Macro Letters, 2015, 4, 961-964.	2.3	96
29	Strong and Tough Polyion-Complex Hydrogels from Oppositely Charged Polyelectrolytes: A Comparative Study with Polyampholyte Hydrogels. Macromolecules, 2016, 49, 2750-2760.	2.2	91
30	Fabrication of Tough and Stretchable Hybrid Double-Network Elastomers Using Ionic Dissociation of Polyelectrolyte in Nonaqueous Media. Chemistry of Materials, 2019, 31, 3766-3776.	3.2	86
31	Tough Particleâ€Based Double Network Hydrogels for Functional Solid Surface Coatings. Advanced Materials Interfaces, 2018, 5, 1801018.	1.9	78
32	High Fracture Efficiency and Stress Concentration Phenomenon for Microgel-Reinforced Hydrogels Based on Double-Network Principle. Macromolecules, 2012, 45, 9445-9451.	2.2	75
33	A phase diagram of neutral polyampholyte â€" from solution to tough hydrogel. Journal of Materials Chemistry B, 2013, 1, 4555.	2.9	71
34	Network elasticity of a model hydrogel as a function of swelling ratio: from shrinking to extreme swelling states. Soft Matter, 2018, 14, 9693-9701.	1.2	71
35	Effect of void structure on the toughness of double network hydrogels. Journal of Polymer Science, Part B: Polymer Physics, 2011, 49, 1246-1254.	2.4	67
36	Generalization of the sacrificial bond principle for gel and elastomer toughening. Polymer Journal, 2017, 49, 477-485.	1.3	67

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37	Crack Tip Field of a Double-Network Gel: Visualization of Covalent Bond Scission through Mechanoradical Polymerization. Macromolecules, 2020, 53, 8787-8795.	2.2	65
38	Control superstructure of rigid polyelectrolytes in oppositely charged hydrogels via programmed internal stress. Nature Communications, 2014, 5, 4490.	5.8	64
39	Hydrophobic Hydrogels with Fruitâ€Like Structure and Functions. Advanced Materials, 2019, 31, e1900702.	11.1	64
40	A facile method for synthesizing free-shaped and tough double network hydrogels using physically crosslinked poly(vinyl alcohol) as an internal mold. Polymer Chemistry, 2010, 1, 693.	1.9	62
41	Fracture Process of Microgel-Reinforced Hydrogels under Uniaxial Tension. Macromolecules, 2014, 47, 3587-3594.	2.2	55
42	Stretching-induced ion complexation in physical polyampholyte hydrogels. Soft Matter, 2016, 12, 8833-8840.	1.2	47
43	Tough and Selfâ€Recoverable Thin Hydrogel Membranes for Biological Applications. Advanced Functional Materials, 2018, 28, 1801489.	7.8	47
44	Creep Behavior and Delayed Fracture of Tough Polyampholyte Hydrogels by Tensile Test. Macromolecules, 2016, 49, 5630-5636.	2.2	42
45	Effect of Structure Heterogeneity on Mechanical Performance of Physical Polyampholytes Hydrogels. Macromolecules, 2019, 52, 7369-7378.	2.2	42
46	Sliding Friction of Zwitterionic Hydrogel and Its Electrostatic Origin. Macromolecules, 2014, 47, 3101-3107.	2.2	41
47	Anisotropic Growth of Hydroxyapatite in Stretched Double Network Hydrogel. ACS Nano, 2017, 11, 12103-12110.	7.3	41
48	Preparation of Tough Double- and Triple-Network Supermacroporous Hydrogels through Repeated Cryogelation. Chemistry of Materials, 2020, 32, 8576-8586.	3.2	41
49	Effect of Relative Strength of Two Networks on the Internal Fracture Process of Double Network Hydrogels As Revealed by <i>in Situ</i> Small-Angle X-ray Scattering. Macromolecules, 2020, 53, 1154-1163.	2.2	40
50	Tough polyion-complex hydrogels from soft to stiff controlled by monomer structure. Polymer, 2017, 116, 487-497.	1.8	38
51	Quantitative Observation of Electric Potential Distribution of Brittle Polyelectrolyte Hydrogels Using Microelectrode Technique. Macromolecules, 2016, 49, 3100-3108.	2.2	37
52	Elasticâ€“Plastic Transformation of Polyelectrolyte Complex Hydrogels from Chitosan and Sodium Hyaluronate. Macromolecules, 2018, 51, 8887-8898.	2.2	37
53	Nanophase Separation in Immiscible Double Network Elastomers Induces Synergetic Strengthening, Toughening, and Fatigue Resistance. Chemistry of Materials, 2021, 33, 3321-3334.	3.2	37
54	Tough Double-Network Gels and Elastomers from the Nonprestretched First Network. ACS Macro Letters, 2019, 8, 1407-1412.	2.3	36

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55	Distinctive Characteristics of Internal Fracture in Tough Double Network Hydrogels Revealed by Various Modes of Stretching. Macromolecules, 2018, 51, 5245-5257.	2.2	35
56	Chitin-Based Double-Network Hydrogel as Potential Superficial Soft-Tissue-Repairing Materials. Biomacromolecules, 2020, 21, 4220-4230.	2.6	35
57	Polymer Adsorbed Bilayer Membranes Form Self-Healing Hydrogels with Tunable Superstructure. Macromolecules, 2015, 48, 2277-2282.	2.2	34
58	Water-Triggered Ductileâ€"Brittle Transition of Anisotropic Lamellar Hydrogels and Effect of Confinement on Polymer Dynamics. Macromolecules, 2017, 50, 8169-8177.	2.2	29
59	Azo-Crosslinked Double-Network Hydrogels Enabling Highly Efficient Mechanoradical Generation. Journal of the American Chemical Society, 2022, 144, 3154-3161.	6.6	29
60	Swim bladder collagen forms hydrogel with macroscopic superstructure by diffusion induced fast gelation. Journal of Materials Chemistry B, 2015, 3, 7658-7666.	2.9	27
61	Polyzwitterions as a Versatile Building Block of Tough Hydrogels: From Polyelectrolyte Complex Gels to Double-Network Gels. ACS Applied Materials & Interfaces, 2020, 12, 50068-50076.	4.0	26
62	SUPER TOUGH GELS WITH A DOUBLE NETWORK STRUCTURE. Chinese Journal of Polymer Science (English) Tj ETQq0 0 0 rgBT /Overlock	2.0	25
63	Micro patterning of hydroxyapatite by soft lithography on hydrogels for selective osteoconduction. Acta Biomaterialia, 2018, 81, 60-69.	4.1	22
64	Revisiting the Origins of the Fracture Energy of Tough Double-Network Hydrogels with Quantitative Mechanochemical Characterization of the Damage Zone. Macromolecules, 2021, 54, 10331-10339.	2.2	22
65	In SituObservation of Ca2+Diffusion-Induced Superstructure Formation of a Rigid Polyanion. Macromolecules, 2014, 47, 7208-7214.	2.2	20
66	Coupled instabilities of surface crease and bulk bending during fast free swelling of hydrogels. Soft Matter, 2016, 12, 5081-5088.	1.2	20
67	Supramolecular hydrogels with multi-cylindrical lamellar bilayers: Swelling-induced contraction and anisotropic molecular diffusion. Polymer, 2017, 128, 373-378.	1.8	20
68	Tough double network elastomers reinforced by the amorphous cellulose network. Polymer, 2019, 178, 121686.	1.8	20
69	Tough and Variable-Band-Gap Photonic Hydrogel Displaying Programmable Angle-Dependent Colors. ACS Omega, 2018, 3, 55-62.	1.6	18
70	Effect of the constituent networks of double-network gels on their mechanical properties and energy dissipation process. Soft Matter, 2020, 16, 8618-8627.	1.2	18
71	Geometric and Edge Effects on Swelling-Induced Ordered Structure Formation in Polyelectrolyte Hydrogels. Macromolecules, 2013, 46, 9083-9090.	2.2	17
72	Damage cross-effect and anisotropy in tough double network hydrogels revealed by biaxial stretching. Soft Matter, 2019, 15, 3719-3732.	1.2	17

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73	Brittle, ductile, paste-like behaviors and distinct necking of double network gels with enhanced heterogeneity. Journal of Physics: Conference Series, 2009, 184, 012016.	0.3	16
74	A Deformation Mechanism for Doubleâ€Network Hydrogels with Enhanced Toughness. Macromolecular Symposia, 2010, 291-292, 122-126.	0.4	15
75	Quasi-unidirectional shrinkage of gels with well-oriented lipid bilayers upon uniaxial stretching. Soft Matter, 2015, 11, 237-240.	1.2	14
76	Relaxation Dynamics and Underlying Mechanism of a Thermally Reversible Gel from Symmetric Triblock Copolymer. Macromolecules, 2019, 52, 8651-8661.	2.2	12
77	Double-network gels as polyelectrolyte gels with salt-insensitive swelling properties. Soft Matter, 2020, 16, 5487-5496.	1.2	11
78	Friction of Zwitterionic Hydrogel by Dynamic Polymer Adsorption. Macromolecules, 2015, 48, 5394-5401.	2.2	10
79	Molecular structure and properties of click hydrogels with controlled dangling end defect. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 1227-1236.	2.4	10
80	Tough Triblock Copolymer Hydrogels with Different Micromorphologies for Medical and Sensory Materials. ACS Applied Polymer Materials, 2019, 1, 1948-1953.	2.0	9
81	Lamellar Bilayer to Fibril Structure Transformation of Tough Photonic Hydrogel under Elongation. Macromolecules, 2020, 53, 4711-4721.	2.2	7
82	Creation of Double Network Hydrogels with Extremely High Strength and Its Anomalous Fracture Mechanism. Kobunshi Ronbunshu, 2008, 65, 707-715.	0.2	6
83	Experimental Verification of the Balance between Elastic Pressure and Ionic Osmotic Pressure of Highly Swollen Charged Gels. Gels, 2021, 7, 39.	2.1	6
84	Surfactant induced bilayer-micelle transition for emergence of functions in anisotropic hydrogel. Journal of Materials Chemistry B, 2022, 10, 8386-8397.	2.9	4
85	Synthesis of degradable double network gels using a hydrolysable cross-linker. Polymer Chemistry, 2022, 13, 3756-3762.	1.9	3
86	Double-Network Hydrogels: Soft and Tough IPN. , 2013, , 1-6.		2
87	Double-Network Hydrogels: Soft and Tough IPN. , 2015, , 620-625.		1
88	Structure Transition and Function Modification of a Hydrogel Based on Lamellar Bilayers. Kobunshi Ronbunshu, 2016, 73, 157-165.	0.2	0
89	Stimuli-Responsive Transformation of a Gradient Gel. Kobunshi Ronbunshu, 2017, 74, 311-318.	0.2	0