Scott M Grayson

List of Publications by Year
in descending order

107 papers	6,164 citations	136740 32 h-index	69108 77 g-index
110 all docs	110 docs citations	110 times ranked	5569 citing authors

#	Article	IF	Citations
1	Convergent Dendrons and Dendrimers:â€‰ from Synthesis to Applications. Chemical Reviews, 2001, 101, 3819-3868.	23.0	1,547
2	An Efficient Route to Well-Defined Macrocyclic Polymers via â€œClickâ€•Cyclization. Journal of the American Chemical Society, 2006, 128, 4238-4239.	6.6	666
3	Synthetic approaches for the preparation of cyclic polymers. Chemical Society Reviews, 2009, 38, 2202.	18.7	441
4	The synthesis, properties and potential applications of cyclic polymers. Nature Chemistry, 2020, 12, 433-444.	6.6	242
5	Synthesis and Degradation Behavior of Cyclic Poly(Îµ-caprolactone). Macromolecules, 2009, 42, 6406-6413.	2.2	216
6	The Synthesis of Cyclic Poly(ethylene imine) and Exact Linear Analogues: An Evaluation of Gene Delivery Comparing Polymer Architectures. Journal of the American Chemical Society, 2015, 137, 6541-6549.	6.6	195
7	Efficient Preparation of Cyclic Poly(methyl acrylate)-block-poly(styrene) by Combination of Atom Transfer Radical Polymerization and Click Cyclization. Macromolecules, 2008, 41, 5082-5084.	2.2	161
8	Approaches for the preparation of non-linear amphiphilic polymers and their applications to drug delivery. Advanced Drug Delivery Reviews, 2012, 64, 852-865.	6.6	159
9	Cyclic polyesters: synthetic approaches and potential applications. Polymer Chemistry, 2011, 2, 289-299.	1.9	135
10	Divergent Synthesis of Dendronized Poly(p-hydroxystyrene). Macromolecules, 2001, 34, 6542-6544.	2.2	106
11	Exploring the Effect of Amphiphilic Polymer Architecture: Synthesis, Characterization, and Self-Assembly of Both Cyclic and Linear Poly(ethylene gylcol)-b-polycaprolactone. ACS Macro Letters, 2013, 2, 845-848.	2.3	105
12	Synthesis of Cyclic Dendronized Polymers via Divergent â€œGraft-fromâ€• and Convergent Click â€œGraft-toâ€• Routes: Preparation of Modular Toroidal Macromolecules. Journal of the American Chemical Society, 2011, 133, 13421-13429.	6.6	93
13	Architectural Differentiation of Linear and Cyclic Polymeric Isomers by Ion Mobility Spectrometry-Mass Spectrometry. Macromolecules, 2011, 44, 6915-6918.	2.2	87
14	New insights on the crystallization and melting of cyclic PCL chains on the basis ofÂa modified Thomsonâ€“Gibbs equation. Polymer, 2013, 54, 846-859.	1.8	82
15	A Comparative Study on the Crystallization Behavior of Analogous Linear and Cyclic Poly(Îµ-caprolactones). Macromolecules, 2011, 44, 1742-1746.	2.2	81
16	Synthesis and Surface Functionalization of Aliphatic Polyether Dendrons. Journal of the American Chemical Society, 2000, 122, 10335-10344.	6.6	77
17	MALDIâ^'TOF Mass Spectral Characterization of Polymers Containing an Azide Group: Evidence of Metastable Ions. Macromolecules, 2010, 43, 6225-6228.	2.2	75
18	Hydrogel Biosensor Array Platform Indexed by Shape. Chemistry of Materials, 2004, 16, 5574-5580.	3.2	73

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19	Nucleation and Antinucleation Effects of Functionalized Carbon Nanotubes on Cyclic and Linear Poly(Îµ-caprolactones). Macromolecules, 2014, 47, 3553-3566.	2.2	70
20	Dendronized Supramolecular Nanocapsules: pH Independent, Water-Soluble, Deep-Cavity Cavitands Assemble via the Hydrophobic Effect. Journal of the American Chemical Society, 2008, 130, 14430-14431.	6.6	68
21	The role of macromolecular architecture in passively targeted polymeric carriers for drug and gene delivery. Journal of Drug Targeting, 2008, 16, 329-356.	2.1	68
22	Major Impact of Cyclic Chain Topology on the T_g-Confinement Effect of Supported Thin Films of Polystyrene. Macromolecules, 2016, 49, 257-268.	2.2	67
23	Synthesis of Amphiphilic Star Block Copolymers and Their Evaluation as Transdermal Carriers. Biomacromolecules, 2011, 12, 898-906.	2.6	56
24	Organocatalyzed ROP of a Glucopyranoside Derived Five-Membered Cyclic Carbonate. Macromolecules, 2018, 51, 1787-1797.	2.2	52
25	Thiolâ^'Ene Click Functionalization and Subsequent Polymerization of 2-Oxazoline Monomers. Macromolecules, 2010, 43, 4081-4090.	2.2	48
26	Coreâ€shell structured poly(glycidyl methacrylate)/BaTiO₃ nanocomposites prepared by surfaceâ€initiated atom transfer radical polymerization: A novel material for high energy density dielectric storage. Journal of Polymer Science Part A, 2015, 53, 719-728.	2.5	45
27	Comparing crystallization rates between linear and cyclic poly(epsilon-caprolactones) via fast-scan chip-calorimeter measurements. Polymer, 2015, 63, 34-40.	1.8	45
28	Synthesis of narrow-polydispersity degradable dendronized aliphatic polyesters. Journal of Polymer Science Part A, 2004, 42, 3563-3578.	2.5	40
29	Synthesis of cyclic amphiphilic homopolymers and their potential application as polymeric micelles. Polymer Chemistry, 2012, 3, 1846-1855.	1.9	39
30	Differentiation of Linear and Cyclic Polymer Architectures by MALDI Tandem Mass Spectrometry (MALDI-MS²). Journal of the American Society for Mass Spectrometry, 2013, 24, 74-82.	1.2	38
31	The identification of synthetic homopolymer end groups and verification of their transformations using MALDIâ€TOF mass spectrometry. Journal of Mass Spectrometry, 2010, 45, 587-611.	0.7	36
32	Scaling Exponent and Effective Interactions in Linear and Cyclic Polymer Solutions: Theory, Simulations, and Experiments. Macromolecules, 2019, 52, 4579-4589.	2.2	35
33	Surface-initiated atom transfer radical polymerization of glycidyl methacrylate and styrene from boron nitride nanotubes. Journal of Materials Chemistry C, 2014, 2, 4073-4079.	2.7	33
34	Suppression of the Fragility-Confinement Effect via Low Molecular Weight Cyclic or Ring Polymer Topology. Macromolecules, 2017, 50, 1147-1154.	2.2	33
35	It is Better with Salt: Aqueous Ring-Opening Metathesis Polymerization at Neutral pH. Journal of the American Chemical Society, 2020, 142, 13878-13885.	6.6	33
36	Synthesis, purification, and characterization of â€œperfectâ€•star polymers via â€œClickâ€•coupling. Journal of Polymer Science Part A, 2012, 50, 1086-1101.	2.5	32

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37	Determining the Origins of Impurities during Azideâ€“Alkyne Click Cyclization of Polystyrene. Macromolecules, 2016, 49, 4369-4372.	2.2	31
38	Use of Ion Mobility Spectrometryâ€“Mass Spectrometry to Elucidate Architectural Dispersity within Star Polymers. ACS Macro Letters, 2015, 4, 778-782.	2.3	30
39	Core-shell like structured barium zirconium titanate-barium calcium titanateâ€“poly(methyl) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf	1.8	29
40	The influence of small amounts of linear polycaprolactone chains on the crystallization of cyclic analogue molecules. RSC Advances, 2016, 6, 48049-48063.	1.7	29
41	Nonâ€monotonic molecular weight dependence of crystallization rates of linear and cyclic poly(epsilonâ€caprolactone)s in a wide temperature range. Polymer International, 2016, 65, 1074-1079.	1.6	28
42	Evaluation of redox-responsive disulfide cross-linked poly(hydroxyethyl methacrylate) hydrogels. Polymer, 2011, 52, 5262-5270.	1.8	27
43	Neutral linear amphiphilic homopolymers prepared by atom transfer radical polymerization. Polymer Chemistry, 2014, 5, 622-629.	1.9	24
44	Detection, Quantification, and â€œClick-Scavengingâ€•of Impurities in Cyclic Poly(glycidyl phenyl ether) Obtained by Zwitterionic Ring-Expansion Polymerization with B(C₆F₅)₃. Macromolecules, 2017, 50, 1870-1881.	2.2	24
45	A New Approach to Heterofunctionalized Dendrimers:â€‰ A Versatile Triallyl Chloride Core. Organic Letters, 2002, 4, 3171-3174.	2.4	23
46	Molecular Weight Control via Cross Metathesis in Photoâ€Redox Mediated Ringâ€Opening Metathesis Polymerization. Angewandte Chemie - International Edition, 2020, 59, 9074-9079.	7.2	23
47	Advantages of Monodisperse and Chemically Robust â€œSpheriCalâ€•Polyester Dendrimers as a â€œUniversalâ€• MS Calibrant. Journal of the American Society for Mass Spectrometry, 2014, 25, 303-309.	1.2	22
48	Efficient Synthesis of High Purity Homoâ€arm and Miktoâ€arm Poly(ethylene glycol) Stars Using Epoxide and Azideâ€“Alkyne Coupling Chemistry. Macromolecular Rapid Communications, 2014, 35, 146-151.	2.0	21
49	Hollow amphiphilic crosslinked nanocapsules from sacrificial silica nanoparticle templates and their application as dispersants for oil spill remediation. Polymer Chemistry, 2017, 8, 5129-5138.	1.9	21
50	Synthesis and Properties of Diazopiperidiones for Use in Nonchemically Amplified Deep UV Photoresists. Chemistry of Materials, 2004, 16, 1770-1774.	3.2	20
51	Evaluation of Amphiphilic Star/Linearâ€“Dendritic Polymer Reverse Micelles for Transdermal Drug Delivery: Directing Carrier Properties by Tailoring Core versus Peripheral Branching. Biomacromolecules, 2018, 19, 3163-3176.	2.6	20
52	Investigation of Lysine-Functionalized Dendrimers as Dichlorvos Detoxification Agents. Biomacromolecules, 2015, 16, 3434-3444.	2.6	18
53	Photonic curing of aromatic thiolâ€“ene click dielectric capacitors via inkjet printing. Journal of Materials Chemistry A, 2014, 2, 17380-17386.	5.2	17
54	Determination of polyethylene glycol end group functionalities by combination of selective reactions and characterization by matrix assisted laser desorption/ionization time-of-flight mass spectrometry. Analytica Chimica Acta, 2014, 816, 28-40.	2.6	17

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55	Click-In Ferroelectric Nanoparticles for Dielectric Energy Storage. ACS Applied Materials & Interfaces, 2015, 7, 17819-17825.	4.0	17
56	Comparison of Cross-Linked Branched and Linear Poly(ethylene imine) Microgel Microstructures and Their Impact in Antimicrobial Behavior, Copper Chelation, and Carbon Dioxide Capture. ACS Applied Polymer Materials, 2020, 2, 826-836.	2.0	16
57	Polymers kept in the loop. Nature Chemistry, 2009, 1, 178-179.	6.6	15
58	Molecular Dynamics Simulations of Linear and Cyclic Amphiphilic Polymers in Aqueous and Organic Environments. Journal of Physical Chemistry B, 2014, 118, 6491-6497.	1.2	15
59	MALDI-ToF MS Study of Macrocyclic Polyethers Generated by Electrophilic Zwitterionic Ring Expansion Polymerization of Monosubstituted Epoxides with B(C₆F₅)₃. Macromolecules, 2019, 52, 6369-6381.	2.2	14
60	Amphiphilic hyperbranched polyglycerol-block-polycaprolactone copolymer-grafted nanoparticles with improved encapsulation properties. Reactive and Functional Polymers, 2016, 102, 39-46.	2.0	13
61	Determining Sequence Fidelity in Repeating Sequence Poly(lactic-co-glycolic acid)s. Macromolecules, 2017, 50, 550-560.	2.2	13
62	The characterization of dendronized poly(ethylene glycol)s and poly(ethylene glycol) multi-arm stars using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. Analytica Chimica Acta, 2014, 808, 175-189.	2.6	12
63	Use of MALDI-ToF MS to elucidate the structure of oligomeric impurities formed during â€˜clickâ€™ cyclization of polystyrene. Reactive and Functional Polymers, 2014, 80, 83-94.	2.0	12
64	Suppression of Melt-Induced Dewetting in Cyclic Poly(Îµ-caprolactone) Thin Films. Macromolecules, 2017, 50, 9852-9856.	2.2	12
65	Synthesis and Self-Assembly of Amphiphilic Star/Linearâ€“Dendritic Polymers: Effect of Core versus Peripheral Branching on Reverse Micelle Aggregation. Biomacromolecules, 2018, 19, 3177-3189.	2.6	12
66	Linearâ€Dendritic Alternating Copolymers. Angewandte Chemie - International Edition, 2019, 58, 10572-10576.	7.2	12
67	The Potential of Amine-Containing Dendrimer Mass Standards for Internal Calibration of Peptides. European Journal of Mass Spectrometry, 2015, 21, 747-752.	0.5	9
68	Water-soluble PEGylated silicon nanoparticles and their assembly into swellable nanoparticle aggregates. Journal of Nanoparticle Research, 2015, 17, 1.	0.8	9
69	Design of Amphiphilic Polymers via Molecular Dynamics Simulations. Journal of Physical Chemistry B, 2016, 120, 10603-10610.	1.2	9
70	Synthesis of Macrocyclic Poly(glycidyl phenyl ether) with an Inverted-Dipole Microstructure via Ring Closure of Two-Arm Linear Precursors Obtained by Initiation with t-BuP4/Water. Macromolecules, 2020, 53, 10005-10014.	2.2	9
71	Synthesis and Characterization of Norbornanediol Isomers and Their Fluorinated Analogues. Journal of Organic Chemistry, 2006, 71, 341-344.	1.7	8
72	Dendronized cavitands: A step towards a synthetic viral capsid?. Soft Matter, 2010, 6, 1377.	1.2	8

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73	Application of Time-Dependent MALDI-TOF Mass Spectral Analysis To Elucidate Chain Transfer Mechanism during Cationic Polymerization of Oxazoline Monomers Containing Thioethers. Macromolecules, 2010, 43, 10152-10156.	2.2	8
74	Iodine-Containing Mass-Defect-Tuned Dendrimers for Use as Internal Mass Spectrometry Calibrants. Journal of the American Society for Mass Spectrometry, 2018, 29, 490-500.	1.2	8
75	Characterization of Synthetic Polymers via Matrix Assisted Laser Desorption Ionization Time of Flight (MALDI-TOF) Mass Spectrometry. Journal of Visualized Experiments, 2018, , .	0.2	8
76	Limitations of ion mobility spectrometryâ€•mass spectrometry for the relative quantification of architectural isomeric polymers: A case study. Rapid Communications in Mass Spectrometry, 2020, 34, e8660.	0.7	8
77	Toxicity assessment of a novel oil dispersant based on silica nanoparticles using Fathead minnow. Aquatic Toxicology, 2020, 229, 105653.	1.9	8
78	THE RING-CLOSURE APPROACH FOR SYNTHESIZING CYCLIC POLYMERS. , 2013, , 157-197.		7
79	Facile oneâ€pot method of initiator fixation for surfaceâ€initiated atom transfer radical polymerization on carbon hard spheres. Journal of Polymer Science Part A, 2013, 51, 3314-3322.	2.5	7
80	Modular amphiphilic copolymer-grafted nanoparticles: â€œnanoparticle micelleâ€•behavior enhances utility as dispersants. Polymer Chemistry, 2015, 6, 7749-7757.	1.9	7
81	Synthesis and characterization of polylactideâ€PAMAM â€œJanusâ€typeâ€•linearâ€dendritic hybrids. Journal of Polymer Science Part A, 2019, 57, 1448-1459.	2.5	7
82	Mass spectrometry investigation into the oxidative degradation of poly(ethylene glycol). Polymer Degradation and Stability, 2021, 183, 109388.	2.7	7
83	Synthesis and Reactivity of 3-Diazo-4-oxocoumarins for Photolithographic Applications. Chemistry of Materials, 2004, 16, 1763-1769.	3.2	6
84	Divergent Dendronization of Deepâ€Cavity Cavitands to Tune Host Solubility. Israel Journal of Chemistry, 2009, 49, 31-40.	1.0	6
85	Synthesis of a pH-independent bifurcated amphiphile. Tetrahedron Letters, 2008, 49, 2091-2094.	0.7	5
86	Elucidating Branching Topology and Branch Lengths in Star-Branched Polymers by Tandem Mass Spectrometry. Journal of the American Society for Mass Spectrometry, 2019, 30, 1981-1991.	1.2	5
87	Molecular Weight Control via Cross Metathesis in Photoâ€Redox Mediated Ringâ€Opening Metathesis Polymerization. Angewandte Chemie, 2020, 132, 9159-9164.	1.6	5
88	Feature Multiplexingâ€”Improving the Efficiency of Microarray Devices. Angewandte Chemie - International Edition, 2006, 45, 3338-3341.	7.2	4
89	Polymer grafted hard carbon microspheres at an oil/water interface. Journal of Colloid and Interface Science, 2016, 470, 31-38.	5.0	4
90	MALDI-TOF MS investigation of the unconventional termination of living polyoxazoline with ammonia. Journal of Polymer Science Part A, 2017, 55, 1303-1312.	2.5	4

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91	Linearâ€Dendritic Alternating Copolymers. Angewandte Chemie, 2019, 131, 10682-10686.	1.6	4
92	Synthesis of poly(caprolactone)-block-poly[oligo(ethylene glycol)methyl methacrylate] amphiphilic grafted nanoparticles (AGNs) as improved oil dispersants. Polymer Chemistry, 2021, 12, 4758-4769.	1.9	4
93	Dielectric Properties of UV Cured Thick Film Polymer Networks through High Power Xenon Flash Lamp Curing. Materials Research Society Symposia Proceedings, 2014, 1630, 1.	0.1	3
94	First principles modeling of nanoparticleâ€“polymer surface functionalizations for improved capacitive energy storage. Journal of Materials Science, 2020, 55, 15813-15825.	1.7	3
95	A highly efficient metal-free protocol for the synthesis of linear polydicyclopentadiene. Polymer Chemistry, 2021, 12, 2860-2867.	1.9	3
96	SpheriCal^{Â®}â€ESI: A dendrimerâ€based nineâ€point calibration solution ranging from m/z 273 to 1716 for electrospray ionization mass spectrometry peptide analysis. Rapid Communications in Mass Spectrometry, 2021, 35, e9035.	0.7	3
97	A Simple Visualization of Double Bond Properties: Chemical Reactivity and UV Fluorescence. Journal of Chemical Education, 2012, 89, 925-927.	1.1	2
98	Solution size variation of linear and dendritic bis-MPA analogs using DOSY-¹H NMR. Polymer Chemistry, 2021, 12, 1507-1517.	1.9	2
99	Oil Encapsulation Advantages of Amphiphilic Polymer-Grafted Silica Nanoparticle Systems. ACS Applied Polymer Materials, 0, , .	2.0	2
100	The Cyclization and Functionalization of Styrenic Polymers. ACS Symposium Series, 2008, , 37-50.	0.5	1
101	Synthesis and Characterization of Linear, Homopolyester, Benzoyl-Protected Bis-MPA. Macromolecules, 2020, 53, 6608-6618.	2.2	1
102	Succinylated isoniazid potential prodrug: Design of Experiments (DoE) for synthesis optimization and computational study of the reaction mechanism by DFT calculations. Journal of Molecular Structure, 2022, 1254, 132323.	1.8	1
103	Separation, identification, and confirmation of cyclic and tadpole macromolecules via UPLC-MS/MS. Analyst, The, 2022, 147, 2089-2096.	1.7	1
104	Selective monobenzylation of 2,2-bis(hydroxymethyl)propionic acid (bis-MPA) to yield an AB linear monomer and analogous linear oligomers. Tetrahedron Letters, 2020, 61, 152016.	0.7	0
105	Insights and comparison of structureâ€“bulk property relationships in low generation hydroxylated polyester dendrimer and hyperbranched polymer prepared from bis-MPA monomer. Polymer, 2021, 231, 124097.	1.8	0
106	Syntheses and crystal structures of 2,2,5-trimethyl-1,3-dioxane-5-carboxylic acid and 2,2,5-trimethyl-1,3-dioxane-5-carboxylic anhydride. Acta Crystallographica Section E: Crystallographic Communications, 2020, 76, 86-90.	0.2	0
107	Physical Evidence of Oil Uptake and Toxicity Assessment of Amphiphilic Grafted Nanoparticles Used as Oil Dispersants. Environmental Science & Technology, 2022, , .	4.6	0