Eric Beckman

List of Publications by Year
in descending order

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95 papers	7,069 citations	81743 39 h-index	58464 82 g-index
97 all docs	97 docs citations	97 times ranked	5377 citing authors

#	Article	IF	Citations
1	Green processing using ionic liquids and CO2. Nature, 1999, 399, 28-29.	13.7	1,848
2	Generation of microcellular polymeric foams using supercritical carbon dioxide. I: Effect of pressure and temperature on nucleation. Polymer Engineering and Science, 1994, 34, 1137-1147.	1.5	482
3	Non-fluorous polymers with very high solubility in supercritical CO2 down to low pressures. Nature, 2000, 405, 165-168.	13.7	425
4	Generation of microcellular polymeric foams using supercritical carbon dioxide. II: Cell growth and skin formation. Polymer Engineering and Science, 1994, 34, 1148-1156.	1.5	229
5	The Gelation of CO2: A Sustainable Route to the Creation of Microcellular Materials. Science, 1999, 286, 1540-1543.	6.0	204
6	Enzyme Activity in Supercritical Fluids. Critical Reviews in Biotechnology, 1995, 15, 41-71.	5.1	187
7	A challenge for green chemistry: designing molecules that readily dissolve in carbon dioxide. Chemical Communications, 2004, , 1885.	2.2	145
8	Making Polymers from Carbon Dioxide. Science, 1999, 283, 946-947.	6.0	128
9	Design and Synthesis of Low Cost, Sustainable CO2-philes. Industrial & Engineering Chemistry Research, 2000, 39, 4678-4683.	1.8	128
10	One-Step Biocatalytic Synthesis of Linear Polyesters with Pendant Hydroxyl Groups. Journal of the American Chemical Society, 1998, 120, 9475-9480.	6.6	123
11	Nucleation and growth in microcellular materials: Supercritical CO2 as foaming agent. AICHE Journal, 1995, 41, 357-367.	1.8	114
12	Enhancement of the Viscosity of Carbon Dioxide Using Styrene/Fluoroacrylate Copolymers. Macromolecules, 2000, 33, 5437-5442.	2.2	113
13	Toward the Development of â€œCO2-philicâ€•Hydrocarbons. 1. Use of Side-Chain Functionalization to Lower the Miscibility Pressure of Polydimethylsiloxanes in CO2. Journal of Physical Chemistry B, 1999, 103, 6441-6444.	1.2	110
14	Effect of Grafted Lewis Base Groups on the Phase Behavior of Model Poly(dimethyl siloxanes) in CO2. Industrial & Engineering Chemistry Research, 2003, 42, 6415-6424.	1.8	99
15	Peracetylated Sugar Derivatives Show High Solubility in Liquid and Supercritical Carbon Dioxide. Organic Letters, 2002, 4, 2333-2335.	2.4	95
16	Phase Behavior of Oxygen-Containing Polymers in CO2. Macromolecules, 2007, 40, 1332-1341.	2.2	95
17	Photoscissable Hydrogel Synthesis via Rapid Photopolymerization of Novel PEG-Based Polymers in the Absence of PhotoinitiatorsâŠ¥. Journal of the American Chemical Society, 1996, 118, 6235-6240.	6.6	93
18	Radical Reactions with Alkyl and Fluoroalkyl (Fluorous) Tin Hydride Reagents in Supercritical CO2. Journal of the American Chemical Society, 1997, 119, 7406-7407.	6.6	90

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19	Oxygenated Hydrocarbon Ionic Surfactants Exhibit CO2Solubility. Journal of the American Chemical Society, 2005, 127, 11754-11762.	6.6	85
20	Biocatalytic Solvent-Free Polymerization To Produce High Molecular Weight Polyesters. Biotechnology Progress, 1997, 13, 318-325.	1.3	81
21	Poly(ethylene glycol)-block-poly(N-vinylformamide) Copolymers Synthesized by the RAFT Methodology. Macromolecules, 2003, 36, 2563-2567.	2.2	81
22	Design, Synthesis, and Evaluation of Novel, Highly CO2-Soluble Chelating Agents for Removal of Metals. Industrial & Engineering Chemistry Research, 1996, 35, 3644-3652.	1.8	80
23	Generation of hydrogen peroxide directly from H2 and O2 using CO2 as the solvent. Green Chemistry, 2001, 3, 80-86.	4.6	77
24	Control of Subtilisin Substrate Specificity by Solvent Engineering in Organic Solvents and Supercritical Fluoroform. Journal of the American Chemical Society, 1996, 118, 12891-12901.	6.6	76
25	H2O2 in CO2/H2O Biphasic Systems:â€‰ Green Synthesis and Epoxidation Reactions. Industrial & Engineering Chemistry Research, 2002, 41, 4466-4474.	1.8	73
26	Protein extraction and activity in reverse micelles of a nonionic detergent. Biotechnology and Bioengineering, 1992, 39, 806-814.	1.7	71
27	One-pot green synthesis of propylene oxide using in situ generated hydrogen peroxide in carbon dioxide. Green Chemistry, 2008, 10, 934.	4.6	69
28	Design and Evaluation of Nonfluorous CO‹sub›2‹/sub›-Soluble Oligomers and Polymers. Journal of Physical Chemistry B, 2009, 113, 14971-14980.	1.2	69
29	The high CO2-solubility of per-acetylated Î±-, Î²-, and Î³-cyclodextrin. Fluid Phase Equilibria, 2003, 211, 211-217.	1.4	66
30	Thermally reversible polymeric sorbents for acid gases: CO2, SO2, and NOx. Journal of Applied Polymer Science, 1994, 53, 857-875.	1.3	65
31	Homopolymerization and Copolymerization of Cyclohexene Oxide with Carbon Dioxide Using Zinc and Aluminum Catalysts. Macromolecules, 1999, 32, 6904-6912.	2.2	64
32	Production of H2O2 in CO2 and its use in the direct synthesis of propylene oxideThis work was presented at the Green Solvents for Catalysis Meeting held in Bruchsal, Germany, 13?16th October, 2002.. Green Chemistry, 2003, 5, 332.	4.6	60
33	Immobilization of glucose oxidase in thin polypyrrole films: Influence of polymerization conditions and film thickness on the activity and stability of the immobilized enzyme. Biotechnology and Bioengineering, 1993, 42, 1037-1045.	1.7	52
34	Semi-Fluorinated Trialkyltin Fluorides and Fluorinated Telechelic Ionomers as Viscosity-Enhancing Agents for Carbon Dioxide. Industrial & Engineering Chemistry Research, 2001, 40, 908-913.	1.8	50
35	Direct synthesis of H2O2 from O2 and H2 over precious metal loaded TS-1 in CO2. Green Chemistry, 2007, 9, 802.	4.6	47
36	Characterization of Synthetic Polymers Using Matrix-Assisted Laser Desorption/Ionizationâ^'Time of Flight Mass Spectrometry. Macromolecules, 1996, 29, 2213-2221.	2.2	46

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37	Creating molecular barriers to acute platelet deposition on damaged arteries with reactive polyethylene glycol. , 1998, 41, 251-256.		46
38	Photoimmobilization of organophosphorus hydrolase within a PEG-based hydrogel. , 1999, 65, 579-588.		46
39	Design of highly CO₂-soluble chelating agents for carbon dioxide extraction of heavy metals. Journal of Materials Research, 1995, 10, 530-537.	1.2	44
40	Design of Highly CO2-Soluble Chelating Agents. 2. Effect of Chelate Structure and Process Parameters on Extraction Efficiency. Industrial & Engineering Chemistry Research, 1997, 36, 2368-2374.	1.8	42
41	Influence of tert-amine groups on the solubility of polymers in CO2. Polymer, 2009, 50, 2436-2444.	1.8	42
42	Anthraquinone Siloxanes as Thickening Agents for Supercritical CO₂. Energy & Fuels, 2016, 30, 5990-5998.	2.5	42
43	Biocatalytic polyester synthesis: Analysis of the evolution of molecular weight and end group functionality. , 1997, 55, 227-239.		40
44	Enzymatic synthesis of carbonate monomers and polycarbonates. , 1999, 62, 259-266.		35
45	Oxidation Reactions in CO2:Â Academic Exercise or Future Green Processes?. Environmental Science & Technology, 2003, 37, 5289-5296.	4.6	35
46	Carbon dioxide-in-oil emulsions stabilized with silicone-alkyl surfactants for waterless hydraulic fracturing. Journal of Colloid and Interface Science, 2018, 526, 253-267.	5.0	35
47	Ambient carboxylation on a supported reversible CO2 carrier: ketone to Î²-keto ester. Green Chemistry, 2011, 13, 376.	4.6	34
48	Peer Reviewed: Using CO2 to Produce Chemical Producs Sustainably. Environmental Science & Technology, 2002, 36, 347A-353A.	4.6	33
49	Remediation of Metal-Bearing Aqueous Waste Streams via Direct Carbonation. Energy & Fuels, 2001, 15, 256-262.	2.5	32
50	Putting carbon dioxide to work. Nature, 2016, 531, 180-181.	13.7	30
51	Small Molecule Cyclic Amide and Urea Based Thickeners for Organic and sc-CO₂/Organic Solutions. Energy & Fuels, 2016, 30, 5601-5610.	2.5	29
52	Enzyme-catalyzed polycondensation reactions for the synthesis of aromatic polycarbonates and polyesters. , 1999, 65, 485-489.		28
53	Effect of Incubation of CO₂ and Lewis Acid on the Generation of Toluic Acid from Toluene and CO₂. Industrial & Engineering Chemistry Research, 2009, 48, 1059-1062.	1.8	28
54	Affinity Extraction into Carbon Dioxide. 1. Extraction of Avidin Using a Biotin-Functional Fluoroether Surfactant. Industrial & Engineering Chemistry Research, 1997, 36, 5366-5370.	1.8	25

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55	Assessment of solubility and viscosity of ultra-high molecular weight polymeric thickeners in ethane, propane and butane for miscible EOR. Journal of Petroleum Science and Engineering, 2016, 145, 266-278.	2.1	25
56	The solubility of low molecular weight Poly(Dimethyl siloxane) in dense CO2 and its use as a CO2-philic segment. Journal of Supercritical Fluids, 2017, 119, 17-25.	1.6	25
57	Affinity Extraction into CO2. 2. Extraction of Heavy Metals into CO2from Low-pH Aqueous Solutions. Industrial & Engineering Chemistry Research, 1998, 37, 4768-4773.	1.8	23
58	Effect of System Conditions for Biodiesel Production via Transesterification Using Carbon Dioxideâ€“Methanol Mixtures in the Presence of a Heterogeneous Catalyst. ACS Sustainable Chemistry and Engineering, 2014, 2, 387-395.	3.2	23
59	Toward a Green and Sustainable Chemistry Education Road Map. Journal of Chemical Education, 2020, 97, 2104-2113.	1.1	23
60	Production of Hydrogen Peroxide in Liquid CO2. 3. Oxidation of CO2-Philic Anthrahydroquinones. Industrial & Engineering Chemistry Research, 2000, 39, 2843-2848.	1.8	22
61	Photoswitchable PEG-CA hydrogels and factors that affect their photosensitivity. Journal of Polymer Science Part A, 2000, 38, 1466-1476.	2.5	21
62	Thickening CO₂ with Direct Thickeners, CO₂-in-Oil Emulsions, or Nanoparticle Dispersions: Literature Review and Experimental Validation. Energy & Fuels, 2021, 35, 8510-8540.	2.5	20
63	Solubility of several analogues of triphenylphosphine in carbon dioxide. Green Chemistry, 2005, 7, 590.	4.6	19
64	Patents and literature. Applied Biochemistry and Biotechnology, 1991, 31, 197-211.	1.4	18
65	Phase Behavior of Carbon Dioxide + 1,2-Epoxycyclohexane Mixtures. Journal of Chemical & Engineering Data, 1997, 42, 664-667.	1.0	18
66	Fluoroacrylate-aromatic acrylate copolymers for viscosity enhancement of carbon dioxide. Journal of Supercritical Fluids, 2019, 146, 38-46.	1.6	18
67	Modelling phase behavior of biodiesel related systems with CO2 using a polar version of PC-SAFT. Fluid Phase Equilibria, 2019, 485, 32-43.	1.4	17
68	Molecular redesign of expanded polystyrene to allow use of carbon dioxide as a foaming agent. I. Reversible binding of CO2. Journal of Applied Polymer Science, 1993, 50, 835-844.	1.3	16
69	Use of a batch-stirred reactor to rationally tailor biocatalytic polytransesterification. , 2000, 67, 424-434.		16
70	Production of Hydrogen Peroxide in Liquid CO2. 1. Design, Synthesis, and Phase Behavior of CO2-Miscible Anthraquinones. Industrial & Engineering Chemistry Research, 1999, 38, 2824-2832.	1.8	15
71	Small associative molecule thickeners for ethane, propane and butane. Journal of Supercritical Fluids, 2016, 114, 9-17.	1.6	15
72	An experimental feasibility study on the use of CO2-soluble polyfluoroacrylates for CO2 mobility and conformance control applications. Journal of Petroleum Science and Engineering, 2020, 184, 106556.	2.1	15

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73	Determination of Mark-Houwink parameters for poly(N-vinylformamide). Journal of Polymer Science Part A, 1997, 35, 2533-2534.	2.5	14
74	Development of Small Molecule CO2 Thickeners for EOR and Fracturing. , 2014, , .		14
75	Cellulose triacetate oligomers exhibit high solubility in dense CO2. Green Chemistry, 2008, 10, 756.	4.6	13
76	Design of Ligands for the Extraction of PtCl62-into Liquid CO2. Industrial & Engineering Chemistry Research, 2001, 40, 2897-2903.	1.8	11
77	Separation of Thermoplastics by Density Using Near-Critical and Supercritical Carbon Dioxide and Sulfur Hexafluoride. ACS Symposium Series, 1992, , 172-185.	0.5	9
78	Rapid biocatalytic polytransesterification: Reaction kinetics in an exothermic reaction. , 1998, 59, 428-437.		9
79	Synthesis and Properties of some É›-Caprolactone-Based Di- and Triblock Polymers by Anionic Polymerization. Macromolecular Materials and Engineering, 2001, 286, 497-505.	1.7	8
80	Tuning catalyst solubility in CO2by changing molar volume. Green Chemistry Letters and Reviews, 2010, 3, 319-328.	2.1	8
81	Developing a Functional Poly(dimethylsiloxane)-Based Microbial Nanoculture System Using Dimethylallylamine. ACS Applied Materials & Interfaces, 2020, 12, 50581-50591.	4.0	8
82	Solubilization and Activity of Proteins in Compressible-Fluid Based Microemulsions. Nature Biotechnology, 1992, 10, 1584-1588.	9.4	6
83	Synthesis and characterization of alkylatedN-vinylformamide monomers and their polymers. Journal of Polymer Science Part A, 2004, 42, 4994-5004.	2.5	5
84	Enzyme Activity Using a Perfluoropolyether-Modified NAD(H) in Fluorous Solvents and Carbon Dioxide. ACS Symposium Series, 2002, , 64-81.	0.5	4
85	Highly CO2-Soluble Chelating Agents for Supercritical Extraction and Recovery of Heavy Metals. Materials Research Society Symposia Proceedings, 1994, 344, 211.	0.1	3
86	Fluoroacrylate Polymers as CO2-soluble Conformance Control Agents. , 2018, , .		3
87	Predicting Initial Reactant Miscibility for CO₂-Enhanced Transesterification of Triglycerides with Methanol Using a Polar Version of PC-SAFT. Industrial & Engineering Chemistry Research, 2019, 58, 22598-22608.	1.8	3
88	Generation of Microcellular Biodegradable Polymers Using Supercritical Carbon Dioxide. ACS Symposium Series, 1999, , 181-193.	0.5	2
89	Design of a well-defined poly(dimethylsiloxane)-based microbial nanoculture system. Materials Today Communications, 2021, 27, 102185.	0.9	2
90	Use of a batch-stirred reactor to rationally tailor biocatalytic polytransesterification. Biotechnology and Bioengineering, 2000, 67, 424.	1.7	1

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91	Combined Reaction-Separation Processes in CO2. ACS Symposium Series, 2000, , 78-95.	0.5	0
92	Inverse Emulsion Polymerization in Carbon Dioxide. , 2006, , 139-156.		0
93	Using Ions to Control Transport in Two-Dimensional Materials for Ion-Controlled Electronics. , 2018, , .		0
94	Sugar Acetate-based Low Molecular Weight Organogelators. Chemistry Letters, 2020, 49, 1026-1029.	0.7	0
95	Work in Progress: A Vision for the First â€œProduct Innovation Sequenceâ€•for Chemical Engineers. , 0, , .		0