Manfred Wilhelm

List of Publications by Year
in descending order

78	3,863	236925	123424
papers	citations	25 h-index	61 g-index

79	79	79	2863
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A review of nonlinear oscillatory shear tests: Analysis and application of large amplitude oscillatory shear (LAOS). Progress in Polymer Science, 2011, 36, 1697-1753.	24.7	1,109
2	Fourier-Transform Rheology. Macromolecular Materials and Engineering, 2002, 287, 83-105.	3.6	413
3	Establishing a New Mechanical Nonlinear Coefficient Q from FT-Rheology: First Investigation of Entangled Linear and Comb Polymer Model Systems. Macromolecules, 2009, 42, 411-422.	4.8	258
4	High sensitivity Fourier-transform rheology. Rheologica Acta, 1999, 38, 349-356.	2.4	236
5	Comb and Bottlebrush Polymers with Superior Rheological and Mechanical Properties. Advanced Materials, 2019, 31, e1806484.	21.0	117
6	Analysis of medium amplitude oscillatory shear data of entangled linear and model comb polymers. Journal of Rheology, 2011, 55, 495-516.	2.6	110
7	Synthesis and Linear and Nonlinear Melt Rheology of Well-Defined Comb Architectures of PS and PpMS with a Low and Controlled Degree of Long-Chain Branching. Macromolecules, 2013, 46, 4978-4994.	4.8	109
8	Chondroinductive Alginate-Based Hydrogels Having Graphene Oxide for 3D Printed Scaffold Fabrication. ACS Applied Materials & Interfaces, 2020, 12, 4343-4357.	8.0	107
9	Detection and quantification of branching in polyacrylates by size-exclusion chromatography (SEC) and melt-state 13C NMR spectroscopy. Polymer, 2009, 50, 2373-2383.	3.8	103
10	Linear and Extensional Rheology of Model Branched Polystyrenes: From Loosely Grafted Combs to Bottlebrushes. Macromolecules, 2017, 50, 5964-5977.	4.8	75
11	Increased torque transducer sensitivity via oversampling. Rheologica Acta, 2001, 40, 395-399.	2.4	73
12	Effect of Molecular Weight, Polydispersity, and Monomer of Linear Homopolymer Melts on the Intrinsic Mechanical Nonlinearity ³Q₀ (Ï‰) in MAOS. Macromolecules, 2016, 49, 3566-3579.	4.8	70
13	Network Structure and Inhomogeneities of Model and Commercial Polyelectrolyte Hydrogels as Investigated by Low-Field Proton NMR Techniques. Macromolecules, 2014, 47, 4251-4265.	4.8	47
14	Observation of New States of Liquid Crystal 8CB under Nonlinear Shear Conditions as Observed via a Novel and Unique Rheology/Small-Angle X-ray Scattering Combination. Langmuir, 2011, 27, 2880-2887.	3.5	46
15	Hyphenated lowâ€field NMR techniques: combining NMR with NIR, GPC/SEC and rheometry. Magnetic Resonance in Chemistry, 2016, 54, 494-501.	1.9	38
16	Anionic Synthesis and Rheological Characterization of Poly(pâ€methylstyrene) Model Comb Architectures with a Defined and Very Low Degree of Long Chain Branching. Macromolecular Rapid Communications, 2010, 31, 2140-2145.	3.9	36
17	Investigation of the rheological behavior of industrial tubular and autoclave LDPEs under SAOS, LAOS, transient shear, and elongational flows compared with predictions from the MSF theory. Journal of Rheology, 2013, 57, 1693-1714.	2.6	34
18	Styrene-Based Poly(ethylene oxide) Side-Chain Block Copolymers as Solid Polymer Electrolytes for High-Voltage Lithium-Metal Batteries. ACS Applied Materials & Interfaces, 2021, 13, 39257-39270.	8.0	34

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19	Kinetics of Shear Microphase Orientation and Reorientation in Lamellar Diblock and Triblock Copolymer Melts as Detected via FTâ€Rheology and 2Dâ€SAXS. Macromolecular Chemistry and Physics, 2007, 208, 1719-1729.	2.2	31
20	SECâ€MRâ€NMR: Online Coupling of Size Exclusion Chromatography and Medium Resolution NMR Spectroscopy. Macromolecular Rapid Communications, 2011, 32, 665-670.	3.9	29
21	RAFT-based Polystyrene and Polyacrylate Melts under Thermal and Mechanical Stress. Macromolecules, 2013, 46, 8079-8091.	4.8	29
22	On-line SEC-MR-NMR hyphenation: optimization of sensitivity and selectivity on a 62 MHz benchtop NMR spectrometer. Polymer Chemistry, 2019, 10, 2230-2246.	3.9	28
23	Poly(sodium acrylate) hydrogels: synthesis of various network architectures, local molecular dynamics, salt partitioning, desalination and simulation. Soft Matter, 2019, 15, 9949-9964.	2.7	28
24	Low-field rheo-NMR: A novel combination of NMR relaxometry with high end shear rheology. Journal of Rheology, 2017, 61, 905-917.	2.6	27
25	Medium Resolution ¹Hâ€NMR at 62 MHz as a New Chemically Sensitive Online Detector for Sizeâ€Exclusion Chromatography (SECâ€“NMR). Macromolecular Rapid Communications, 2018, 39, e1700766.	3.9	27
26	Influence of molecular structure on the foamability of polypropylene: Linear and extensional rheological fingerprint. Journal of Cellular Plastics, 2018, 54, 515-543.	2.4	27
27	Fatigue behavior of polystyrene (PS) analyzed from the Fourier transform (FT) of stress response: First evidence of I2/1(N) and I3/1(N) as new fingerprints. Polymer Testing, 2017, 60, 343-350.	4.8	26
28	Polymer crystallinity and crystallization kinetics via benchtop 1H NMR relaxometry: Revisited method, data analysis, and experiments on common polymers. Polymer, 2018, 145, 162-173.	3.8	25
29	High performance liquid chromatography with mid-infrared detection based on a broadly tunable quantum cascade laser. Analyst, The, 2014, 139, 2057.	3.5	24
30	Fourier-Transform Rheology of Unvulcanized, Carbon Black Filled Styrene Butadiene Rubber. Macromolecular Materials and Engineering, 2016, 301, 457-468.	3.6	24
31	Correlation between polyethylene topology and melt flow instabilities by determining in-situ pressure fluctuations and applying advanced data analysis. Polymer, 2010, 51, 522-534.	3.8	23
32	Influence of molecular properties on the mechanical fatigue of polystyrene (PS) analyzed via WÃ¶hler curves and Fourier Transform rheology. Polymer, 2018, 138, 1-7.	3.8	22
33	Polymer motion as detected via dielectric spectra of 1,4-cis-polyisoprene under large amplitude oscillatory shear (LAOS). Journal of Non-Newtonian Fluid Mechanics, 2009, 160, 93-103.	2.4	21
34	Online Coupling of Sizeâ€Exclusion Chromatography and Lowâ€Field ¹H NMR Spectroscopy. Macromolecular Chemistry and Physics, 2012, 213, 1933-1943.	2.2	21
35	Transitions between Lamellar Orientations in Shear Flow. Macromolecules, 2018, 51, 4642-4659.	4.8	21
36	Development of a chemically sensitive online SEC detector based on FTIR spectroscopy. Polymer Chemistry, 2015, 6, 128-142.	3.9	19

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37	Polystyrene comb architectures as model systems for the optimized solution electrospinning of branched polymers. Polymer, 2016, 104, 240-250.	3.8	19
38	Polymer Crystallization Studied by Hyphenated Rheology Techniques: Rheoâ€NMR, Rheoâ€SAXS, and Rheoâ€Microscopy. Macromolecular Materials and Engineering, 2019, 304, 1800586.	3.6	19
39	ATRP-based polymers with modular ligation points under thermal and thermomechanical stress. Polymer Chemistry, 2015, 6, 2854-2868.	3.9	18
40	Online Coupling of Sizeâ€Exclusion Chromatography and IR Spectroscopy to Correlate Molecular Weight with Chemical Composition. Macromolecular Rapid Communications, 2012, 33, 1747-1752.	3.9	17
41	Aging of natural rubber studied via Fourier-transform rheology and double quantum NMR to correlate local chain dynamics with macroscopic mechanical response. Polymer, 2019, 181, 121804.	3.8	17
42	Molecularly Defined Polyolefin Vitrimers from Catalytic Insertion Polymerization. Journal of the American Chemical Society, 2022, 144, 13226-13233.	13.7	17
43	Diblock Copolymers with Similar Glass Transition Temperatures in Both Blocks for Comparing Shear Orientation Processes with DPD Computer Simulations. Macromolecular Chemistry and Physics, 2018, 219, 1700559.	2.2	15
44	Fatigue analysis of brittle polymers via Fourier transform of the stress. Mechanics of Materials, 2019, 137, 103100.	3.2	15
45	A New High Sensitivity System to Detect Instabilities During the Extrusion of Polymer Melts. Macromolecular Materials and Engineering, 2015, 300, 1141-1152.	3.6	14
46	Desalination of Seawater Using Cationic Poly(acrylamide) Hydrogels and Mechanical Forces for Separation. Macromolecular Materials and Engineering, 2020, 305, 2000383.	3.6	14
47	Effect of Topology and Molecular Properties on the Rheology and Fatigue Behavior of Solid Polystyrene/Polyisoprene Di- and Triblock Copolymers. Macromolecules, 2020, 53, 5572-5587.	4.8	14
48	Dynamics of Sodium Ions and Water in Swollen Superabsorbent Hydrogels as Studied by ²³Naâ€and ¹Hâ€NMR. Macromolecular Chemistry and Physics, 2019, 220, 1800350.	2.2	13
49	Poly(ethylene oxide)-Based Electrolytes for Solid-State Potassium Metal Batteries with a Prussian Blue Positive Electrode. ACS Applied Polymer Materials, 2022, 4, 2734-2746.	4.4	13
50	Structure of Superabsorbent Polyacrylate Hydrogels and Dynamics of Counterions by Nuclear Magnetic Resonance. Macromolecular Chemistry and Physics, 2019, 220, 1800525.	2.2	12
51	Effect of Side Chain Length in Polystyrene POMâ€“POMs on Melt Rheology and Solid Mechanical Fatigue. Macromolecules, 2022, 55, 5485-5496.	4.8	12
52	Ionogels as Polymer Electrolytes for Lithiumâ€“Metal Batteries: Comparison of Poly(ethylene glycol) Diacrylate and an Imidazolium-Based Ionic Liquid Crosslinker. ACS Applied Polymer Materials, 2022, 4, 2794-2805.	4.4	11
53	Topological Insight into Superabsorbent Hydrogel Network Structures: a ¹H Doubleâ€Quantum NMR Study. Macromolecular Chemistry and Physics, 2018, 219, 1800100.	2.2	10
54	A New Quantum Cascade IRâ€Laser Online Detector: Chemicalâ€Sensitive Sizeâ€Exclusion Chromatography Measurement at Unprecedented Low Levels. Macromolecular Rapid Communications, 2019, 40, e1900228.	3.9	9

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55	Cumulative nonlinearity as a parameter to quantify mechanical fatigue. Fatigue and Fracture of Engineering Materials and Structures, 2020, 43, 265-276.	3.4	9
56	Small and Medium Amplitude Oscillatory Shear Rheology of Model Branched Polystyrene (PS) Melts. Polymers, 2020, 12, 365.	4.5	9
57	Mechanoâ€Optical Characterization of Extrusion Flow Instabilities in Styreneâ€Butadiene Rubbers: Investigating the Influence of Molecular Properties and Die Geometry. Macromolecular Materials and Engineering, 2021, 306, 2000801.	3.6	9
58	Molecular Dynamics of Polymer Composites Using Rheology and Combined RheoNMR on the Example of TiO₂-Filled Poly(n-Alkyl Methacrylates) and Trans-1,4-Polyisoprene. Soft Materials, 2014, 12, S4-S13.	1.7	8
59	In Situ RheoNMR Correlation of Polymer Segmental Mobility with Mechanical Properties during Hydrogel Synthesis. Advanced Science, 2022, 9, e2104231.	11.2	8
60	Modeling the spatial characteristics of extrusion flow instabilities for styrene-butadiene rubbers: Investigating the influence of molecular weight distribution, molecular architecture, and temperature. Physics of Fluids, 2021, 33, .	4.0	7
61	Advanced Block Copolymer Design for Polymer Electrolytes: Prospects of Microphase Separation. Macromolecules, 2021, 54, 11101-11112.	4.8	7
62	Sustainable Synthesis of Nonâ€Isocyanate Polyurethanes Based on Renewable 2,3â€Butanediol. Macromolecular Chemistry and Physics, 2022, 223, .	2.2	7
63	Optimizing the Power Production in an Osmotic Engine via Microfluidic Fabricated and Surface Crosslinked Hydrogels Utilizing Fresh and Salt Water. Macromolecular Materials and Engineering, 2020, 305, 2000174.	3.6	6
64	Gradient-Induced Mechanical Vibration of Neural Interfaces During MRI. IEEE Transactions on Biomedical Engineering, 2020, 67, 915-923.	4.2	5
65	Universal Strainâ€Life Curve Exponents for Thermoplastics and Elastomers under Tensionâ€Tension and Torsion. Macromolecular Materials and Engineering, 2021, 306, 2100165.	3.6	5
66	Correlation between Macroscopic Elasticity and Chain Dynamics of Natural Rubber during Vulcanization as Determined by a Unique Rheo-NMR Combination. Macromolecules, 2021, 54, 6090-6100.	4.8	5
67	Oneâ€Pot Synthesis of Alternating (Ultraâ€High Molecular Weight) Multiblock Copolymers via a Combination of Anionic Polymerization and Polycondensation. Macromolecular Rapid Communications, 2021, 42, 2100448.	3.9	5
68	Molecular origin of the foam structure in model linear and comb polystyrenes: II. Volume expansion ratio. Polymer, 2020, 193, 122354.	3.8	5
69	Molecular origin of the foam structure in model linear and comb polystyrenes: I. Cell density. Polymer, 2020, 193, 122351.	3.8	3
70	Fourier transform fatigue analysis of the stress in tension/tension of HDPE and PA6. Polymer Engineering and Science, 2021, 61, 993-1006.	3.1	3
71	Reversible and Stable Hemiaminal Hydrogels from Polyvinylamine and Highly Reactive and Selective Bis(N-acylpiperidone)s. ACS Macro Letters, 2021, 10, 389-394.	4.8	3
72	Nonlinear mechanical behavior of elastomers under tension/tension fatigue deformation as determined by Fourier transform. Rheologica Acta, 2021, 60, 787-801.	2.4	3

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73	Synthesis of Superabsorbent Poly(vinylamine) Coreâ€“Shell Particles Monitored by Time-Domain NMR. Macromolecules, 2022, 55, 349-358.	4.8	3
74	Nonlinear Schapery viscoelastic material model for thermoplastic polymers. Journal of Applied Polymer Science, 2022, 139, .	2.6	3
75	Stability of Dielsâ€“Alder photoadducts in macromolecules. Polymer Chemistry, 2018, 9, 3850-3854.	3.9	2
76	Comb Polymers with Triazole Linkages under Thermal and Mechanical Stress. Macromolecules, 2019, 52, 420-431.	4.8	2
77	Charge Transport and Glassy Dynamics in Blends Based on 1-Butyl-3-vinylbenzylimidazolium Bis(trifluoromethanesulfonyl)imide Ionic Liquid and the Corresponding Polymer. Polymers, 2022, 14, 2423.	4.5	2
78	Quantifying separation energy with a modified Capillary Break-up Extensional Rheometer (CaBER) to study polymer solutions. Soft Materials, 2021, 19, 199-212.	1.7	0