J William Carey

List of Publications by Year
in descending order

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95 papers	5,878 citations	81900 39 h-index	74163 75 g-index
112 all docs	112 docs citations	112 times ranked	5016 citing authors

#	Article	IF	Citations
1	Rapid Measurement of Biotâ€™s Effective Stress Coefficient for Oil Well Cements with Application to Well Integrity. Rock Mechanics and Rock Engineering, 2023, 56, 7115-7127.	5.4	1
2	Effect of Shear Displacement and Stress Changes on Fracture Hydraulic Aperture and Flow Anisotropy. Transport in Porous Media, 2022, 141, 17-47.	2.6	7
3	From Fluid Flow to Coupled Processes in Fractured Rock: Recent Advances and New Frontiers. Reviews of Geophysics, 2022, 60, e2021RG000744.	23.0	61
4	Hydroâ€Mechanical Measurements of Sheared Crystalline Rock Fractures With Applications for EGS Collab Experiments 1 and 2. Journal of Geophysical Research: Solid Earth, 2022, 127, .	3.4	10
5	Fracture Caging to Limit Induced Seismicity. Geophysical Research Letters, 2021, 48, .	4.0	9
6	Stress-dependent fracture permeability measurements and implications for shale gas production. Fuel, 2021, 290, 119984.	6.4	21
7	Injection Parameters That Promote Branching of Hydraulic Cracks. Geophysical Research Letters, 2021, 48, e2021GL093321.	4.0	4
8	Scaleâ€Bridging in Threeâ€Dimensional Fracture Networks: Characterizing the Effects of Variable Fracture Apertures on Networkâ€Scale Flow Channelization. Geophysical Research Letters, 2021, 48, e2021GL094400.	4.0	18
9	Crustal fingering facilitates free-gas methane migration through the hydrate stability zone. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 31660-31664.	7.1	22
10	Experimental validation of self-sealing in wellbore cement fractures exposed to high-pressure, CO2-saturated solutions. International Journal of Greenhouse Gas Control, 2020, 100, 103112.	4.6	9
11	3D particle transport in multichannel microfluidic networks with rough surfaces. Scientific Reports, 2020, 10, 13848.	3.3	8
12	Effectiveness of a Smart Hydrogel in Well Leakage Remediation. , 2020, , .		2
13	Rapid Mineral Precipitation During Shear Fracturing of Carbonateâ€Rich Shales. Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB018864.	3.4	13
14	Homogenization of Dissolution and Enhanced Precipitation Induced by Bubbles in Multiphase Flow Systems. Geophysical Research Letters, 2020, 47, e2020GL087163.	4.0	21
15	Shear strength and permeability of the cement-casing interface. International Journal of Greenhouse Gas Control, 2020, 95, 102977.	4.6	19
16	Patterns in complex hydraulic fractures observed by true-triaxial experiments and implications for proppant placement and stimulated reservoir volumes. Journal of Petroleum Exploration and Production, 2019, 9, 2781-2792.	2.4	14
17	Simulation of Fracture Coalescence in Granite via the Combined Finiteâ€“Discrete Element Method. Rock Mechanics and Rock Engineering, 2019, 52, 3213-3227.	5.4	53
18	Potential CO2 and brine leakage through wellbore pathways for geologic CO2 sequestration using the National Risk Assessment Partnership tools: Application to the Big Sky Regional Partnership. International Journal of Greenhouse Gas Control, 2019, 81, 44-65.	4.6	39

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19	Scalable En Echelon Shearâ€Fracture Apertureâ€Roughness Mechanism: Theory, Validation, and Implications. Journal of Geophysical Research: Solid Earth, 2019, 124, 957-977.	3.4	22
20	Toward better hydraulic fracturing fluids and their application in energy production: A review of sustainable technologies and reduction of potential environmental impacts. Journal of Petroleum Science and Engineering, 2019, 173, 793-803.	4.2	47
21	Discontinuities in effective permeability due to fracture percolation. Mechanics of Materials, 2018, 119, 25-33.	3.2	11
22	Engineering Prediction of Axial Wellbore Shear Failure Caused by Reservoir Uplift and Subsidence. SPE Journal, 2018, 23, 1039-1066.	3.1	15
23	Multiphysics Lattice Discrete Particle Modeling (M-LDPM) for the Simulation of Shale Fracture Permeability. Rock Mechanics and Rock Engineering, 2018, 51, 3963-3981.	5.4	28
24	The mechanisms, dynamics, and implications of self-sealing and CO2 resistance in wellbore cements. International Journal of Greenhouse Gas Control, 2018, 75, 162-179.	4.6	15
25	Effectiveness of supercritical-CO2 and N2 huff-and-puff methods of enhanced oil recovery in shale fracture networks using microfluidic experiments. Applied Energy, 2018, 230, 160-174.	10.1	116
26	Extracting Hydrocarbon From Shale: An Investigation of the Factors That Influence the Decline and the Tail of the Production Curve. Water Resources Research, 2018, 54, 3748-3757.	4.2	9
27	Wellbore Cement Porosity Evolution in Response to Mineral Alteration during CO2 Flooding. Environmental Science & Technology, 2017, 51, 692-698.	10.0	17
28	Brittle-ductile Behavior and Caprock Integrity. Energy Procedia, 2017, 114, 3132-3139.	1.8	7
29	Caprock integrity susceptibility to permeable fracture creation. International Journal of Greenhouse Gas Control, 2017, 64, 60-72.	4.6	31
30	Baseline integrity property measurement of legacy oil and gas wells for carbon storage projects. , 2017, 7, 866-890.		6
31	Computational Analysis of the Fracture-Permeability Behavior of Shale. , 2017, , .		2
32	Experimental Measurement of Fracture Permeability at Reservoir Conditions in Utica and Marcellus Shale. , 2017, , .		3
33	Mixing in a threeâ€phase system: Enhanced production of oilâ€wet reservoirs by CO₂ injection. Geophysical Research Letters, 2016, 43, 196-205.	4.0	38
34	Understanding hydraulic fracturing: a multi-scale problem. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150426.	3.4	92
35	Highâ€stress triaxial directâ€shear fracturing of Utica shale and in situ Xâ€ray microtomography with permeability measurement. Journal of Geophysical Research: Solid Earth, 2016, 121, 5493-5508.	3.4	51
36	Steam blowouts in California Oil and Gas District 4: Comparison of the roles of initial defects versus well aging and implications for well blowouts in geologic carbon storage projects. International Journal of Greenhouse Gas Control, 2016, 51, 36-47.	4.6	3

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37	Review: Role of chemistry, mechanics, and transport on well integrity in CO2 storage environments. International Journal of Greenhouse Gas Control, 2016, 49, 149-160.	4.6	141
38	Reduced order models of transient CO2 and brine leakage along abandoned wellbores from geologic carbon sequestration reservoirs. International Journal of Greenhouse Gas Control, 2016, 45, 150-162.	4.6	43
39	Jumpstarting commercialâ€scale CO₂ capture and storage with ethylene production and enhanced oil recovery in the US Gulf. , 2015, 5, 241-253.		27
40	Using Discovery Science To Increase Efficiency of Hydraulic Fracturing While Reducing Water Usage. ACS Symposium Series, 2015, , 71-88.	0.5	0
41	A response surface model to predict CO2 and brine leakage along cemented wellbores. International Journal of Greenhouse Gas Control, 2015, 33, 27-39.	4.6	47
42	A thermodynamic and kinetic model for pasteâ€“aggregate interactions and the alkaliâ€“silica reaction. Cement and Concrete Research, 2015, 76, 107-120.	11.0	19
43	Fracture-permeability behavior of shale. Journal of Unconventional Oil and Gas Resources, 2015, 11, 27-43.	3.5	117
44	Shale gas and non-aqueous fracturing fluids: Opportunities and challenges for supercritical CO2. Applied Energy, 2015, 147, 500-509.	10.1	622
45	Geo-material microfluidics at reservoir conditions for subsurface energy resource applications. Lab on A Chip, 2015, 15, 4044-4053.	6.0	87
46	Recent advances in risk assessment and risk management of geologic CO2 storage. International Journal of Greenhouse Gas Control, 2015, 40, 292-311.	4.6	159
47	Mesoscopic study of the formation of pseudomorphs with presence of chemical fluids. Geosciences Journal, 2014, 18, 469-475.	1.2	1
48	Pore-scale observations of supercritical CO2 drainage in Bentheimer sandstone by synchrotron x-ray imaging. International Journal of Greenhouse Gas Control, 2014, 25, 93-101.	4.6	42
49	The Environmental Costs and Benefits of Fracking. Annual Review of Environment and Resources, 2014, 39, 327-362.	13.4	350
50	Pre-site Characterization Risk Analysis for Commercial-Scale Carbon Sequestration. Environmental Science & Technology, 2014, 48, 3908-3915.	10.0	90
51	Integrity of Pre-existing Wellbores in Geological Sequestration of CO2 â€“ Assessment Using a Coupled Geomechanics-fluid Flow Model. Energy Procedia, 2014, 63, 5737-5748.	1.8	6
52	Well Integrity Assessment of a 68 year old Well at a CO2 Injection Project. Energy Procedia, 2014, 63, 5691-5706.	1.8	22
53	Geomechanical Behavior of Caprock and Cement: Plasticity in Hydrodynamic Seals. Energy Procedia, 2014, 63, 5671-5679.	1.8	7
54	CO₂/Brine Transport into Shallow Aquifers along Fault Zones. Environmental Science & Technology, 2013, 47, 290-297.	10.0	52

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55	Pre-injection Baseline Data Collection to Establish Existing Wellbore Leakage Properties. Energy Procedia, 2013, 37, 5661-5672.	1.8	23
56	CO2 leakage impacts on shallow groundwater: Field-scale reactive-transport simulations informed by observations at a natural analog site. Applied Geochemistry, 2013, 30, 136-147.	3.0	60
57	Experimental Evaluation of Wellbore Integrity Along the Cement-rock Boundary. Environmental Science & Technology, 2013, 47, 276-282.	10.0	93
58	Geomechanical Behavior of Wells in Geologic Sequestration. Energy Procedia, 2013, 37, 5642-5652.	1.8	4
59	Geochemistry of Wellbore Integrity in CO2 Sequestration: Portland Cement-Steel-Brine-CO2 Interactions. Reviews in Mineralogy and Geochemistry, 2013, 77, 505-539.	4.8	112
60	The cross-scale science of CO2 capture and storage: from pore scale to regional scale. Energy and Environmental Science, 2012, 5, 7328.	30.8	132
61	Multicomponent interparticle-potential lattice Boltzmann model for fluids with large viscosity ratios. Physical Review E, 2012, 86, 036701.	2.1	102
62	Relative stability and significance of dawsonite and aluminum minerals in geologic carbon sequestration. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	30
63	A coupled electrochemicalâ€“geochemical model of corrosion for mild steel in high-pressure CO2â€“saline environments. International Journal of Greenhouse Gas Control, 2011, 5, 777-787.	4.6	33
64	Effect of bicarbonate on corrosion of carbon steel in CO2 saturated brines. International Journal of Greenhouse Gas Control, 2011, 5, 1680-1683.	4.6	82
65	Computational Studies of Two-Phase Cement/CO2/Brine Interaction in Wellbore Environments. SPE Journal, 2011, 16, 940-948.	3.1	17
66	Effect of sodium chloride on corrosion of mild steel in CO2-saturated brines. Journal of Applied Electrochemistry, 2011, 41, 741-749.	2.9	71
67	Localized CO2 corrosion propagation at moderate FeCO3 supersaturation initiated by mechanical removal of corrosion scale. Journal of Applied Electrochemistry, 2011, 41, 1367-1371.	2.9	7
68	The challenge of predicting groundwater quality impacts in a CO2 leakage scenario: Results from field, laboratory, and modeling studies at a natural analog site in New Mexico, USA. Energy Procedia, 2011, 4, 3239-3245.	1.8	31
69	Exploring capillary trapping efficiency as a function of interfacial tension, viscosity, and flow rate. Energy Procedia, 2011, 4, 4945-4952.	1.8	67
70	Experimental investigation of wellbore integrity and CO2â€“brine flow along the casingâ€“cement microannulus. International Journal of Greenhouse Gas Control, 2010, 4, 272-282.	4.6	153
71	Wellbore integrity analysis of a natural CO2 producer. International Journal of Greenhouse Gas Control, 2010, 4, 186-197.	4.6	213
72	Wellbore integrity analysis of a natural CO2 producer. Energy Procedia, 2009, 1, 3561-3569.	1.8	23

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73	Wellbore integrity and CO2 -brine flow along the casing-cement microannulus. Energy Procedia, 2009, 1, 3609-3615.	1.8	33
74	A continuous process for manufacture of magnesite and silica from olivine, CO2 and H2O. Energy Procedia, 2009, 1, 4891-4898.	1.8	30
75	Geochemical effects of CO2 sequestration on fractured wellbore cement at the cement/caprock interface. Chemical Geology, 2009, 265, 122-133.	3.3	128
76	Computational Studies of Two-Phase Cement-CO2-Brine Interaction in Wellbore Environments. , 2009, , .		4
77	Geochemical effects of CO2 sequestration in sandstones under simulated in situ conditions of deep saline aquifers. Applied Geochemistry, 2008, 23, 2735-2745.	3.0	212
78	Development of a Hybrid Process and System Model for the Assessment of Wellbore Leakage at a Geologic CO₂ Sequestration Site. Environmental Science & Technology, 2008, 42, 7280-7286.	10.0	137
79	Analysis and performance of oil well cement with 30 years of CO2 exposure from the SACROC Unit, West Texas, USA. International Journal of Greenhouse Gas Control, 2007, 1, 75-85.	4.6	376
80	Incorporating solid solutions in reactive transport equations using a kinetic discrete-composition approach. Geochimica Et Cosmochimica Acta, 2006, 70, 1356-1378.	3.9	37
81	Hydration state of zeolites, clays, and hydrated salts under present-day martian surface conditions: Can hydrous minerals account for Mars Odyssey observations of near-equatorial water-equivalent hydrogen?. Icarus, 2005, 178, 74-83.	2.5	45
82	A Vadose Zone Flow and Transport Model for Los Alamos Canyon, Los Alamos, New Mexico. Vadose Zone Journal, 2005, 4, 729-743.	2.2	6
83	Hydration-dehydration behavior and thermodynamics of chabazite. Geochimica Et Cosmochimica Acta, 2005, 69, 2293-2308.	3.9	30
84	Magnesium sulphate salts and the history of water on Mars. Nature, 2004, 431, 663-665.	27.8	272
85	Hydrated states of MgSO4at equatorial latitudes on Mars. Geophysical Research Letters, 2004, 31, .	4.0	65
86	A geostatistical modeling study of the effect of heterogeneity on radionuclide transport in the unsaturated zone, Yucca Mountain. Journal of Contaminant Hydrology, 2003, 62-63, 319-336.	3.3	10
87	Stability of hydrous minerals on the martian surface. Icarus, 2003, 164, 96-103.	2.5	123
88	Hydrogen-bonded water in laumontite II: Experimental determination of site-specific thermodynamic properties of hydration of the W1 and W5 sites. American Mineralogist, 2003, 88, 1060-1072.	1.9	15
89	Thermal Behavior of Natural Zeolites. Reviews in Mineralogy and Geochemistry, 2001, 45, 403-452.	4.8	77
90	A GIS-based hillslope erosion and sediment delivery model and its application in the Cerro Grande burn area. Hydrological Processes, 2001, 15, 2995-3010.	2.6	38

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91	Thermodynamics of Cationic Surfactant Sorption onto Natural Clinoptilolite. Journal of Colloid and Interface Science, 1998, 206, 369-380.	9.4	78
92	Calorimetric Measurement of the Enthalpy of Hydration of Clinoptilolite. Clays and Clay Minerals, 1997, 45, 826-833.	1.3	29
93	Equilibrium in the clinoptilolite-H₂O system. American Mineralogist, 1996, 81, 952-962.	1.9	53
94	A thermodynamic formulation of hydrous cordierite. Contributions To Mineralogy and Petrology, 1995, 119, 155-165.	3.1	32
95	Cordierite-Spinel Troctolite, a New Magnesium-Rich Lithology from the Lunar Highlands. Science, 1989, 243, 925-928.	12.6	45