Eric A Appel

List of Publications by Year
in descending order

101 papers	10,021 citations	57758 44 h-index	36028 97 g-index
122 all docs	122 docs citations	122 times ranked	11987 citing authors

#	Article	IF	Citations
1	Supramolecular biomaterials. Nature Materials, 2016, 15, 13-26.	27.5	1,226
2	Supramolecular polymeric hydrogels. Chemical Society Reviews, 2012, 41, 6195.	38.1	988
3	Supramolecular Cross-Linked Networks via Hostâ^'Guest Complexation with Cucurbit[8]uril. Journal of the American Chemical Society, 2010, 132, 14251-14260.	13.7	547
4	Mechanistic understanding of in vivo protein corona formation on polymeric nanoparticles and impact on pharmacokinetics. Nature Communications, 2017, 8, 777.	12.8	507
5	Injectable Selfâ€Healing Glucoseâ€Responsive Hydrogels with pHâ€Regulated Mechanical Properties. Advanced Materials, 2016, 28, 86-91.	21.0	466
6	Translational Applications of Hydrogels. Chemical Reviews, 2021, 121, 11385-11457.	47.7	438
7	Self-assembled hydrogels utilizing polymerâ€“nanoparticle interactions. Nature Communications, 2015, 6, 6295.	12.8	425
8	Ultrahigh-Water-Content Supramolecular Hydrogels Exhibiting Multistimuli Responsiveness. Journal of the American Chemical Society, 2012, 134, 11767-11773.	13.7	409
9	Healable, Stable and Stiff Hydrogels: Combining Conflicting Properties Using Dynamic and Selective Threeâ€Component Recognition with Reinforcing Cellulose Nanorods. Advanced Functional Materials, 2014, 24, 2706-2713.	14.9	227
10	Triply Triggered Doxorubicin Release From Supramolecular Nanocontainers. Biomacromolecules, 2012, 13, 84-91.	5.4	174
11	Synthesis and Biological Evaluation of Ionizable Lipid Materials for the In Vivo Delivery of Messenger RNA to B Lymphocytes. Advanced Materials, 2017, 29, 1606944.	21.0	174
12	Bioinspired Alkenyl Amino Alcohol Ionizable Lipid Materials for Highly Potent In Vivo mRNA Delivery. Advanced Materials, 2016, 28, 2939-2943.	21.0	172
13	Supramolecular PEGylation of biopharmaceuticals. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14189-14194.	7.1	171
14	Use of a supramolecular polymeric hydrogel as an effective post-operative pericardial adhesion barrier. Nature Biomedical Engineering, 2019, 3, 611-620.	22.5	154
15	The COVID-19 lockdowns: a window into the Earth System. Nature Reviews Earth & Environment, 2020, 1, 470-481.	29.7	153
16	Formation of Singleâ€Chain Polymer Nanoparticles in Water through Hostâ€“Guest Interactions. Angewandte Chemie - International Edition, 2012, 51, 4185-4189.	13.8	145
17	Sustained release of proteins from high water content supramolecular polymer hydrogels. Biomaterials, 2012, 33, 4646-4652.	11.4	139
18	Designing spatial and temporal control of vaccine responses. Nature Reviews Materials, 2022, 7, 174-195.	48.7	130

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19	Supramolecular polymeric biomaterials. Biomaterials Science, 2018, 6, 10-37.	5.4	129
20	A Multiscale Model for Solute Diffusion in Hydrogels. Macromolecules, 2019, 52, 6889-6897.	4.8	126
21	Injectable and Glucose-Responsive Hydrogels Based on Boronic Acidâ€“Glucose Complexation. Langmuir, 2016, 32, 8743-8747.	3.5	125
22	Injectable Hydrogels for Sustained Codelivery of Subunit Vaccines Enhance Humoral Immunity. ACS Central Science, 2020, 6, 1800-1812.	11.3	113
23	Simple Approach to Stabilized Micelles Employing Miktoarm Terpolymers and Stereocomplexes with Application in Paclitaxel Delivery. Biomacromolecules, 2009, 10, 1460-1468.	5.4	111
24	Activation Energies Control the Macroscopic Properties of Physically Crossâ€Linked Materials. Angewandte Chemie - International Edition, 2014, 53, 10038-10043.	13.8	98
25	Exploiting Electrostatic Interactions in Polymerâ€“Nanoparticle Hydrogels. ACS Macro Letters, 2015, 4, 848-852.	4.8	95
26	Supramolecular gold nanoparticleâ€“polymer composites formed in water with cucurbit[8]uril. Chemical Communications, 2011, 47, 164-166.	4.1	89
27	Enhanced stability and activity of temozolomide in primary glioblastoma multiforme cells with cucurbit[n]uril. Chemical Communications, 2012, 48, 9843.	4.1	80
28	Triggered insulin release studies of triply responsive supramolecular micelles. Polymer Chemistry, 2012, 3, 3180.	3.9	80
29	Delivery of CAR-T cells in a transient injectable stimulatory hydrogel niche improves treatment of solid tumors. Science Advances, 2022, 8, eabn8264.	10.3	80
30	Scalable manufacturing of biomimetic moldable hydrogels for industrial applications. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14255-14260.	7.1	78
31	The control of cargo release from physically crosslinked hydrogels by crosslink dynamics. Biomaterials, 2014, 35, 9897-9903.	11.4	77
32	Metastable single-chain polymer nanoparticles prepared by dynamic cross-linking with nor-seco-cucurbit[10]uril. Chemical Science, 2012, 3, 2278.	7.4	74
33	Postpolymerization Modification of Hydroxyl-Functionalized Polymers with Isocyanates. Macromolecules, 2011, 44, 4828-4835.	4.8	73
34	Towards brain-tissue-like biomaterials. Nature Communications, 2020, 11, 3423.	12.8	71
35	A Quantitative Description for Designing the Extrudability of Shearâ€Thinning Physical Hydrogels. Macromolecular Bioscience, 2021, 21, e2000295.	4.1	68
36	The living interface between synthetic biology and biomaterial design. Nature Materials, 2022, 21, 390-397.	27.5	68

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37	Injectable Polymerâ€“Nanoparticle Hydrogels for Local Immune Cell Recruitment. Biomacromolecules, 2019, 20, 4430-4436.	5.4	58
38	Decoupled Associative and Dissociative Processes in Strong yet Highly Dynamic Hostâ€“Guest Complexes. Journal of the American Chemical Society, 2017, 139, 12985-12993.	13.7	56
39	Isthmin-1 is an adipokine that promotes glucose uptake and improves glucose tolerance and hepatic steatosis. Cell Metabolism, 2021, 33, 1836-1852.e11.	16.2	56
40	Combinatorial Polyacrylamide Hydrogels for Preventing Biofouling on Implantable Biosensors. Advanced Materials, 2022, 34, e2109764.	21.0	56
41	Dynamically crosslinked materials via recognition of amino acids by cucurbit[8]uril. Journal of Materials Chemistry B, 2013, 1, 2904.	5.8	55
42	Injectable supramolecular polymerâ€“nanoparticle hydrogels enhance human mesenchymal stem cell delivery. Bioengineering and Translational Medicine, 2020, 5, e10147.	7.1	55
43	Physical networks from entropy-driven non-covalent interactions. Nature Communications, 2021, 12, 746.	12.8	55
44	A co-formulation of supramolecularly stabilized insulin and pramlintide enhances mealtime glucagon suppression in diabetic pigs. Nature Biomedical Engineering, 2020, 4, 507-517.	22.5	52
45	Hierarchical Supermolecular Structures for Sustained Drug Release. Small, 2009, 5, 1504-1507.	10.0	49
46	Distinguishing relaxation dynamics in transiently crosslinked polymeric networks. Polymer Chemistry, 2017, 8, 5336-5343.	3.9	49
47	Nonâ€Newtonian Polymerâ€“Nanoparticle Hydrogels Enhance Cell Viability during Injection. Macromolecular Bioscience, 2019, 19, e1800275.	4.1	49
48	Hydrogelâ€Based Slow Release of a Receptorâ€Binding Domain Subunit Vaccine Elicits Neutralizing Antibody Responses Against SARSâ€CoVâ€2. Advanced Materials, 2021, 33, e2104362.	21.0	48
49	High molecular weight polyacrylamides by atom transfer radical polymerization: Enabling advancements in waterâ€based applications. Journal of Polymer Science Part A, 2012, 50, 181-186.	2.3	47
50	A Biocompatible Therapeutic Catheterâ€Deliverable Hydrogel for In Situ Tissue Engineering. Advanced Healthcare Materials, 2019, 8, e1801147.	7.6	47
51	An ultrafast insulin formulation enabled by high-throughput screening of engineered polymeric excipients. Science Translational Medicine, 2020, 12, .	12.4	46
52	Nanoparticles Presenting Potent TLR7/8 Agonists Enhance Anti-PD-L1 Immunotherapy in Cancer Treatment. Biomacromolecules, 2020, 21, 3704-3712.	5.4	44
53	A fluorescence sandwich immunoassay for the real-time continuous detection of glucose and insulin in live animals. Nature Biomedical Engineering, 2021, 5, 53-63.	22.5	44
54	Toward biodegradable nanogel star polymers via organocatalytic ROP. Chemical Communications, 2012, 48, 6163.	4.1	39

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55	Prolonged Codelivery of Hemagglutinin and a TLR7/8 Agonist in a Supramolecular Polymerâ€“Nanoparticle Hydrogel Enhances Potency and Breadth of Influenza Vaccination. ACS Biomaterials Science and Engineering, 2021, 7, 1889-1899.	5.2	38
56	Sustained delivery approaches to improving adaptive immune responses. Advanced Drug Delivery Reviews, 2022, 187, 114401.	13.7	35
57	Formation of Cucurbit[8]uril-Based Supramolecular Hydrogel Beads Using Droplet-Based Microfluidics. Biomacromolecules, 2015, 16, 2743-2749.	5.4	34
58	miR-106aâ€“363 cluster in extracellular vesicles promotes endogenous myocardial repair via Notch3 pathway in ischemic heart injury. Basic Research in Cardiology, 2021, 116, 19.	5.9	34
59	Lipid Nanodiscs via Ordered Copolymers. CheM, 2020, 6, 2782-2795.	11.7	32
60	Self-Assembled, Dilution-Responsive Hydrogels for Enhanced Thermal Stability of Insulin Biopharmaceuticals. ACS Biomaterials Science and Engineering, 2021, 7, 4221-4229.	5.2	29
61	Gelation and yielding behavior of <scp>polymerâ€“nanoparticle</scp> hydrogels. Journal of Polymer Science, 2021, 59, 2854-2866.	3.8	29
62	Wildfire prevention through prophylactic treatment of high-risk landscapes using viscoelastic retardant fluids. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 20820-20827.	7.1	27
63	Stable Monomeric Insulin Formulations Enabled by Supramolecular PEGylation of Insulin Analogues. Advanced Therapeutics, 2020, 3, 1900094.	3.2	26
64	Multi-phase catheter-injectable hydrogel enables dual-stage protein-engineered cytokine release to mitigate adverse left ventricular remodeling following myocardial infarction in a small animal model and a large animal model. Cytokine, 2020, 127, 154974.	3.2	26
65	Real-time monitoring of drug pharmacokinetics within tumor tissue in live animals. Science Advances, 2022, 8, eabk2901.	10.3	26
66	Modulation of injectable hydrogel properties for slow coâ€delivery of influenza subunit vaccine components enhance the potency of humoral immunity. Journal of Biomedical Materials Research - Part A, 2021, 109, 2173-2186.	4.0	24
67	Engineering the Mechanical Properties of Polymer Networks with Precise Doping of Primary Defects. ACS Applied Materials & Interfaces, 2017, 9, 42217-42224.	8.0	23
68	Structural considerations for physical hydrogels based on polymerâ€“nanoparticle interactions. Molecular Systems Design and Engineering, 2020, 5, 401-407.	3.4	22
69	A human mission to Mars: Predicting the bone mineral density loss of astronauts. PLoS ONE, 2020, 15, e0226434.	2.5	22
70	Synthesis of Conducting Polymerâ€“Metal Nanoparticle Hybrids Exploiting RAFT Polymerization. ACS Macro Letters, 2015, 4, 255-259.	4.8	21
71	Block copolymer composition drives function of selfâ€assembled nanoparticles for delivery of smallâ€molecule cargo. Journal of Polymer Science Part A, 2019, 57, 1322-1332.	2.3	21
72	Engineered biomaterials for heart disease. Current Opinion in Biotechnology, 2020, 66, 246-254.	6.6	21

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73	MRBLES 2.0: High-throughput generation of chemically functionalized spectrally and magnetically encoded hydrogel beads using a simple single-layer microfluidic device. Microsystems and Nanoengineering, 2020, 6, 109.	7.0	18
74	More than a fertilizer: wastewater-derived struvite as a high value, sustainable fire retardant. Green Chemistry, 2021, 23, 4510-4523.	9.0	18
75	Injectable liposome-based supramolecular hydrogels for the programmable release of multiple protein drugs. Matter, 2022, 5, 1816-1838.	10.0	18
76	Dynamic Hydrogels for Prevention of Postâ€Operative Peritoneal Adhesions. Advanced Therapeutics, 2021, 4, 2000242.	3.2	17
77	Activation Energies Control the Macroscopic Properties of Physically Crossâ€Linked Materials. Angewandte Chemie, 2014, 126, 10202-10207.	2.0	16
78	Single-Chain Polymeric Nanocarriers: A Platform for Determining Structureâ€“Function Correlations in the Delivery of Molecular Cargo. Biomacromolecules, 2017, 18, 1434-1439.	5.4	16
79	Controlling properties of thermogels by tuning critical solution behaviour of ternary copolymers. Polymer Chemistry, 2021, 12, 1918-1923.	3.9	15
80	Injectable Supramolecular Polymer-Nanoparticle Hydrogels for Cell and Drug Delivery Applications. Journal of Visualized Experiments, 2021, , .	0.3	14
81	A nanoparticle solution. Nature Materials, 2014, 13, 231-232.	27.5	13
82	A Nanoparticle Platform for Improved Potency, Stability, and Adjuvanticity of Poly(I:C). Advanced Therapeutics, 2020, 3, 1900174.	3.2	13
83	Engineering Insulin Cold Chain Resilience to Improve Global Access. Biomacromolecules, 2021, 22, 3386-3395.	5.4	12
84	Engineering biopharmaceutical formulations to improve diabetes management. Science Translational Medicine, 2021, 13, .	12.4	11
85	Full closed loop openâ€source algorithm performance comparison in pigs with diabetes. Clinical and Translational Medicine, 2021, 11, e387.	4.0	11
86	Water soluble, biodegradable amphiphilic polymeric nanoparticles and the molecular environment of hydrophobic encapsulates: Consistency between simulation and experiment. Polymer, 2015, 79, 255-261.	3.8	10
87	Universal Scaling Behavior during Network Formation in Controlled Radical Polymerizations. Macromolecules, 2019, 52, 9456-9465.	4.8	10
88	Ultraâ€Fast Insulinâ€“Pramlintide Coâ€Formulation for Improved Glucose Management in Diabetic Rats. Advanced Science, 2021, 8, e2101575.	11.2	10
89	Highly Branched Polydimethylacrylamide Copolymers as Functional Biomaterials. Biomacromolecules, 2021, 22, 86-94.	5.4	9
90	Affinity-Directed Dynamics of Hostâ€“Guest Motifs for Pharmacokinetic Modulation via Supramolecular PEGylation. Biomacromolecules, 2021, 22, 3565-3573.	5.4	9

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91	Enhanced Humoral Immune Response by High Density TLR Agonist Presentation on Hyperbranched Polymers. Advanced Therapeutics, 2021, 4, 2000081.	3.2	8
92	Nonâ€Cellâ€Adhesive Substrates for Printing of Arrayed Biomaterials. Advanced Healthcare Materials, 2015, 4, 501-505.	7.6	7
93	Site-selective modification of proteins using cucurbit[7]uril as supramolecular protection for N-terminal aromatic amino acids. Organic and Biomolecular Chemistry, 2020, 18, 4371-4375.	2.8	7
94	Self-assembled biomaterials using host-guest interactions. , 2018, , 205-231.		6
95	Consistent tumorigenesis with self-assembled hydrogels enables high-powered murine cancer studies. Communications Biology, 2021, 4, 985.	4.4	5
96	Seasonal Impact of Phosphate-Based Fire Retardants on Soil Chemistry Following the Prophylactic Treatment of Vegetation. Environmental Science & Technology, 2021, 55, 2316-2323.	10.0	4
97	PNP Hydrogel Prevents Formation of Symblephara in Mice After Ocular Alkali Injury. Translational Vision Science and Technology, 2022, 11, 31.	2.2	2
98	A facile method for the stain-free visualization of hierarchical structures with electron microscopy. Journal of Polymer Science Part A, 2015, 53, 842-845.	2.3	1
99	Abstract 17133: A Novel, Shear-Thinning and Rapidly Self-Healing Polymer Nanoparticle Hydrogel Diminishes Post-Operative Adhesions in Rodent and Ovine Models of Cardiac Adhesion Formation. Circulation, 2018, 138, .	1.6	1
100	Reply to SantÃn et al.: Viscoelastic retardant fluids enable treatments to prevent wildfire on landscapes subject to routine ignitions. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 5105-5106.	7.1	0
101	Abstract 21311: A Novel, Shear-Assembling, Shear-Thinning Polymer-Nanoparticle Hydrogel Diminishes Post-Operative Thoracic Adhesions in a Rodent Model of Ischemic Cardiomyopathy. Circulation, 2017, 136, .	1.6	0