

# Lorenz Faust

## List of Publications by Year in descending order

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93  
papers

3,367  
citations

236612

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149479

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docs citations

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times ranked

3060  
citing authors

#	ARTICLE	IF	CITATIONS
1	Inverse Vulcanization of Norbornenylsilanes: Soluble Polymers with Controllable Molecular Properties via Siloxane Bonds. <i>Angewandte Chemie - International Edition</i> , 2022, 61, .	7.2	11
2	Fourier transformation liquid chromatography: increasing sensitivity by a factor of 50. <i>Analyst</i> , The, 2022, 147, 1199-1212.	1.7	0
3	Poly(ethylene oxide)-Based Electrolytes for Solid-State Potassium Metal Batteries with a Prussian Blue Positive Electrode. <i>ACS Applied Polymer Materials</i> , 2022, 4, 2734-2746.	2.0	13
4	Ionogels as Polymer Electrolytes for Lithium-Metal Batteries: Comparison of Poly(ethylene glycol) Diacrylate and an Imidazolium-Based Ionic Liquid Crosslinker. <i>ACS Applied Polymer Materials</i> , 2022, 4, 2794-2805.	2.0	11
5	In Situ RheoNMR Correlation of Polymer Segmental Mobility with Mechanical Properties during Hydrogel Synthesis. <i>Advanced Science</i> , 2022, 9, e2104231.	5.6	8
6	Synthesis of Superabsorbent Poly(vinylamine) Core-Shell Particles Monitored by Time-Domain NMR. <i>Macromolecules</i> , 2022, 55, 349-358.	2.2	3
7	Nonlinear Schapery viscoelastic material model for thermoplastic polymers. <i>Journal of Applied Polymer Science</i> , 2022, 139, .	1.3	3
8	A Chemometric Approach to Assess the Rheological Properties of Durum Wheat Dough by Indirect FTIR Measurements. <i>Food and Bioprocess Technology</i> , 2022, 15, 1040-1054.	2.6	11
9	Sustainable Synthesis of Non-isocyanate Polyurethanes Based on Renewable 2,3-Butanediol. <i>Macromolecular Chemistry and Physics</i> , 2022, 223, .	1.1	7
10	Effect of Side Chain Length in Polystyrene POM-POMs on Melt Rheology and Solid Mechanical Fatigue. <i>Macromolecules</i> , 2022, 55, 5485-5496.	2.2	12
11	Molecularly Defined Polyolefin Vitrimers from Catalytic Insertion Polymerization. <i>Journal of the American Chemical Society</i> , 2022, 144, 13226-13233.	6.6	17
12	Quantifying separation energy with a modified Capillary Break-up Extensional Rheometer (CaBER) to study polymer solutions. <i>Soft Materials</i> , 2021, 19, 199-212.	0.8	0
13	Dual-faced borax mediated synthesis of self-healable hydrogels merging dynamic covalent bonding and micellization. <i>Polymer Chemistry</i> , 2021, 12, 361-369.	1.9	7
14	Investigation of the Porosity of Poly(sodium methacrylate) Hydrogels by $^1\text{H}$ -NMR T <sub>2</sub> -Relaxation and Inverse Size-Exclusion Chromatography. <i>Macromolecular Chemistry and Physics</i> , 2021, 222, 2000300.	1.1	3
15	Fourier transform fatigue analysis of the stress in tension/tension of HDPE and PA6. <i>Polymer Engineering and Science</i> , 2021, 61, 993-1006.	1.5	3
16	Reversible and Stable Hemiaminal Hydrogels from Polyvinylamine and Highly Reactive and Selective Bis( <i>N</i> -acylpiperidone)s. <i>ACS Macro Letters</i> , 2021, 10, 389-394.	2.3	3
17	Mechano-Optical Characterization of Extrusion Flow Instabilities in Styrene-Butadiene Rubbers: Investigating the Influence of Molecular Properties and Die Geometry. <i>Macromolecular Materials and Engineering</i> , 2021, 306, 2000801.	1.7	9
18	Universal Strain-Life Curve Exponents for Thermoplastics and Elastomers under Tension and Torsion. <i>Macromolecular Materials and Engineering</i> , 2021, 306, 2100165.	1.7	5

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19	Correlation between Macroscopic Elasticity and Chain Dynamics of Natural Rubber during Vulcanization as Determined by a Unique Rheo-NMR Combination. <i>Macromolecules</i> , 2021, 54, 6090-6100.	2.2	5
20	Rheo-IR: A combined setup for correlating chemical changes via FTIR spectroscopy and rheological properties in a strain-controlled rheometer. <i>Journal of Rheology</i> , 2021, 65, 681-693.	1.3	10
21	Styrene-Based Poly(ethylene oxide) Side-Chain Block Copolymers as Solid Polymer Electrolytes for High-Voltage Lithium-Metal Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 39257-39270.	4.0	34
22	Modeling the spatial characteristics of extrusion flow instabilities for styrene-butadiene rubbers: Investigating the influence of molecular weight distribution, molecular architecture, and temperature. <i>Physics of Fluids</i> , 2021, 33, .	1.6	7
23	One-Pot Synthesis of Alternating (Ultra-High Molecular Weight) Multiblock Copolymers via a Combination of Anionic Polymerization and Polycondensation. <i>Macromolecular Rapid Communications</i> , 2021, 42, 2100448.	2.0	5
24	Nonlinear mechanical behavior of elastomers under tension/tension fatigue deformation as determined by Fourier transform. <i>Rheologica Acta</i> , 2021, 60, 787-801.	1.1	3
25	Advanced Block Copolymer Design for Polymer Electrolytes: Prospects of Microphase Separation. <i>Macromolecules</i> , 2021, 54, 11101-11112.	2.2	7
26	Cumulative nonlinearity as a parameter to quantify mechanical fatigue. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2020, 43, 265-276.	1.7	9
27	Chondroinductive Alginate-Based Hydrogels Having Graphene Oxide for 3D Printed Scaffold Fabrication. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 4343-4357.	4.0	107
28	Analysis of the Local Mobility of RAFT Mediated Poly(acrylic acid) Networks via Low Field <sup>1</sup> H-NMR Techniques for Investigation of the Network Topology. <i>Macromolecular Chemistry and Physics</i> , 2020, 221, 1900387.	1.1	7
29	Rheological and mechanical properties of cellulose/LDPE composites using sustainable and fully renewable compatibilisers. <i>Journal of Applied Polymer Science</i> , 2020, 137, 48744.	1.3	12
30	Interlaboratory study on rheological properties of cement pastes and reference substances: comparability of measurements performed with different rheometers and measurement geometries. <i>Materials and Structures/Materiaux Et Constructions</i> , 2020, 53, 1.	1.3	43
31	Optimizing the Power Production in an Osmotic Engine via Microfluidic Fabricated and Surface Crosslinked Hydrogels Utilizing Fresh and Salt Water. <i>Macromolecular Materials and Engineering</i> , 2020, 305, 2000174.	1.7	6
32	Desalination of Seawater Using Cationic Poly(acrylamide) Hydrogels and Mechanical Forces for Separation. <i>Macromolecular Materials and Engineering</i> , 2020, 305, 2000383.	1.7	14
33	Effect of Topology and Molecular Properties on the Rheology and Fatigue Behavior of Solid Polystyrene/Polyisoprene Di- and Triblock Copolymers. <i>Macromolecules</i> , 2020, 53, 5572-5587.	2.2	14
34	Small and Medium Amplitude Oscillatory Shear Rheology of Model Branched Polystyrene (PS) Melts. <i>Polymers</i> , 2020, 12, 365.	2.0	9
35	A New Quantum Cascade IR-Laser Online Detector: Chemical-Sensitive Size-Exclusion Chromatography Measurement at Unprecedented Low Levels. <i>Macromolecular Rapid Communications</i> , 2019, 40, e1900228.	2.0	9
36	<sup>1</sup> H PFG-NMR Diffusion Study on a Sequence-Defined Macromolecule: Confirming Monodispersity. <i>Macromolecular Chemistry and Physics</i> , 2019, 220, 1900155.	1.1	4

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37	Self-Assembled Acrylic ABA Triblock Copolymer Hydrogels with Various Block Compositions: Water Absorbency, Rheology, and SAXS. <i>Macromolecular Chemistry and Physics</i> , 2019, 220, 1900093.	1.1	6
38	Structure of Superabsorbent Polyacrylate Hydrogels and Dynamics of Counterions by Nuclear Magnetic Resonance. <i>Macromolecular Chemistry and Physics</i> , 2019, 220, 1800525.	1.1	12
39	On-line SEC-MR-NMR hyphenation: optimization of sensitivity and selectivity on a 62 MHz benchtop NMR spectrometer. <i>Polymer Chemistry</i> , 2019, 10, 2230-2246.	1.9	28
40	Comb and Bottlebrush Polymers with Superior Rheological and Mechanical Properties. <i>Advanced Materials</i> , 2019, 31, e1806484.	11.1	117
41	Poly(sodium acrylate) hydrogels: synthesis of various network architectures, local molecular dynamics, salt partitioning, desalination and simulation. <i>Soft Matter</i> , 2019, 15, 9949-9964.	1.2	28
42	Polymer Crystallization Studied by Hyphenated Rheology Techniques: Rheo-NMR, Rheo-SAXS, and Rheo-Microscopy. <i>Macromolecular Materials and Engineering</i> , 2019, 304, 1800586.	1.7	19
43	Fourier-transform rheology of unvulcanized styrene butadiene rubber filled with increasingly silanized silica. <i>Soft Materials</i> , 2019, 17, 269-282.	0.8	12
44	Dynamics of Sodium Ions and Water in Swollen Superabsorbent Hydrogels as Studied by $^{23}\text{Na}$ - and $^1\text{H}$ -NMR. <i>Macromolecular Chemistry and Physics</i> , 2019, 220, 1800350.	1.1	13
45	Medium Resolution $^1\text{H}$ -NMR at 62 MHz as a New Chemically Sensitive Online Detector for Size-Exclusion Chromatography (SEC-NMR). <i>Macromolecular Rapid Communications</i> , 2018, 39, e1700766.	2.0	27
46	Polymer crystallinity and crystallization kinetics via benchtop $^1\text{H}$ NMR relaxometry: Revisited method, data analysis, and experiments on common polymers. <i>Polymer</i> , 2018, 145, 162-173.	1.8	25
47	Influence of molecular structure on the foamability of polypropylene: Linear and extensional rheological fingerprint. <i>Journal of Cellular Plastics</i> , 2018, 54, 515-543.	1.2	27
48	Online Detection of Functional Groups in SEC via Quantum Cascade Laser IR Spectroscopy. <i>Macromolecular Rapid Communications</i> , 2018, 39, 1700307.	2.0	9
49	Fatigue life prediction via the time-dependent evolution of linear and nonlinear mechanical parameters determined via Fourier transform of the stress. <i>Journal of Applied Polymer Science</i> , 2018, 135, 46634.	1.3	10
50	Topological Insight into Superabsorbent Hydrogel Network Structures: a $^1\text{H}$ Double-Quantum NMR Study. <i>Macromolecular Chemistry and Physics</i> , 2018, 219, 1800100.	1.1	10
51	Transitions between Lamellar Orientations in Shear Flow. <i>Macromolecules</i> , 2018, 51, 4642-4659.	2.2	21
52	The intrinsic mechanical nonlinearity 3Q0(%) of linear homopolymer melts. <i>AIP Conference Proceedings</i> , 2017, . .	0.3	2
53	Osmotic Engine: Translating Osmotic Pressure into Macroscopic Mechanical Force via Poly(Acrylic) Tj ETQq1 1 0.784314 rgBT /Overlock 5.6 41		
54	Low-field rheo-NMR: A novel combination of NMR relaxometry with high end shear rheology. <i>Journal of Rheology</i> , 2017, 61, 905-917.	1.3	27

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55	Energy Consumption for the Desalination of Salt Water Using Polyelectrolyte Hydrogels as the Separation Agent. <i>Macromolecular Chemistry and Physics</i> , 2017, 218, 1700237.	1.1	25
56	Osmotic Engine: Translating Osmotic Pressure into Macroscopic Mechanical Force via Poly(Acrylic) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	3.6	2
57	Diffusion in Polymer Solutions: Molecular Weight Distribution by PFGâ€NMR and Relation to SEC. <i>Macromolecular Chemistry and Physics</i> , 2017, 218, 1600440.	1.1	46
58	Linear and Nonlinear Rheology Combined with Dielectric Spectroscopy of Hybrid Polymer Nanocomposites for Semiconductive Applications. <i>Nanomaterials</i> , 2017, 7, 23.	1.9	31
59	Effect of Molecular Weight, Polydispersity, and Monomer of Linear Homopolymer Melts on the Intrinsic Mechanical Nonlinearity <sup>3</sup> Q<i>0</i> (‰) in MAOS. <i>Macromolecules</i> , 2016, 49, 3566-3579.	2.2	70
60	First normal stress difference and in-situ spectral dynamics in a high sensitivity extrusion die for capillary rheometry via the $\frac{1}{2}$ hole effectâ€™. <i>Polymer</i> , 2016, 104, 193-203.	1.8	13
61	Divergence of the third harmonic stress response to oscillatory strain approaching the glass transition. <i>Soft Matter</i> , 2016, 12, 8825-8832.	1.2	18
62	Polystyrene comb architectures as model systems for the optimized solution electrospinning of branched polymers. <i>Polymer</i> , 2016, 104, 240-250.	1.8	19
63	Hyphenated lowâ€field NMR techniques: combining NMR with NIR, GPC/SEC and rheometry. <i>Magnetic Resonance in Chemistry</i> , 2016, 54, 494-501.	1.1	38
64	A New High Sensitivity System to Detect Instabilities During the Extrusion of Polymer Melts. <i>Macromolecular Materials and Engineering</i> , 2015, 300, 1141-1152.	1.7	14
65	Development of a chemically sensitive online SEC detector based on FTIR spectroscopy. <i>Polymer Chemistry</i> , 2015, 6, 128-142.	1.9	19
66	Molecular Dynamics of Polymer Composites Using Rheology and Combined RheoNMR on the Example of TiO<sub>2</sub>-Filled Poly(n-Alkyl Methacrylates) and Trans-1,4-Polyisoprene. <i>Soft Materials</i> , 2014, 12, S4-S13.	0.8	8
67	Investigation of Polymerâ€Filler Interactions in TiO<sub>2</sub>-Filled Poly(n-Alkyl) Tj ETQq1 1 0.784314 rgBT /Overlock 1 851-858.	1.1	6
68	A rheological criterion to determine the percolation threshold in polymer nano-composites. <i>Rheologica Acta</i> , 2014, 53, 869-882.	1.1	63
69	High performance liquid chromatography with mid-infrared detection based on a broadly tunable quantum cascade laser. <i>Analyst, The</i> , 2014, 139, 2057.	1.7	24
70	Network Structure and Inhomogeneities of Model and Commercial Polyelectrolyte Hydrogels as Investigated by Low-Field Proton NMR Techniques. <i>Macromolecules</i> , 2014, 47, 4251-4265.	2.2	47
71	Intrinsic nonlinearity from LAOStrainâ€™ experiments on various strain- and stress-controlled rheometers: a quantitative comparison. <i>Rheologica Acta</i> , 2014, 53, 621-634.	1.1	36
72	Application of design of experiments, response surface methodology and partial least squares regression on nanocomposites synthesis. <i>Polymer Bulletin</i> , 2014, 71, 1961-1982.	1.7	13

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73	Effect of Polymer Structure and Incorporation of Nanoparticles on the Behavior of Syndiotactic Polypropylenes. <i>Macromolecular Chemistry and Physics</i> , 2013, 214, 2567-2578.	1.1	3
74	Numerical simulation results of the nonlinear coefficient $\langle i \rangle Q \langle /i \rangle$ from FT-Rheology using a single mode pom-pom model. <i>Journal of Rheology</i> , 2013, 57, 1-25.	1.3	36
75	From self-assembly of electrospun nanofibers to 3D cm thick hierarchical foams. <i>Soft Matter</i> , 2013, 9, 3164.	1.2	62
76	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. <i>Macromolecules</i> , 2013, 46, 4978-4994.	2.2	109
77	A Combined $\langle scp \rangle$ NMR $\langle /scp \rangle$ Relaxometry and Surface Instability Detection System for Polymer Melt Extrusion. <i>Macromolecular Materials and Engineering</i> , 2013, 298, 1124-1132.	1.7	16
78	Polystyrene Solutions: Characterization of Molecular Motional Modes by Spectrally Resolved Low- and High-Field NMR Relaxation. <i>Macromolecular Chemistry and Physics</i> , 2012, 213, 1833-1840.	1.1	12
79	Online Coupling of Size-Exclusion Chromatography and IR Spectroscopy to Correlate Molecular Weight with Chemical Composition. <i>Macromolecular Rapid Communications</i> , 2012, 33, 1747-1752.	2.0	17
80	Acyclic Triene Metathesis Polymerization of $\langle i \rangle$ Plukenetia Conophora $\langle /i \rangle$ Oil: Branched Polymers by Direct Polymerization of Renewable Resources. <i>Macromolecular Chemistry and Physics</i> , 2012, 213, 87-96.	1.1	20
81	Analysis of medium amplitude oscillatory shear data of entangled linear and model comb polymers. <i>Journal of Rheology</i> , 2011, 55, 495-516.	1.3	110
82	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. <i>Langmuir</i> , 2011, 27, 2880-2887.	1.6	46
83	A review of nonlinear oscillatory shear tests: Analysis and application of large amplitude oscillatory shear (LAOS). <i>Progress in Polymer Science</i> , 2011, 36, 1697-1753.	11.8	1,109
84	Nested dipolar Halbach arrays for the determination of magnetorheological properties at variable magnetic field. <i>Rheologica Acta</i> , 2011, 50, 441-459.	1.1	2
85	A Novel Approach for the Desalination of Seawater by Means of Reusable Poly(acrylic acid) Hydrogels and Mechanical Force. <i>Macromolecular Rapid Communications</i> , 2010, 31, 1337-1342.	2.0	55
86	Anionic Synthesis and Rheological Characterization of Poly( $\langle i \rangle$ p $\langle /i \rangle$ -methylstyrene) Model Comb Architectures with a Defined and Very Low Degree of Long Chain Branching. <i>Macromolecular Rapid Communications</i> , 2010, 31, 2140-2145.	2.0	36
87	Macromol. Rapid Commun. 15/2010. <i>Macromolecular Rapid Communications</i> , 2010, 31, .	2.0	0
88	Correlation between polyethylene topology and melt flow instabilities by determining in-situ pressure fluctuations and applying advanced data analysis. <i>Polymer</i> , 2010, 51, 522-534.	1.8	23
89	In situ Pressure Fluctuations of Polymer Melt Flow Instabilities: Experimental Evidence about their Origin and Dynamics. <i>Macromolecular Rapid Communications</i> , 2009, 30, 1799-1804.	2.0	19
90	Establishing a New Mechanical Nonlinear Coefficient $\langle i \rangle Q \langle /i \rangle$ from FT-Rheology: First Investigation of Entangled Linear and Comb Polymer Model Systems. <i>Macromolecules</i> , 2009, 42, 411-422.	2.2	258

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91	Establishing on a New Nonlinear Q Parameter from FT-Rheology First Investigation on Monodisperse Polymer Melts. AIP Conference Proceedings, 2008, , .	0.3	2
92	Increased torque transducer sensitivity via oversampling. Rheologica Acta, 2001, 40, 395-399.	1.1	73
93	A new slitâ€radial die for simultaneously measuring steady state shear viscosity and first normal stress difference of viscoelastic liquids via capillary rheometry. Journal of Applied Polymer Science, 0, , 52094.	1.3	1