

# Koichi Mayumi

## List of Publications by Citations

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59  
papers

1,632  
citations

23  
h-index

39  
g-index

63  
ext. papers

2,064  
ext. citations

5.6  
avg, IF

5.08  
L-index

#	Paper	IF	Citations
59	Stress-strain Relationship of Highly Stretchable Dual Cross-Link Gels: Separability of Strain and Time Effect. <i>ACS Macro Letters</i> , <b>2013</b> , 2, 1065-1068	6.6	140
58	Time Dependent Behavior of a Dual Cross-Link Self-Healing Gel: Theory and Experiments. <i>Macromolecules</i> , <b>2014</b> , 47, 7243-7250	5.5	138
57	Viscoelastic Properties of Poly(vinyl alcohol) Hydrogels Having Permanent and Transient Cross-Links Studied by Microrheology, Classical Rheometry, and Dynamic Light Scattering. <i>Macromolecules</i> , <b>2013</b> , 46, 4174-4183	5.5	122
56	Structure and dynamics of polyrotaxane and slide-ring materials. <i>Polymer</i> , <b>2010</b> , 51, 959-967	3.9	95
55	Tough hydrogels with rapid self-reinforcement. <i>Science</i> , <b>2021</b> , 372, 1078-1081	33.3	84
54	Highly Stretchable and Instantly Recoverable Slide-Ring Gels Consisting of Enzymatically Synthesized Polyrotaxane with Low Host Coverage. <i>Chemistry of Materials</i> , <b>2018</b> , 30, 5013-5019	9.6	73
53	Mechanics of slide-ring gels: novel entropic elasticity of a topological network formed by ring and string. <i>Soft Matter</i> , <b>2012</b> , 8, 8179	3.6	68
52	Fracture of dual crosslink gels with permanent and transient crosslinks. <i>Extreme Mechanics Letters</i> , <b>2016</b> , 6, 52-59	3.9	65
51	Unusual Fracture Behavior of Slide-Ring Gels with Movable Cross-Links. <i>ACS Macro Letters</i> , <b>2017</b> , 6, 1409-1413	6.13	64
50	Mechanics of a Dual Cross-Link Gel with Dynamic Bonds: Steady State Kinetics and Large Deformation Effects. <i>Macromolecules</i> , <b>2016</b> , 49, 3497-3507	5.5	59
49	Optically transparent, high-toughness elastomer using a polyrotaxane cross-linker as a molecular pulley. <i>Science Advances</i> , <b>2018</b> , 4, eaat7629	14.3	59
48	One-Pot Synthesis and Characterization of Polyrotaxane-Silica Hybrid Aerogel. <i>ACS Macro Letters</i> , <b>2017</b> , 6, 281-286	6.6	45
47	Slide-Ring Cross-Links Mediated Tough Metallosupramolecular Hydrogels with Superior Self-Recoverability. <i>Macromolecules</i> , <b>2019</b> , 52, 6748-6755	5.5	43
46	Rheology of a dual crosslink self-healing gel: Theory and measurement using parallel-plate torsional rheometry. <i>Journal of Rheology</i> , <b>2015</b> , 59, 643-665	4.1	41
45	Mechanical properties of supramolecular elastomers prepared from polymer-grafted polyrotaxane. <i>Polymer</i> , <b>2017</b> , 128, 386-391	3.9	40
44	Concentration-Induced Conformational Change in Linear Polymer Threaded into Cyclic Molecules. <i>Macromolecules</i> , <b>2008</b> , 41, 6480-6485	5.5	37
43	Molecular weight dependency of polyrotaxane-cross-linked polymer gel extensibility. <i>Chemical Communications</i> , <b>2016</b> , 52, 13757-13759	5.8	32

42	Rheological properties of tough hydrogels based on an associating polymer with permanent and transient crosslinks: Effects of crosslinking density. <i>Journal of Rheology</i> , <b>2017</b> , 61, 1371-1383	4.1	29
41	Movable cross-linked elastomer with aligned carbon nanotube/nanofiber as high thermally conductive tough flexible composite. <i>Composites Science and Technology</i> , <b>2020</b> , 190, 108009	8.6	28
40	Molecular Dynamics of Polyrotaxane in Solution Investigated by Quasi-Elastic Neutron Scattering and Molecular Dynamics Simulation: Sliding Motion of Rings on Polymer. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 9655-9663	16.4	25
39	Ion-Conductive and Elastic Slide-Ring Gel Li Electrolytes Swollen with Ionic Liquid. <i>Electrochimica Acta</i> , <b>2017</b> , 229, 166-172	6.7	24
38	Thermally conductive tough flexible elastomers as composite of slide-ring materials and surface modified boron nitride particles via plasma in solution. <i>Applied Physics Letters</i> , <b>2018</b> , 112, 101901	3.4	23
37	Mechanically Interlocked Structure of Polyrotaxane Investigated by Contrast Variation Small-Angle Neutron Scattering. <i>Macromolecules</i> , <b>2009</b> , 42, 6327-6329	5.5	23
36	Influence of Structural Characteristics on Stretching-Driven Swelling of Polyrotaxane Gels with Movable Cross Links. <i>Macromolecules</i> , <b>2012</b> , 45, 6733-6740	5.5	22
35	Ductile Glass of Polyrotaxane Toughened by Stretch-Induced Intramolecular Phase Separation. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 32436-32440	9.5	19
34	Crack propagation resistance of slide-ring gels. <i>Polymer</i> , <b>2019</b> , 181, 121782	3.9	16
33	Visualization and Quantitative Evaluation of Toughening Polymer Networks by a Sacrificial Dynamic Cross-Linker with Mechanochromic Properties. <i>ACS Macro Letters</i> , <b>2020</b> , 9, 1108-1113	6.6	16
32	Sliding Dynamics of Ring on Polymer in Rotaxane: A Coarse-Grained Molecular Dynamics Simulation Study. <i>Macromolecules</i> , <b>2019</b> , 52, 3787-3793	5.5	15
31	Applicability of a particularly simple model to nonlinear elasticity of slide-ring gels with movable cross-links as revealed by unequal biaxial deformation. <i>Journal of Chemical Physics</i> , <b>2014</b> , 141, 134906	3.9	15
30	Dynamics of polyrotaxane investigated by neutron spin echo. <i>Physica B: Condensed Matter</i> , <b>2009</b> , 404, 2600-2602	2.8	15
29	Dynamic light-scattering measurement of sieving polymer solutions for protein separation on SDS CE. <i>Electrophoresis</i> , <b>2009</b> , 30, 3607-12	3.6	14
28	Direct Observation of Large Deformation and Fracture Behavior at the Crack Tip of Slide-Ring Gel. <i>Journal of the Electrochemical Society</i> , <b>2019</b> , 166, B3143-B3147	3.9	12
27	Highly Transparent and Tough Filler Composite Elastomer Inspired by the Cornea <b>2020</b> , 2, 325-330		11
26	Synthesis, structure, and mechanical properties of silica nanocomposite polyrotaxane gels. <i>Beilstein Journal of Organic Chemistry</i> , <b>2015</b> , 11, 2194-201	2.5	11
25	Molecular Dynamics Simulation and Theoretical Model of Elasticity in Slide-Ring Gels. <i>ACS Macro Letters</i> , <b>2020</b> , 9, 1280-1285	6.6	10

24	Efficient mechanical toughening of polylactic acid without substantial decreases in stiffness and transparency by the reactive grafting of polyrotaxanes. <i>Journal of Inclusion Phenomena and Macrocyclic Chemistry</i> , <b>2019</b> , 93, 107-116	1.7	10
23	Development of High Thermally Conductive Flexible Elastomer as a Composite Material of Slide-Ring Material and Plasma-Surface-Modified Boron Nitride Particles: Effect of Plasma-Surface Modification of Boron Nitride Particles. <i>Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals</i> , <b>2018</b> , 82, 403-407	0.4	10
22	The static structure of polyrotaxane in solution investigated by contrast variation small-angle neutron scattering. <i>Polymer Journal</i> , <b>2011</b> , 43, 155-163	2.7	8
21	Softness, Elasticity, and Toughness of Polymer Networks with Slide-Ring Cross-Links. <i>Gels</i> , <b>2021</b> , 7,	4.2	7
20	Drastic Change of Mechanical Properties of Polyrotaxane Bulk: ABABAB Sequence Change Depending on Ring Position. <i>ACS Macro Letters</i> , <b>2019</b> , 8, 140-144	6.6	7
19	Theory of volume phase transition of slide-ring gels. <i>Reactive and Functional Polymers</i> , <b>2013</b> , 73, 904-910	4.6	6
18	Slide-Ring Material/Highly Dispersed Graphene Oxide Composite with Mechanical Strength and Tunable Electrical Conduction as a Stretchable-Base Substrate. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 47911-47920	9.5	6
17	Static and dynamic light scattering studies on dilute polyrotaxane solutions. <i>Journal of Physics: Conference Series</i> , <b>2009</b> , 184, 012018	0.3	5
16	Viscoelastic relaxation attributed to the molecular dynamics of polyrotaxane confined in an epoxy resin network. <i>Polymer Journal</i> , <b>2020</b> , 52, 1211-1221	2.7	4
15	Buffers to suppress sodium dodecyl sulfate adsorption to polyethylene oxide for protein separation on capillary polymer electrophoresis. <i>Electrophoresis</i> , <b>2011</b> , 32, 448-54	3.6	4
14	Crack velocity dependent toughness of polyrotaxane networks: The sliding dynamics of rings on polymer under stretching. <i>Mechanics of Materials</i> , <b>2021</b> , 156, 103784	3.3	4
13	Mechanical and scratch behaviors of polyrotaxane-modified poly(methyl methacrylate). <i>Journal of Applied Polymer Science</i> , <b>2021</b> , 138, 51237	2.9	4
12	Molecular dynamics and structure of polyrotaxane in solution. <i>Polymer Journal</i> , <b>2021</b> , 53, 581-586	2.7	4
11	Fabrication of flexible porous slide-ring polymer/carbon nanofiber composite elastomer by simultaneous freeze-casting and cross-linking reaction with dimethyl sulfoxide. <i>Composites Science and Technology</i> , <b>2021</b> , 215, 109028	8.6	4
10	Effect of movable crosslinking points on mechanical properties in composite materials of large amount of plasma-surface-modified boron nitride and slide-ring elastomer. <i>Composites Science and Technology</i> , <b>2021</b> , 216, 109036	8.6	4
9	Fracture Behavior of Polyrotaxane-Toughened Poly(Methyl Methacrylate).. <i>Langmuir</i> , <b>2022</b> ,	4	3
8	Mechanical properties of slide-ring materials for dielectric elastomer actuators <b>2019</b> ,		2
7	High-yield one-pot synthesis of polyrotaxanes with tunable well-defined threading ratios over a wide range.. <i>RSC Advances</i> , <b>2022</b> , 12, 3796-3800	3.7	1

6	Ionic transport and mechanical properties of slide-ring gel swollen with Mg-ion electrolytes. <i>Ionics</i> , <b>2020</b> , 26, 255-261	2.7	1
5	Fabrication of polyrotaxane and graphene nanoplate composites with high thermal conductivities. <i>Polymer Composites</i> , <b>2021</b> , 42, 5556	3	1
4	Tri-branched gels: Rubbery materials with the lowest branching factor approach the ideal elastic limit.. <i>Science Advances</i> , <b>2022</b> , 8, eabk0010	14.3	1
3	Mechanical and Fracture Properties of Dynamically Cross-Linked Polymeric Materials. <i>Nihon Reoraji Gakkaishi</i> , <b>2021</b> , 49, 295-301	0.8	1
2	Mechanical and Fracture Properties of Dynamically Cross-Linked Polymer Gels and Elastomers with Molecular Necklaces. <i>Nihon Reoraji Gakkaishi</i> , <b>2019</b> , 47, 43-49	0.8	0
1	Mechanical Properties of Self-Recovery Tough Gels with Permanent and Reversible Crosslinks. <i>Kobunshi Ronbunshu</i> , <b>2015</b> , 72, 597-605	0	