Christophe Tournassat

List of Publications by Year
in descending order

98 papers	5,387 citations	71102 41 h-index	85541 71 g-index
104 all docs	104 docs citations	104 times ranked	4193 citing authors

#	Article	IF	Citations
1	Surface Complexation of Ferrous Iron and Carbonate on Ferrihydrite and the Mobilization of Arsenic. Environmental Science & Technology, 2002, 36, 3096-3103.	10.0	561
2	Arsenic(III) Oxidation by Birnessite and Precipitation of Manganese(II) Arsenate. Environmental Science & Technology, 2002, 36, 493-500.	10.0	294
3	Electron transfer at the mineral/water interface: Selenium reduction by ferrous iron sorbed on clay. Geochimica Et Cosmochimica Acta, 2007, 71, 5731-5749.	3.9	181
4	A robust model for pore-water chemistry of clayrock. Geochimica Et Cosmochimica Acta, 2009, 73, 6470-6487.	3.9	177
5	Modelling approaches for anion-exclusion in compacted Na-bentonite. Geochimica Et Cosmochimica Acta, 2011, 75, 3698-3710.	3.9	157
6	Nanomorphology of montmorillonite particles: Estimation of the clay edge sorption site density by low-pressure gas adsorption and AFM observations. American Mineralogist, 2003, 88, 1989-1995.	1.9	150
7	The titration of clay minerals. Journal of Colloid and Interface Science, 2004, 273, 234-246.	9.4	143
8	Redox potential measurements and MÃ¶ssbauer spectrometry of FeII adsorbed onto FeIII (oxyhydr)oxides. Geochimica Et Cosmochimica Acta, 2005, 69, 4801-4815.	3.9	135
9	Modelling the porewater chemistry of the Callovianâ€"Oxfordian formation at a regional scale. Comptes Rendus - Geoscience, 2006, 338, 917-930.	1.2	135
10	Influence of reaction kinetics and mesh refinement on the numerical modelling of concrete/clay interactions. Journal of Hydrology, 2009, 364, 58-72.	5.4	125
11	Stern Layer Structure and Energetics at Micaâ€"Water Interfaces. Journal of Physical Chemistry C, 2017, 121, 9402-9412.	3.1	119
12	Comparison of molecular dynamics simulations with triple layer and modified Gouyâ€"Chapman models in a 0.1 M NaClâ€"montmorillonite system. Journal of Colloid and Interface Science, 2009, 339, 533-541.	9.4	117
13	A database of dissolution and precipitation rates for clay-rocks minerals. Applied Geochemistry, 2015, 55, 108-118.	3.0	115
14	Influence of surface conductivity on the apparent zeta potential of TiO2 nanoparticles. Journal of Colloid and Interface Science, 2011, 356, 442-453.	9.4	104
15	The titration of clay minerals. Journal of Colloid and Interface Science, 2004, 273, 224-233.	9.4	102
16	Modeling uranium(VI) adsorption onto montmorillonite under varying carbonate concentrations: A surface complexation model accounting for the spillover effect on surface potential. Geochimica Et Cosmochimica Acta, 2018, 220, 291-308.	3.9	102
17	Diffusion-driven transport in clayrock formations. Applied Geochemistry, 2012, 27, 463-478.	3.0	99
18	Modeling the composition of the pore water in a clay-rock geological formation (Callovo-Oxfordian,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	3.9	98

#	Article	IF	Citations
19	Ion adsorption and diffusion in smectite: Molecular, pore, and continuum scale views. Geochimica Et Cosmochimica Acta, 2016, 177, 130-149.	3.9	97
20	Fe(II)-Na(I)-Ca(II) Cation Exchange on Montmorillonite in Chloride Medium: Evidence for Preferential Clay Adsorption of Chloride â€" Metal Ion Pairs in Seawater. Aquatic Geochemistry, 2005, 11, 115-137.	1.3	91
21	Modeling the Acidâ€"Base Properties of Montmorillonite Edge Surfaces. Environmental Science & Technology, 2016, 50, 13436-13445.	10.0	89
22	Cation Exchange Selectivity Coefficient Values on Smectite and Mixedâ€Layer Illite/Smectite Minerals. Soil Science Society of America Journal, 2009, 73, 928-942.	2.2	73
23	Reversible surface-sorption-induced electron-transfer oxidation of Fe(II) at reactive sites on a synthetic clay mineral. Geochimica Et Cosmochimica Acta, 2007, 71, 863-876.	3.9	71
24	Modeling specific pH dependent sorption of divalent metals on montmorillonite surfaces. A review of pitfalls, recent achievements and current challenges. Numerische Mathematik, 2013, 313, 395-451.	1.4	71
25	The electrophoretic mobility of montmorillonite. Zeta potential and surface conductivity effects. Journal of Colloid and Interface Science, 2015, 451, 21-39.	9.4	66
26	Biogeochemical processes in a clay formation in situ experiment: Part E â€" Equilibrium controls on chemistry of pore water from the Opalinus Clay, Mont Terri Underground Research Laboratory, Switzerland. Applied Geochemistry, 2011, 26, 990-1008.	3.0	63
27	Na+ and HTO diffusion in compacted bentonite: Effect of surface chemistry and related texture. Journal of Hydrology, 2009, 370, 9-20.	5.4	62
28	Molecular Dynamics Simulations of Anion Exclusion in Clay Interlayer Nanopores. Clays and Clay Minerals, 2016, 64, 374-388.	1.3	61
29	Influence of pH on the interlayer cationic composition and hydration state of Ca-montmorillonite: Analytical chemistry, chemical modelling and XRD profile modelling study. Geochimica Et Cosmochimica Acta, 2005, 69, 2797-2812.	3.9	60
30	Mineralogical and isotopic record of biotic and abiotic diagenesis of the Callovianâ€"Oxfordian clayey formation of Bure (France). Geochimica Et Cosmochimica Acta, 2011, 75, 2633-2663.	3.9	59
31	Natural iodine in a clay formation: Implications for iodine fate in geological disposals. Geochimica Et Cosmochimica Acta, 2010, 74, 16-29.	3.9	58
32	Selenite Uptake by Caâ€"Al LDH: A Description of Intercalated Anion Coordination Geometries. Environmental Science & Technology, 2018, 52, 1624-1632.	10.0	58
33	Surface Properties of Clay Minerals. Developments in Clay Science, 2015, 6, 5-31.	0.5	56
34	Applying the squeezing technique to highly consolidated clayrocks for pore water characterisation: Lessons learned from experiments at the Mont Terri Rock Laboratory. Applied Geochemistry, 2014, 49, 2-21.	3.0	54
35	Ionic Transport in Nano-Porous Clays with Consideration of Electrostatic Effects. Reviews in Mineralogy and Geochemistry, 2015, 80, 287-329.	4.8	51
36	On the mobility and potential retention of iodine in the Callovianâ€"Oxfordian formation. Physics and Chemistry of the Earth, 2007, 32, 539-551.	2.9	50

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37	Two cation exchange models for direct and inverse modelling of solution major cation composition in equilibrium with illite surfaces. Geochimica Et Cosmochimica Acta, 2007, 71, 1098-1114.	3.9	48
38	Influence of montmorillonite tactoid size on Naâ€“Ca cation exchange reactions. Journal of Colloid and Interface Science, 2011, 364, 443-454.	9.4	46
39	Mechanistic Understanding of Uranyl Ion Complexation on Montmorillonite Edges: A Combined First-Principles Molecular Dynamicsâ€“Surface Complexation Modeling Approach. Environmental Science & Technology, 2018, 52, 8501-8509.	10.0	46
40	Geochemical characterization and modelling of the Toarcian/Domerian porewater at the Tournemire underground research laboratory. Applied Geochemistry, 2012, 27, 1417-1431.	3.0	45
41	Benchmark reactive transport simulations of a column experiment in compacted bentonite with multispecies diffusion and explicit treatment of electrostatic effects. Computational Geosciences, 2015, 19, 535-550.	2.4	45
42	Dissolution kinetics of synthetic Na-smectite. An integrated experimental approach. Geochimica Et Cosmochimica Acta, 2011, 75, 5849-5864.	3.9	44
43	Reactive Transport Modeling of Coupled Processes in Nanoporous Media. Reviews in Mineralogy and Geochemistry, 2019, 85, 75-109.	4.8	43
44	Experimental evidence for Ca-chloride ion pairs in the interlayer of montmorillonite. An XRD profile modeling approach. Clays and Clay Minerals, 2005, 53, 348-360.	1.3	40
45	Cation exchanged Fe(II) and Sr compared to other divalent cations (Ca,Mg) in the bure Callovianâ€“Oxfordian formation: Implications for porewater composition modelling. Applied Geochemistry, 2008, 23, 641-654.	3.0	39
46	Molecular-level understanding of metal ion retention in clay-rich materials. Nature Reviews Earth & Environment, 2022, 3, 461-476.	29.7	39
47	Evidence of Multiple Sorption Modes in Layered Double Hydroxides Using Mo As Structural Probe. Environmental Science & Technology, 2017, 51, 5531-5540.	10.0	38
48	Complete Restriction of ³⁶Cl^{â€“} Diffusion by Celestite Precipitation in Densely Compacted Illite. Environmental Science and Technology Letters, 2015, 2, 139-143.	8.7	34
49	Key factors to understand in-situ behavior of Cs in Callovoâ€“Oxfordian clay-rock (France). Chemical Geology, 2014, 387, 47-58.	3.3	31
50	Metal speciation in landfill leachates with a focus on the influence of organic matter. Waste Management, 2011, 31, 2036-2045.	7.4	29
51	Evaluation of a novel correction procedure to remove electrode impedance effects from broadband SIP measurements. Journal of Applied Geophysics, 2016, 135, 466-473.	2.1	28
52	Pb(II) and Zn(II) adsorption onto Na- and Ca-montmorillonites in acetic acid/acetate medium: Experimental approach and geochemical modeling. Journal of Colloid and Interface Science, 2011, 361, 238-246.	9.4	27
53	Strontium distribution and origins in a natural clayey formation (Callovian-Oxfordian, Paris Basin,) Tj ETQq1 1 0.784314 rgBT /Overlock	3.9	26
54	In-situ determination of the kinetics and mechanisms of nickel adsorption by nanocrystalline vernadite. Chemical Geology, 2017, 459, 24-31.	3.3	26

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55	Retention of arsenic, chromium and boron on an outcropping clay-rich rock formation (the TÃ©gulines) Tj ETQq1 1 0.784314 rgBT /Ove	8.0	26
56	<i>In situ</i> diffusion test of hydrogen gas in the Opalinus Clay. Geological Society Special Publication, 2014, 400, 563-578.	1.3	24
57	Simulation of Cement/Clay Interactions: Feedback on the Increasing Complexity of Modelling Strategies. Transport in Porous Media, 2014, 104, 385-405.	2.6	24
58	Modelling CEC variations versus structural iron reduction levels in dioctahedral smectites. Existing approaches, new data and model refinements. Journal of Colloid and Interface Science, 2013, 407, 397-409.	9.4	23
59	Porosities accessible to HTO and iodide on water-saturated compacted clay materials and relation with the forms of water: A low field proton NMR study. Geochimica Et Cosmochimica Acta, 2009, 73, 7290-7302.	3.9	21
60	Spectral induced polarization of Na-montmorillonite dispersions. Journal of Colloid and Interface Science, 2017, 505, 1093-1110.	9.4	21
61	Nucleation and growth of feitknechtite from nanocrystalline vernadite precursor. European Journal of Mineralogy, 2017, 29, 767-776.	1.3	21
62	Biogeochemical processes in a clay formation in situ experiment: Part F â€“ Reactive transport modelling. Applied Geochemistry, 2011, 26, 1009-1022.	3.0	20
63	Self-Diffusion of Water and Ions in Clay Barriers. Developments in Clay Science, 2015, , 189-226.	0.5	20
64	The influence of natural trace element distribution on the mobility of radionuclides. The exemple of nickel in a clay-rock. Applied Geochemistry, 2015, 52, 155-173.	3.0	20
65	Pitfalls in using the hexaamminecobalt method for cation exchange capacity measurements on clay minerals and clay-rocks: Redox interferences between the cationic dye and the sample.. Applied Clay Science, 2016, 119, 393-400.	5.2	20
66	Effects of a thermal perturbation on mineralogy and pore water composition in a clay-rock: An experimental and modeling study. Geochimica Et Cosmochimica Acta, 2017, 197, 193-214.	3.9	19
67	A Poreâ€Scale Investigation of Mineral Precipitation Driven Diffusivity Change at the Columnâ€Scale. Water Resources Research, 2021, 57, e2020WR028483.	4.2	19
68	Biogeochemical processes in a clay formation in situ experiment: Part G â€“ Key interpretations and conclusions. Implications for repository safety. Applied Geochemistry, 2011, 26, 1023-1034.	3.0	18
69	Comparative EPMA and Î¼-XRF methods for mapping micro-scale distribution of iodine in biocarbonates of the Callovianâ€“Oxfordian clayey formation at Bure, Eastern part of the Paris Basin. Physics and Chemistry of the Earth, 2010, 35, 271-277.	2.9	17
70	Chemical Conditions in Clay-Rocks. Developments in Clay Science, 2015, 6, 71-100.	0.5	17
71	Modeling diffusion processes in the presence of a diffuse layer at charged mineral surfaces: a benchmark exercise. Computational Geosciences, 2021, 25, 1319-1336.	2.4	17
72	Influence of Polarizability on the Prediction of the Electrical Double Layer Structure in a Clay Mesopore: A Molecular Dynamics Study. Journal of Physical Chemistry C, 2020, 124, 6221-6232.	3.1	17

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73	From experimental variability to the sorption related retention parameters necessary for performance assessment models for nuclear waste disposal systems: The example of Pb adsorption on clay minerals. Applied Clay Science, 2018, 163, 20-32.	5.2	16
74	Mechanistic and Thermodynamic Insights into Anion Exchange by Green Rust. Environmental Science & Technology, 2020, 54, 851-861.	10.0	16
75	Identification of montmorillonite particle edge orientations by atomic-force microscopy. Applied Clay Science, 2020, 186, 105442.	5.2	15
76	porousMedia4Foam: Multi-scale open-source platform for hydro-geochemical simulations with OpenFOAMÂ®. Environmental Modelling and Software, 2021, 145, 105199.	4.5	14
77	Identification of nanocrystalline goethite in reduced clay formations: Application to the Callovian-Oxfordian formation of Bure (France). American Mineralogist, 2015, 100, 1544-1553.	1.9	13
78	Controls of Ca/Mg/Fe Activity Ratios in Pore Water Chemistry Models of the Callovian-Oxfordian Clay Formation. Procedia Earth and Planetary Science, 2013, 7, 475-478.	0.6	12
79	Quantitative mineralogical mapping of hydrated low pH concrete. Cement and Concrete Composites, 2017, 83, 360-373.	10.7	12
80	Thermodynamic and crystallographic model for anion uptake by hydrated calcium aluminate (AFm): an example of molybdenum. Scientific Reports, 2018, 8, 7943.	3.3	12
81	A Deep Alteration and Oxidation Profile in a Shallow Clay Aquitard: Example of the TÃ©gulines Clay, East Paris Basin, France. Geofluids, 2018, 2018, 1-20.	0.7	12
82	Adsorption and Heterogeneous Reduction of Arsenic at the Phyllosilicate-Water Interface. ACS Symposium Series, 2005, , 41-59.	0.5	11
83	Solving the Nernstâ€Planck Equation in Heterogeneous Porous Media With Finite Volume Methods: Averaging Approaches at Interfaces. Water Resources Research, 2020, 56, e2019WR026832.	4.2	11
84	Deciphering mineralogical changes and carbonation development during hydration and ageing of a consolidated ternary blended cement paste. IUCrJ, 2018, 5, 150-157.	2.2	11
85	Competitive Adsorption Processes at Clay Mineral Surfaces: A Coupled Experimental and Modeling Approach. ACS Earth and Space Chemistry, 2022, 6, 144-159.	2.7	11
86	Spectral induced polarization of low-pH cement and concrete. Cement and Concrete Composites, 2019, 104, 103397.	10.7	9
87	A model for discrete fracture-clay rock interaction incorporating electrostatic effects on transport. Computational Geosciences, 2021, 25, 395-410.	2.4	9
88	Impact of microstructure on anion exclusion in compacted clay media. , 2016, , 137-149.		8
89	Weathering of an argillaceous rock in the presence of atmospheric conditions: A flow-through experiment and modelling study. Applied Geochemistry, 2018, 96, 252-263.	3.0	7
90	Constraints from sulfur isotopes on the origin of gypsum at concrete/claystone interfaces. Physics and Chemistry of the Earth, 2014, 70-71, 84-95.	2.9	5

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91	Influence of Water Saturation Level on Electrical Double Layer Properties in a Clay Mineral Mesopore: A Molecular Dynamics Study. Journal of Physical Chemistry C, 2022, 126, 647-654.	3.1	5
92	9. Ionic Transport in Nano-Porous Clays with Consideration of Electrostatic Effects. , 2015, , 287-330.		3
93	Role of Carbonate Minerals in the Distribution of Trace Elements in Marine Clay Formations. Procedia Earth and Planetary Science, 2017, 17, 798-801.	0.6	3
94	Effect of Trace Elements on Carbonate Thermodynamic Constants. Procedia Earth and Planetary Science, 2017, 17, 730-733.	0.6	2
95	Impact of Microstructure on Anion Exclusion in Compacted Clay Media. , 0, , 137-149.		2
96	Summary and Perspective. Developments in Clay Science, 2015, , 419-422.	0.5	1
97	4. Reactive Transport Modeling of Coupled Processes in Nanoporous Media. , 2019, , 75-110.		0
98	Fate of Gluconic Acid in Context of Radioactive Waste Disposal: Batch Experiments. , 2019, , .		0