

# Ec Gaucher

## List of Publications by Year in descending order

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104  
papers

3,965  
citations

109321

35  
h-index

128289

60  
g-index

104  
all docs

104  
docs citations

104  
times ranked

2894  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Thermoddem: A geochemical database focused on low temperature water/rock interactions and waste materials. <i>Applied Geochemistry</i> , 2012, 27, 2107-2116.  | 3.0  | 350       |
| 2  | ANDRA underground research laboratory: interpretation of the mineralogical and geochemical data acquired in the Callovian-Oxfordian formation by investigative drilling. <i>Physics and Chemistry of the Earth</i> , 2004, 29, 55-77.                        | 2.9  | 275       |
| 3  | Cement/clay interactions – A review: Experiments, natural analogues, and modeling. <i>Waste Management</i> , 2006, 26, 776-788.  | 7.4  | 222       |
| 4  | A robust model for pore-water chemistry of clayrock. <i>Geochimica Et Cosmochimica Acta</i> , 2009, 73, 6470-6487.   | 3.9  | 177       |
| 5  | Modelling the porewater chemistry of the Callovian-Oxfordian formation at a regional scale. <i>Comptes Rendus - Geoscience</i> , 2006, 338, 917-930.   | 1.2  | 135       |
| 6  | Chemical model for cement-based materials: Temperature dependence of thermodynamic functions for nanocrystalline and crystalline Ca-S-H phases. <i>Cement and Concrete Research</i> , 2010, 40, 851-866.   | 11.0 | 132       |
| 7  | Influence of reaction kinetics and mesh refinement on the numerical modelling of concrete/clay interactions. <i>Journal of Hydrology</i> , 2009, 364, 58-72.   | 5.4  | 125       |
| 8  | Modeling diffusion of an alkaline plume in a clay barrier. <i>Applied Geochemistry</i> , 2004, 19, 1505-1515.  | 3.0  | 99        |
| 9  | Geosynthetic Clay Liner Interaction with Leachate: Correlation between Permeability, Microstructure, and Surface Chemistry. <i>Journal of Geotechnical and Geoenvironmental Engineering - ASCE</i> , 2005, 131, 740-749.                                     | 3.0  | 88        |
| 10 | Chemical model for cement-based materials: Thermodynamic data assessment for phases other than Ca-S-H. <i>Cement and Concrete Research</i> , 2010, 40, 1360-1374.  | 11.0 | 88        |
| 11 | Cation Exchange Selectivity Coefficient Values on Smectite and Mixed-Layer Illite/Smectite Minerals. <i>Soil Science Society of America Journal</i> , 2009, 73, 928-942.   | 2.2  | 73        |
| 12 | Predicting long-term geochemical alteration of wellbore cement in a generic geological CO <sub>2</sub> confinement site: Tackling a difficult reactive transport modeling challenge. <i>Journal of Hydrology</i> , 2012, 420-421, 340-359.                   | 5.4  | 71        |
| 13 | Selection of coals of different maturities for CO <sub>2</sub> Storage by modelling of CH <sub>4</sub> and CO <sub>2</sub> adsorption isotherms. <i>International Journal of Coal Geology</i> , 2011, 87, 80-86.   | 5.0  | 67        |
| 14 | Ex situ mineral carbonation for CO <sub>2</sub> mitigation: Evaluation of mining waste resources, aqueous carbonation processability and life cycle assessment (Carmex project). <i>Minerals Engineering</i> , 2014, 59, 52-63.                              | 4.3  | 66        |
| 15 | Biogeochemical processes in a clay formation in situ experiment: Part E – Equilibrium controls on chemistry of pore water from the Opalinus Clay, Mont Terri Underground Research Laboratory, Switzerland. <i>Applied Geochemistry</i> , 2011, 26, 990-1008. | 3.0  | 63        |
| 16 | Na <sup>+</sup> and HTO diffusion in compacted bentonite: Effect of surface chemistry and related texture. <i>Journal of Hydrology</i> , 2009, 370, 9-20.  | 5.4  | 62        |
| 17 | Thermodynamic properties of illite, smectite and beidellite by calorimetric methods: Enthalpies of formation, heat capacities, entropies and Gibbs free energies of formation. <i>Geochimica Et Cosmochimica Acta</i> , 2012, 89, 279-301.                   | 3.9  | 61        |
| 18 | Mineralogical and isotopic record of biotic and abiotic diagenesis of the Callovian-Oxfordian clayey formation of Bure (France). <i>Geochimica Et Cosmochimica Acta</i> , 2011, 75, 2633-2663.   | 3.9  | 59        |

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|----|---|------|-----------|
| 19 | Arsenic behaviour in gold-ore mill tailings, Massif Central, France: hydrogeochemical study and investigation of in situ redox signatures. <i>Applied Geochemistry</i> , 2004, 19, 1785-1800.   | 3.0  | 58        |
| 20 | Natural iodine in a clay formation: Implications for iodine fate in geological disposals. <i>Geochimica Et Cosmochimica Acta</i> , 2010, 74, 16-29.   | 3.9  | 58        |
| 21 | Thermodynamic properties of anhydrous smectite MX-80, illite IMt-2 and mixed-layer illite-smectite ISCz-1 as determined by calorimetric methods. Part I: Heat capacities, heat contents and entropies. <i>Geochimica Et Cosmochimica Acta</i> , 2007, 71, 5463-5473.          | 3.9  | 57        |
| 22 | Applying the squeezing technique to highly consolidated clayrocks for pore water characterisation: Lessons learned from experiments at the Mont Terri Rock Laboratory. <i>Applied Geochemistry</i> , 2014, 49, 2-21.  | 3.0  | 54        |
| 23 | Origins of elements building travertine and tufa: New perspectives provided by isotopic and geochemical tracers. <i>Sedimentary Geology</i> , 2016, 334, 97-114.  | 2.1  | 53        |
| 24 | On the mobility and potential retention of iodine in the Callovian-Oxfordian formation. <i>Physics and Chemistry of the Earth</i> , 2007, 32, 539-551.  | 2.9  | 50        |
| 25 | A generalized model for predicting the thermodynamic properties of clay minerals. <i>Numerische Mathematik</i> , 2015, 315, 734-780.  | 1.4  | 50        |
| 26 | Two cation exchange models for direct and inverse modelling of solution major cation composition in equilibrium with illite surfaces. <i>Geochimica Et Cosmochimica Acta</i> , 2007, 71, 1098-1114.   | 3.9  | 48        |
| 27 | Experimental Measurement of CO <sub>2</sub> Solubility in Aqueous NaCl Solution at Temperature from 323.15 to 423.15 K and Pressure of up to 20 MPa. <i>Journal of Chemical &amp; Engineering Data</i> , 2016, 61, 3573-3584.   | 1.9  | 47        |
| 28 | Geochemical characterization and modelling of the Toarcian/Domerian porewater at the Tournemire underground research laboratory. <i>Applied Geochemistry</i> , 2012, 27, 1417-1431.   | 3.0  | 45        |
| 29 | Dissolution kinetics of synthetic Na-smectite. An integrated experimental approach. <i>Geochimica Et Cosmochimica Acta</i> , 2011, 75, 5849-5864.   | 3.9  | 44        |
| 30 | Benchmarks for multicomponent reactive transport across a cement/clay interface. <i>Computational Geosciences</i> , 2015, 19, 635-653.  | 2.4  | 43        |
| 31 | In-situ interaction of cement paste and shotcrete with claystones in a deep disposal context. <i>Numerische Mathematik</i> , 2012, 312, 314-356.  | 1.4  | 42        |
| 32 | Biogeochemical processes in a clay formation in situ experiment: Part A – Overview, experimental design and water data of an experiment in the Opalinus Clay at the Mont Terri Underground Research Laboratory, Switzerland. <i>Applied Geochemistry</i> , 2011, 26, 931-953. | 3.0  | 40        |
| 33 | Development of an attrition-leaching hybrid process for direct aqueous mineral carbonation. <i>Chemical Engineering Journal</i> , 2015, 262, 716-726.   | 12.7 | 40        |
| 34 | Cation exchanged Fe(II) and Sr compared to other divalent cations (Ca,Mg) in the bure Callovian-Oxfordian formation: Implications for porewater composition modelling. <i>Applied Geochemistry</i> , 2008, 23, 641-654.   | 3.0  | 39        |
| 35 | Quantifying the extent of flowback of hydraulic fracturing fluids using chemical and isotopic tracer approaches. <i>Applied Geochemistry</i> , 2018, 93, 20-29.   | 3.0  | 38        |
| 36 | Geochemical and sulfate isotopic evolution of flowback and produced waters reveals water-rock interactions following hydraulic fracturing of a tight hydrocarbon reservoir. <i>Science of the Total Environment</i> , 2019, 687, 1389-1400.                                   | 8.0  | 37        |

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|----|--|-----|-----------|
| 37 | Thermodynamic properties of chlorite CCa-2. Heat capacities, heat contents and entropies. <i>Geochimica Et Cosmochimica Acta</i> , 2009, 73, 4738-4749.  | 3.9 | 35        |
| 38 | New Perspectives in the Industrial Exploration for Native Hydrogen. <i>Elements</i> , 2020, 16, 8-9.   | 0.5 | 34        |
| 39 | The lacustrine microbial carbonate factory of the successive Lake Bonneville and Great Salt Lake, Utah, <scp>USA</scp>. <i>Sedimentology</i> , 2019, 66, 165-204.  | 3.1 | 33        |
| 40 | Experimental Measurement of CO <sub>2</sub> Solubility in Aqueous CaCl <sub>2</sub> Solution at Temperature from 323.15 to 423.15 K and Pressure up to 20 MPa Using the Conductometric Titration. <i>Journal of Chemical &amp; Engineering Data</i> , 2017, 62, 4228-4234. | 1.9 | 30        |
| 41 | Estimate of clay minerals amounts from XRD pattern modeling: The Arquant model. <i>Physics and Chemistry of the Earth</i> , 2007, 32, 135-144.   | 2.9 | 29        |
| 42 | Metal speciation in landfill leachates with a focus on the influence of organic matter. <i>Waste Management</i> , 2011, 31, 2036-2045.   | 7.4 | 29        |
| 43 | Strontium distribution and origins in a natural clayey formation (Callovian-Oxfordian, Paris Basin,) Tj ETQq1 1 0.784314 rgBT /Overlo  | 3.9 | 26        |
| 44 | Mineralogical and Isotopic Record of Diagenesis from the Opalinus Clay Formation at Benken, Switzerland: Implications for the Modeling of Pore-Water Chemistry in a Clay Formation. <i>Clays and Clay Minerals</i> , 2014, 62, 286-312.                                    | 1.3 | 25        |
| 45 | Oligo-Miocene lacustrine microbial and metazoan buildups from the Limagne Basin (French Massif) Tj ETQq1 1 0.784314 rgBT /Overlo   | 2.3 | 25        |
| 46 | Native H <sub>2</sub> Exploration in the Western Pyrenean Foothills. <i>Geochemistry, Geophysics, Geosystems</i> , 2021, 22, e2021GC009917.  | 2.5 | 25        |
| 47 | Simulation of Cement/Clay Interactions: Feedback on the Increasing Complexity of Modelling Strategies. <i>Transport in Porous Media</i> , 2014, 104, 385-405.  | 2.6 | 24        |
| 48 | Stable isotope composition of CO <sub>2</sub> outgassed from cores of argillites: a simple method to constrain $\delta^{18}O$ of porewater and $\delta^{13}C$ of dissolved carbon in mudrocks. <i>Applied Geochemistry</i> , 2005, 20, 713-725.                            | 3.0 | 23        |
| 49 | Thermodynamic properties of saponite, nontronite, and vermiculite derived from calorimetric measurements. <i>American Mineralogist</i> , 2013, 98, 1834-1847.  | 1.9 | 21        |
| 50 | Volcanic rock alterations of the Kwanza Basin, offshore Angola - Insights from an integrated petrological, geochemical and numerical approach. <i>Marine and Petroleum Geology</i> , 2017, 80, 394-411.  | 3.3 | 21        |
| 51 | Rift and salt-related multi-phase dolomitization: example from the northwestern Pyrenees. <i>Marine and Petroleum Geology</i> , 2021, 126, 104932.   | 3.3 | 21        |
| 52 | Biogeochemical processes in a clay formation in situ experiment: Part F " Reactive transport modelling. <i>Applied Geochemistry</i> , 2011, 26, 1009-1022.   | 3.0 | 20        |
| 53 | Hydrogeochemical models locating sulfate-methane transition zone in marine sediments overlying black shales: A new tool to locate biogenic methane?. <i>Marine and Petroleum Geology</i> , 2015, 59, 563-574.  | 3.3 | 20        |
| 54 | Formation of magnesium-smectite during lacustrine carbonates early diagenesis: Study case of the volcanic crater lake Dziani Dzaha (Mayotte " Indian Ocean). <i>Sedimentology</i> , 2019, 66, 983-1001.  | 3.1 | 20        |

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|----|--|-----|-----------|
| 55 | Thermodynamic evidence of giant salt deposit formation by serpentinization: an alternative mechanism to solar evaporation. <i>Scientific Reports</i> , 2019, 9, 11720.   | 3.3 | 20        |
| 56 | Biogeochemical processes in a clay formation in situ experiment: Part B – Results from overcoring and evidence of strong buffering by the rock formation. <i>Applied Geochemistry</i> , 2011, 26, 954-966.   | 3.0 | 19        |
| 57 | Effects of a thermal perturbation on mineralogy and pore water composition in a clay-rock: An experimental and modeling study. <i>Geochimica Et Cosmochimica Acta</i> , 2017, 197, 193-214.  | 3.9 | 19        |
| 58 | Biotic – Abiotic Influences on Modern Ca – Si-Rich Hydrothermal Spring Mounds of the Pastos Grandes Volcanic Caldera (Bolivia). <i>Minerals (Basel, Switzerland)</i> , 2019, 9, 380.   | 2.0 | 19        |
| 59 | Effects of smectite dehydration and illitisation on overpressures in sedimentary basins: A coupled chemical and thermo-hydro-mechanical modelling approach. <i>Marine and Petroleum Geology</i> , 2020, 111, 166-178.  | 3.3 | 19        |
| 60 | Impact of geodynamics on fluid circulation and diagenesis of carbonate reservoirs in a foreland basin: Example of the Upper Lacq reservoir (Aquitaine basin, SW France). <i>Marine and Petroleum Geology</i> , 2020, 111, 676-694.                                       | 3.3 | 19        |
| 61 | Coal laboratory characterisation for CO <sub>2</sub> geological storage. <i>Energy Procedia</i> , 2011, 4, 3147-3154.  | 1.8 | 18        |
| 62 | Early Diagenesis of Lacustrine Carbonates in Volcanic Settings: The Role of Magmatic CO <sub>2</sub> (Lake Dziani Dzaha, Mayotte, Indian Ocean). <i>ACS Earth and Space Chemistry</i> , 2020, 4, 363-378.  | 2.7 | 18        |
| 63 | Comparative EPMA and <sup>127</sup> I-XRF methods for mapping micro-scale distribution of iodine in biocarbonates of the Callovian – Oxfordian clayey formation at Bure, Eastern part of the Paris Basin. <i>Physics and Chemistry of the Earth</i> , 2010, 35, 271-277. | 2.9 | 17        |
| 64 | Chemical Conditions in Clay-Rocks. <i>Developments in Clay Science</i> , 2015, 6, 71-100.  | 0.5 | 17        |
| 65 | The Role of the Substrate on the Mineralization Potential of Microbial Mats in A Modern Freshwater River (Paris Basin, France). <i>Minerals (Basel, Switzerland)</i> , 2019, 9, 359.   | 2.0 | 17        |
| 66 | Diversity and origin of quartz cements in continental carbonates: Example from the Lower Cretaceous rift deposits of the South Atlantic margin. <i>Applied Geochemistry</i> , 2019, 100, 22-41.  | 3.0 | 17        |
| 67 | Diagenesis in Mesozoic carbonate rocks in the North Pyrénées (France) from mineralogy and fluid inclusion analysis: Example of Rousse reservoir and caprock. <i>Chemical Geology</i> , 2019, 508, 30-46.   | 3.3 | 16        |
| 68 | Thermodynamics for clay minerals: Calculation tools and application to the case of illite/smectite interstratified minerals. <i>Applied Geochemistry</i> , 2021, 130, 104986.  | 3.0 | 16        |
| 69 | Nature and Origin of Mineralizing Fluids in Hyperextensional Systems: The Case of Cretaceous Mg Metasomatism in the Pyrenees. <i>Geofluids</i> , 2019, 2019, 1-18.   | 0.7 | 14        |
| 70 | Prediction of the calcium carbonate budget in a sedimentary basin: A “source – sink” approach applied to Great Salt Lake, Utah, USA. <i>Basin Research</i> , 2020, 32, 1005-1034.  | 2.7 | 13        |
| 71 | Sequential extraction and spectroscopic characterisation of organic matter from the Callovo-Oxfordian formation. <i>Organic Geochemistry</i> , 2010, 41, 221-233.  | 1.8 | 12        |
| 72 | Controls of Ca/Mg/Fe Activity Ratios in Pore Water Chemistry Models of the Callovian-Oxfordian Clay Formation. <i>Procedia Earth and Planetary Science</i> , 2013, 7, 475-478.   | 0.6 | 12        |

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|----|--|-----|-----------|
| 73 | Thermodynamic properties of chlorite and berthierine derived from calorimetric measurements. <i>Physics and Chemistry of Minerals</i> , 2014, 41, 603-615.   | 0.8 | 12        |
| 74 | Dissolved CO2 and Alkane Gas in Clay Formations. <i>Procedia Earth and Planetary Science</i> , 2015, 13, 88-91.  | 0.6 | 12        |
| 75 | Equilibrium partial pressure of CO2 in Callovian-Oxfordian argillite as a function of relative humidity: Experiments and modelling. <i>Geochimica Et Cosmochimica Acta</i> , 2016, 186, 91-104.  | 3.9 | 12        |
| 76 | Equilibrium Partial Pressure of CO2 in the Callovo-Oxfordian Argillite as a Function of Relative Humidity. <i>Procedia Earth and Planetary Science</i> , 2013, 7, 459-462.   | 0.6 | 11        |
| 77 | Metals and radionuclides (MaR) in the Alum Shale of Denmark: Identification of MaR-bearing phases for the better management of hydraulic fracturing waters. <i>Journal of Natural Gas Science and Engineering</i> , 2018, 53, 139-152. | 4.4 | 11        |
| 78 | Simulations of the Impact of Co-injected Gases on CO2 Storage, the SIGARRR Project: First Results on Water-gas Interactions Modeling. <i>Energy Procedia</i> , 2014, 63, 3160-3171.  | 1.8 | 10        |
| 79 | The origin of continental carbonates in Andean salars: A multi-tracer geochemical approach in Laguna Pastos Grandes (Bolivia). <i>Geochimica Et Cosmochimica Acta</i> , 2020, 279, 220-237.  | 3.9 | 9         |
| 80 | Natural gas of radiolytic origin: An overlooked component of shale gas. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, e2114720119.   | 7.1 | 9         |
| 81 | Variability of Carbonate Isotope Signatures in a Hydrothermally Influenced System: Insights from the Pastos Grandes Caldera (Bolivia). <i>Minerals (Basel, Switzerland)</i> , 2020, 10, 989.   | 2.0 | 8         |
| 82 | Epigenic vs. hypogenic speleogenesis governed by H2S/CO2 hydrothermal input and Quaternary icefield dynamics (NE French Pyrenees). <i>Geomorphology</i> , 2021, 387, 107769.   | 2.6 | 7         |
| 83 | Simulations of the Impact of Co-injected Gases on CO2 Storage, the SIGARRR Project: Processes and Geochemical Approaches for Gas-water-Salt Interactions Modeling. <i>Energy Procedia</i> , 2017, 114, 3322-3334.                      | 1.8 | 5         |
| 84 | The diagenetic history of the giant Lacq gas field, witness to the apto-albian rifting and the Pyrenean orogeny, revealed by fluid and basin modeling. <i>Marine and Petroleum Geology</i> , 2021, 133, 105250.                        | 3.3 | 5         |
| 85 | Quantification of carbon dioxide sourced by mineral reactions in ultradeep sedimentary basins. <i>Marine and Petroleum Geology</i> , 2017, 81, 112-133.  | 3.3 | 3         |
| 86 | Natural CH4 Gas Seeps in the French Alps: Characteristics, Typology and Contribution to CH4 Natural Emissions to the Atmosphere. <i>Energy Procedia</i> , 2017, 114, 3020-3032.  | 1.8 | 3         |
| 87 | Thermodynamic properties of mixed-layer illite-smectite by calorimetric methods: Acquisition of the enthalpies of mixing of illite and smectite layers. <i>Journal of Chemical Thermodynamics</i> , 2019, 138, 78-97.                  | 2.0 | 3         |
| 88 | Overpressure generation by smectite dehydration in sedimentary basins constrained by salinity dilution and stable isotopes. <i>Applied Geochemistry</i> , 2021, 131, 105035.   | 3.0 | 3         |
| 89 | The North Pyrenean Frontal Thrust: structure, timing and late fluid circulation inferred from seismic and thermal-geochemical analyses of well data. <i>Bulletin - Societe Geologique De France</i> , 2021, 192, 52.                   | 2.2 | 3         |
| 90 | Toxic Metals in Shales: Questions and Methods for a Better Management of Flow-Back Waters.. , 2014, ,  |     | 2         |

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|-----|---|-----|-----------|
| 91  | Geochemistry of Aquifer in Contact with Alum Shale: Evidence of Limited Contaminant Transfers. <i>Procedia Earth and Planetary Science</i> , 2017, 17, 786-789.   | 0.6 | 2         |
| 92  | Rock Types in the Scandinavian Alum Shale Resource Play - Definitions and Predictions. , 2015, , .  |     | 2         |
| 93  | Unravelling the Processes of the H <sub>2</sub> S Generation in the North-western Pyrenees (France). , 2018, , .  |     | 2         |
| 94  | Successive Modes of Carbonate Precipitation in Microbialites along the Hydrothermal Spring of La Salsa in Laguna Pastos Grandes (Bolivian Altiplano). <i>Geosciences (Switzerland)</i> , 2022, 12, 88.                      | 2.2 | 2         |
| 95  | Experimental study of chemical evolution and isotope fractionation of Cl and Br in pore water expelled during strong clay compaction. <i>Applied Geochemistry</i> , 2022, 140, 105274.                                      | 3.0 | 2         |
| 96  | Toward the Sustainable Use of Groundwater Springs: A Case Study from Namibia. <i>Sustainability</i> , 2022, 14, 3995.   | 3.2 | 2         |
| 97  | Hydrothermal fluid circulations in the western Pyrenees: new data on stable isotopes, in-situ gas analysis and fluid inclusions. <i>E3S Web of Conferences</i> , 2019, 98, 01001.   | 0.5 | 1         |
| 98  | Cl/Br and $\delta^{37}\text{Cl}$ evolution in seawater expelled during the compaction of MX-80 smectite. <i>E3S Web of Conferences</i> , 2019, 98, 12022.   | 0.5 | 1         |
| 99  | Synsedimentary to early diagenetic rejuvenation of barite-sulfides ore deposits: Example of the Triassic intrakarstic mineralization in the Lodève basin (France). <i>Marine and Petroleum Geology</i> , 2020, 119, 104464. | 3.3 | 1         |
| 100 | Quaternary tectonic and climate changes at the origin of travertine and calcrete in the eastern Betics (Almería region, SE Spain). <i>Journal of the Geological Society</i> , 2020, 177, 939-954.                           | 2.1 | 1         |
| 101 | Mineralogical and geochemical study of serpentinized peridotites from the North-Western Pyrenees: New insights on serpentinization along magma-poor continental passive margins. <i>Lithos</i> , 2021, 406-407, 106521.     | 1.4 | 1         |
| 102 | Significance of H <sub>2</sub> and CO release during thermal treatment of natural phyllosilicate-rich rocks. <i>Chemical Geology</i> , 2022, 588, 120647.   | 3.3 | 1         |
| 103 | The origin of low salinity formation water in turbidite sandstone reservoirs: insights from natural isotopic and chemical tracers. , 2018, , .  |     | 0         |
| 104 | Halogen stable isotope studies in formation waters, a comparison between their chlorine and bromine isotope systematics. , 2018, , .  |     | 0         |