Damien Daval

List of Publications by Year
in descending order

58 papers	2,372 citations	201674 27 h-index	206112 48 g-index
58 all docs	58 docs citations	58 times ranked	2227 citing authors

#	ARTICLE	IF	CITATIONS
1	Influence of amorphous silica layer formation on the dissolution rate of olivine at 90Â°C and elevated pCO2. Chemical Geology, 2011, 284, 193-209.	3.3	251
2	Unifying natural and laboratory chemical weathering with interfacial dissolutionâ€“reprecipitation: A study based on the nanometer-scale chemistry of fluidâ€“silicate interfaces. Chemical Geology, 2012, 294-295, 203-216.	3.3	234
3	Carbonation of Ca-bearing silicates, the case of wollastonite: Experimental investigations and kinetic modeling. Chemical Geology, 2009, 265, 63-78.	3.3	225
4	Mechanism of wollastonite carbonation deduced from micro- to nanometer length scale observations. American Mineralogist, 2009, 94, 1707-1726.	1.9	117
5	Linking nm-scale measurements of the anisotropy of silicate surface reactivity to macroscopic dissolution rate laws: New insights based on diopside. Geochimica Et Cosmochimica Acta, 2013, 107, 121-134.	3.9	90
6	Early entombment within silica minimizes the molecular degradation of microorganisms during advanced diagenesis. Chemical Geology, 2016, 437, 98-108.	3.3	75
7	Enhanced Olivine Carbonation within a Basalt as Compared to Single-Phase Experiments: Reevaluating the Potential of CO₂ Mineral Sequestration. Environmental Science & Technology, 2014, 48, 5512-5519.	10.0	70
8	Pore-Scale Geochemical Reactivity Associated with CO₂ Storage: New Frontiers at the Fluidâ€“Solid Interface. Accounts of Chemical Research, 2017, 50, 759-768.	15.6	70
9	The role of Fe and redox conditions in olivine carbonation rates: An experimental study of the rate limiting reactions at 90 and 150 Â°C in open and closed systems. Geochimica Et Cosmochimica Acta, 2013, 118, 157-183.	3.9	68
10	Lizardite serpentine dissolution kinetics as a function of pH and temperature, including effects of elevated pCO2. Chemical Geology, 2013, 351, 245-256.	3.3	66
11	Geothermal implications for fracture-filling hydrothermal precipitation. Geothermics, 2016, 64, 235-245.	3.4	58
12	pH-dependent control of feldspar dissolution rate by altered surface layers. Chemical Geology, 2016, 442, 148-159.	3.3	53
13	CO2 geological storage: The environmental mineralogy perspective. Comptes Rendus - Geoscience, 2011, 343, 246-259.	1.2	52
14	Dissolution kinetics of diopside as a function of solution saturation state: Macroscopic measurements and implications for modeling of geological storage of CO2. Geochimica Et Cosmochimica Acta, 2010, 74, 2615-2633.	3.9	48
15	Does crystallographic anisotropy prevent the conventional treatment of aqueous mineral reactivity? A case study based on K-feldspar dissolution kinetics. Geochimica Et Cosmochimica Acta, 2016, 190, 294-308.	3.9	48
16	Organic molecular heterogeneities can withstand diagenesis. Scientific Reports, 2017, 7, 1508.	3.3	48
17	Burial-induced oxygen-isotope re-equilibration of fossil foraminifera explains ocean paleotemperature paradoxes. Nature Communications, 2017, 8, 1134.	12.8	48
18	The deleterious effect of secondary phases on olivine carbonation yield: Insight from time-resolved aqueous-fluid sampling and FIB-TEM characterization. Chemical Geology, 2013, 357, 186-202.	3.3	47

#	Article	IF	Citations
19	Growth of Nanosized Calcite through Gasâˆ'Solid Carbonation of Nanosized Portlandite under Anisobaric Conditions. Crystal Growth and Design, 2010, 10, 4823-4830.	3.0	43
20	The dependence of albite feldspar dissolution kinetics on fluid saturation state at acid and basic pH: Progress towards a universal relation. Comptes Rendus - Geoscience, 2010, 342, 676-684.	1.2	43
21	Fayalite (Fe2SiO4) dissolution kinetics determined by X-ray absorption spectroscopy. Chemical Geology, 2010, 275, 161-175.	3.3	40
22	Influence of etch pit development on the surface area and dissolution kinetics of the orthoclase (001) surface. Chemical Geology, 2016, 447, 79-92.	3.3	34
23	Examination of crystal dissolution in 3D: A way to reconcile dissolution rates in the laboratory?. Geochimica Et Cosmochimica Acta, 2020, 273, 1-25.	3.9	33
24	Carbon dioxide sequestration through silicate degradation and carbon mineralisation: promises and uncertainties. Npj Materials Degradation, 2018, 2, .	5.8	31
25	From mixed flow reactor to column experiments and modeling: Upscaling of calcite dissolution rate. Chemical Geology, 2018, 487, 63-75.	3.3	31
26	Mineralogical evolution of Feâ€"Si-rich layers at the olivine-water interface during carbonation reactions. American Mineralogist, 2015, 100, 2655-2669.	1.9	30
27	Time-dependent feldspar dissolution rates resulting from surface passivation: Experimental evidence and geochemical implications. Earth and Planetary Science Letters, 2018, 498, 226-236.	4.4	30
28	Integrative analysis of the mineralogical and chemical composition of modern microbialites from ten Mexican lakes: What do we learn about their formation?. Geochimica Et Cosmochimica Acta, 2021, 305, 148-184.	3.9	28
29	Dynamics of altered surface layer formation on dissolving silicates. Geochimica Et Cosmochimica Acta, 2017, 209, 51-69.	3.9	27
30	Geochemical Conditions Allowing the Formation of Modern Lacustrine Microbialites. Procedia Earth and Planetary Science, 2017, 17, 380-383.	0.6	27
31	Comparing the reactivity of glasses with their crystalline equivalents: The case study of plagioclase feldspar. Geochimica Et Cosmochimica Acta, 2019, 254, 122-141.	3.9	27
32	Experimental study and numerical simulation of the dissolution anisotropy of tricalcium silicate. Chemical Geology, 2018, 497, 64-73.	3.3	26
33	Effect of pH on the stability of passivating gel layers formed on International Simple Glass. Journal of Nuclear Materials, 2019, 524, 21-38.	2.7	25
34	In-situ dissolution rates of silicate minerals and associated bacterial communities in the critical zone (Strengbach catchment, France). Geochimica Et Cosmochimica Acta, 2019, 249, 95-120.	3.9	24
35	Early stages of bacterial community adaptation to silicate aging. Geology, 2018, 46, 555-558.	4.4	15
36	Direct measurement of fungal contribution to silicate weathering rates in soil. Geology, 2021, 49, 1055-1058.	4.4	15

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37	Formation of Amorphous Silica Surface Layers by Dissolution-Reprecipitaton During Chemical Weathering: Implications for CO2 Uptake. Procedia Earth and Planetary Science, 2013, 7, 346-349.	0.6	14
38	Rate-limiting reaction of C 3 S hydration - A reply to the discussion â€œA new view on the kinetics of tricalcium silicate hydrationâ€•by E. Gartner. Cement and Concrete Research, 2018, 104, 118-122.	11.0	14
39	Control of the mobilization of arsenic and other natural pollutants in groundwater by calcium carbonate concretions in the Pampean Aquifer, southeast of the Buenos Aires province, Argentina. Science of the Total Environment, 2019, 674, 532-543.	8.0	13
40	Physical Properties of Interfacial Layers Developed on Weathered Silicates: A Case Study Based on Labradorite Feldspar. Journal of Physical Chemistry C, 2019, 123, 24520-24532.	3.1	12
41	Linear growth rate of nanosized calcite synthesized via gasâ€"solid carbonation of Ca(OH)2 particles in a static bed reactor. Chemical Engineering Journal, 2012, 180, 237-244.	12.7	10
42	Importance of accessory minerals for the control of water chemistry of the Pampean aquifer, province of Buenos Aires, Argentina. Catena, 2018, 160, 112-123.	5.0	10
43	Generalized Subâ€Gaussian Processes: Theory and Application to Hydrogeological and Geochemical Data. Water Resources Research, 2020, 56, e2020WR027436.	4.2	10
44	The Dissolution Anisotropy of Pyroxenes: Experimental Validation of a Stochastic Dissolution Model Based on Enstatite Dissolution. Journal of Physical Chemistry C, 2020, 124, 3122-3140.	3.1	10
45	Theoretical Considerations on the Characteristic Timescales of Hydrogen Generation by Serpentinization Reactions on Enceladus. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	10
46	Barite Growth Rates as a Function of Crystallographic Orientation, Temperature, And Solution Saturation State. Crystal Growth and Design, 2020, 20, 3663-3672.	3.0	9
47	Fast and pervasive diagenetic isotope exchange in foraminifera tests is species-dependent. Nature Communications, 2022, 13, 113.	12.8	9
48	Experimental Study of Dissolution Kinetics of K-feldspar as a Function of Crystal Structure Anisotropy under Hydrothermal Conditions. Procedia Earth and Planetary Science, 2017, 17, 165-168.	0.6	7
49	Dissolution Anisotropy of Pyroxenes: A Surrogate Model for Steady-State Enstatite Dissolution Resulting from Stochastic Simulations of the Hydrolysis Process. Journal of Physical Chemistry C, 2020, 124, 13113-13126.	3.1	7
50	Dissolution Anisotropy of Pyroxenes: Role of Edges and Corners Inferred from Stochastic Simulations of Enstatite Dissolution. Journal of Physical Chemistry C, 2021, 125, 7658-7674.	3.1	7
51	A comparative study of the dissolution mechanisms of amorphous and crystalline feldspars at acidic pH conditions. Npj Materials Degradation, 2022, 6, .	5.8	7
52	GaMinâ€™11 â€" an International Inter-laboratory Comparison for Geochemical CO2 - Saline Fluid - Mineral Interaction Experiments. Energy Procedia, 2014, 63, 5538-5543.	1.8	6
53	Estimating the activation energy of bond hydrolysis by time-resolved weighing of dissolving crystals. Npj Materials Degradation, 2021, 5, .	5.8	6
54	Symbiotic cooperation between freshwater rock-boring bivalves and microorganisms promotes silicate bioerosion. Scientific Reports, 2020, 10, 13385.	3.3	5

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55	Statistical Description of Calcite Surface Roughness Resulting from Dissolution at Close-to-Equilibrium Conditions. ACS Earth and Space Chemistry, 2021, 5, 3115-3129.	2.7	4
56	Experimental determination of the reactivity of the Frio Sandstone, Texas, and the fate of heavy metals resulting from carbon dioxide sequestration. Environmental Earth Sciences, 2015, 74, 5501-5516.	2.7	3
57	Reply to 'No substantial long-term bias in the Cenozoic benthic foraminifera oxygen-isotope record'. Nature Communications, 2018, 9, 2874.	12.8	1
58	Species-specific foraminiferal ultrastructures modulate surfaces available for diagenesis. Microscopy and Microanalysis, 2021, 27, 274-275.	0.4	1