Gernot Rother

List of Publications by Year in descending order

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81 papers	3,452 citations	136885 32 h-index	143943 57 g-index
83 all docs	83 docs citations	83 times ranked	3923 citing authors

#	Article	IF	Citations
1	Effect of Metal Ion Intercalation on the Structure of MXene and Water Dynamics on its Internal Surfaces. ACS Applied Materials & Interfaces, 2016, 8, 8859-8863.	4.0	225
2	Pores in Marcellus Shale: A Neutron Scattering and FIB-SEM Study. Energy & Fuels, 2015, 29, 1295-1308.	2.5	177
3	Diagenetic changes in macro- to nano-scale porosity in the St. Peter Sandstone: An (ultra) small angle neutron scattering and backscattered electron imaging analysis. Geochimica Et Cosmochimica Acta, 2013, 102, 280-305.	1.6	134
4	Film Breakdown and Nano-Porous Mg(OH)₂Formation from Corrosion of Magnesium Alloys in Salt Solutions. Journal of the Electrochemical Society, 2015, 162, C140-C149.	1.3	128
5	Alkyl Chain Length and Temperature Effects on Structural Properties of Pyrrolidinium-Based Ionic Liquids: A Combined Atomistic Simulation and Small-Angle X-ray Scattering Study. Journal of Physical Chemistry Letters, 2012, 3, 125-130.	2.1	121
6	On sorption and swelling of CO2 in clays. Geomechanics and Geophysics for Geo-Energy and Geo-Resources, 2016, 2, 111-130.	1.3	116
7	Supercritical fluid behavior at nanoscale interfaces: Implications for CO₂sequestration in geologic formations. Philosophical Magazine, 2010, 90, 2339-2363.	0.7	111
8	Where fast weathering creates thin regolith and slow weathering creates thick regolith. Earth Surface Processes and Landforms, 2013, 38, 847-858.	1.2	99
9	Evolution of porosity and geochemistry in Marcellus Formation black shale during weathering. Chemical Geology, 2013, 356, 50-63.	1.4	98
10	Characterization of deep weathering and nanoporosity development in shale--A neutron study. American Mineralogist, 2011, 96, 498-512.	0.9	97
11	Observational evidence confirms modelling of the long-term integrity of CO2-reservoir caprocks. Nature Communications, 2016, 7, 12268.	5.8	97
12	CO₂ Sorption to Subsingle Hydration Layer Montmorillonite Clay Studied by Excess Sorption and Neutron Diffraction Measurements. Environmental Science & Technology, 2013, 47, 205-211.	4.6	96
13	Quantification of Organic Porosity and Water Accessibility in Marcellus Shale Using Neutron Scattering. Energy & Fuels, 2016, 30, 4438-4449.	2.5	96
14	A new approach to quantification of metamorphism using ultra-small and small angle neutron scattering. Geochimica Et Cosmochimica Acta, 2009, 73, 7303-7324.	1.6	82
15	How Porosity Increases During Incipient Weathering of Crystalline Silicate Rocks. Reviews in Mineralogy and Geochemistry, 2015, 80, 331-354.	2.2	81
16	Porosity and surface area evolution during weathering of two igneous rocks. Geochimica Et Cosmochimica Acta, 2013, 109, 400-413.	1.6	76
17	Internal Domains of Natural Porous Media Revealed: Critical Locations for Transport, Storage, and Chemical Reaction. Environmental Science & Technology, 2016, 50, 2811-2829.	4.6	76
18	Probing the deep critical zone beneath the Luquillo Experimental Forest, Puerto Rico. Earth Surface Processes and Landforms, 2013, 38, 1170-1186.	1.2	71

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19	Pore-Size-Dependent Calcium Carbonate Precipitation Controlled by Surface Chemistry. Environmental Science & Technology, 2014, 48, 6177-6183.	4.6	69
20	Distinctive Nanoscale Organization of Dicationic versus Monocationic Ionic Liquids. Journal of Physical Chemistry C, 2013, 117, 18251-18257.	1.5	66
21	How Oxidation and Dissolution in Diabase and Granite Control Porosity during Weathering. Soil Science Society of America Journal, 2015, 79, 55-73.	1.2	59
22	Experimental Study of Porosity Changes in Shale Caprocks Exposed to CO₂-Saturated Brines I: Evolution of Mineralogy, Pore Connectivity, Pore Size Distribution, and Surface Area. Environmental Engineering Science, 2016, 33, 725-735.	0.8	56
23	Densification of Ionic Liquid Molecules within a Hierarchical Nanoporous Carbon Structure Revealed by Small-Angle Scattering and Molecular Dynamics Simulation. Chemistry of Materials, 2014, 26, 1144-1153.	3.2	55
24	Hydrophobic Solvation of Gases (CO₂, CH₄, H₂, Noble Gases) in Clay Interlayer Nanopores. Journal of Physical Chemistry C, 2017, 121, 26539-26550.	1.5	52
25	Effect of quartz overgrowth precipitation on the multiscale porosity of sandstone: A (U)SANS and imaging analysis. Geochimica Et Cosmochimica Acta, 2015, 158, 199-222.	1.6	51
26	Pore Size Effects on the Sorption of Supercritical CO₂ in Mesoporous CPG-10 Silica. Journal of Physical Chemistry C, 2012, 116, 917-922.	1.5	50
27	FT-IR study of CO2 interaction with Na+ exchanged montmorillonite. Applied Clay Science, 2015, 114, 61-68.	2.6	48
28	Microstructural Characterization of Adsorption and Depletion Regimes of Supercritical Fluids in Nanopores. Journal of Physical Chemistry C, 2007, 111, 15736-15742.	1.5	47
29	Direct Measure of the Dense Methane Phase in Gas Shale Organic Porosity by Neutron Scattering. Energy & Fuels, 2016, 30, 9022-9027.	2.5	43
30	Multi-scale characterization of pore evolution in a combustion metamorphic complex, Hatrurim basin, Israel: Combining (ultra) small-angle neutron scattering and image analysis. Geochimica Et Cosmochimica Acta, 2013, 121, 339-362.	1.6	42
31	Monolayer films of PS-b-PEO diblock copolymers at the air/water- and an oil/water-interface. Colloid and Polymer Science, 1998, 276, 496-502.	1.0	38
32	Ionic liquid structure, dynamics, and electrosorption in carbon electrodes with bimodal pores and heterogeneous surfaces. Carbon, 2018, 129, 104-118.	5.4	36
33	Confinement effect on the adsorption from a binary liquid system near liquid/liquid phase separation. Journal of Chemical Physics, 2004, 120, 11864-11873.	1.2	32
34	On the pressure and temperature dependence of adsorption densities and other thermodynamic properties in gas shales. Chemical Engineering Journal, 2020, 395, 124989.	6.6	32
35	Toward understanding the structural heterogeneity and ion pair stability in dicationic ionic liquids. Soft Matter, 2014, 10, 9193-9200.	1.2	30
36	Aminopolymer Mobility and Support Interactions in Silica-PEI Composites for CO₂ Capture Applications: A Quasielastic Neutron Scattering Study. Journal of Physical Chemistry B, 2017, 121, 6721-6731.	1.2	30

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37	Direct Measurements of Pore Fluid Density by Vibrating Tube Densimetry. Langmuir, 2012, 28, 5070-5078.	1.6	29
38	Dynamics of Propane in Nanoporous Silica Aerogel: A Quasielastic Neutron Scattering Study. Journal of Physical Chemistry C, 2015, 119, 18188-18195.	1.5	29
39	Structure of Spontaneously Formed Solid-Electrolyte Interphase on Lithiated Graphite Determined Using Small-Angle Neutron Scattering. Journal of Physical Chemistry C, 2015, 119, 9816-9823.	1.5	28
40	Role of Confinement on Adsorption and Dynamics of Ethane and an Ethaneâ€“CO₂ Mixture in Mesoporous CPG Silica. Journal of Physical Chemistry C, 2016, 120, 4843-4853.	1.5	28
41	Fundamental Understanding of the Interaction of Acid Gases with CeO₂: From Surface Science to Practical Catalysis. Industrial & Engineering Chemistry Research, 2016, 55, 3909-3919.	1.8	26
42	The influence of a hierarchical porous carbon network on the coherent dynamics of a nanoconfined room temperature ionic liquid: A neutron spin echo and atomistic simulation investigation. Carbon, 2014, 78, 415-427.	5.4	24
43	Sorption Phase of Supercritical CO₂in Silica Aerogel: Experiments and Mesoscale Computer Simulations. Journal of Physical Chemistry C, 2014, 118, 15525-15533.	1.5	24
44	Adsorption of Fatty Acid Molecules on Amine-Functionalized Silica Nanoparticles: Surface Organization and Foam Stability. Langmuir, 2020, 36, 3703-3712.	1.6	24
45	De-mixing dynamics of a binary liquid system in a controlled-pore glass. European Physical Journal E, 2003, 12, 1-4.	0.7	23
46	Relationship between mineralogy and porosity in seals relevant to geologic CO2 sequestration. Environmental Geosciences, 2014, 21, 39-57.	0.6	23
47	The Green River Natural Analogue as A Field Laboratory To Study the Long-term Fate of CO2 in the subsurface. Energy Procedia, 2014, 63, 2821-2830.	1.8	23
48	Experimental Study of Porosity Changes in Shale Caprocks Exposed to Carbon Dioxide-Saturated Brine II: Insights from Aqueous Geochemistry. Environmental Engineering Science, 2016, 33, 736-744.	0.8	22
49	Poly(ethylene-alt-propylene)â€“poly(ethylene oxide) diblock copolymer micelles: a colloidal model system withtunable softness. Journal of Physics Condensed Matter, 2004, 16, S3821-S3834.	0.7	21
50	Effects of Confinement and Pressure on the Vibrational Behavior of Nano-Confined Propane. Journal of Physical Chemistry A, 2018, 122, 6736-6745.	1.1	20
51	Local structure of a phase-separating binary mixture in a mesoporous glass matrix studied by small-angle neutron scattering. Journal of Chemical Physics, 2005, 122, 244718.	1.2	19
52	Tracer Film Growth Study of the Corrosion of Magnesium Alloys AZ31B and ZE10A in 0.01% NaCl Solution. Journal of the Electrochemical Society, 2017, 164, C367-C375.	1.3	19
53	Structure and Dynamics of Fluids in Microporous and Mesoporous Earth and Engineered Materials. Neutron Scattering Applications and Techniques, 2009, , 547-570.	0.2	19
54	Water Uptake by Silica Nanopores: Impacts of Surface Hydrophilicity and Pore Size. Journal of Physical Chemistry C, 2020, 124, 15188-15194.	1.5	18

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55	Phase behavior and local structure of a binary mixture in pores: Mean-field lattice model calculations for analyzing neutron scattering data. Journal of Chemical Physics, 2005, 122, 124510.	1.2	17
56	Shear induced structures of soft colloids: Rheo-SANS experiments on kinetically frozen PEPâ€“PEO diblock copolymer micelles. Journal of Physics Condensed Matter, 2008, 20, 404206.	0.7	17
57	Unraveling the Dynamics of Aminopolymer/Silica Composites. Langmuir, 2016, 32, 2617-2625.	1.6	17
58	Effects of water on the stochastic motions of propane confined in MCM-41-S pores. Physical Chemistry Chemical Physics, 2019, 21, 25035-25046.	1.3	16
59	Reexamining supercritical gas adsorption theories in nano-porous shales under geological conditions. Fuel, 2021, 287, 119454.	3.4	15
60	Rapid Diffusion and Nanosegregation of Hydrogen in Magnesium Alloys from Exposure to Water. ACS Applied Materials & Interfaces, 2017, 9, 38125-38134.	4.0	14
61	Structure and dynamics of ethane confined in silica nanopores in the presence of CO2. Journal of Chemical Physics, 2020, 152, 084707.	1.2	14
62	Small-angle neutron scattering study of the wet and dry high-temperature oxidation of alumina- and chromia-forming stainless steels. Corrosion Science, 2012, 58, 121-132.	3.0	11
63	Directed Pore Uptake and Phase Separation of Surfactant Solutions under Confinement. Journal of Physical Chemistry C, 2019, 123, 9957-9966.	1.5	11
64	Predicting Effective Diffusion Coefficients in Mudrocks Using a Fractal Model and Smallâ€Angle Neutron Scattering Measurements. Water Resources Research, 2018, 54, 7076-7091.	1.7	10
65	Hierarchically Superstructured Metal Sulfides: Facile Perturbationâ€Assisted Nanofusion Synthesis and Visible Light Photocatalytic Characterizations. ChemNanoMat, 2016, 2, 1104-1110.	1.5	8
66	Molecular Structure of Adsorbed Water Phases in Silica Nanopores. Journal of Physical Chemistry C, 2022, 126, 2885-2895.	1.5	8
67	Nanoscale Interfacial Smoothing and Dissolution during Unconventional Reservoir Stimulation: Implications for Hydrocarbon Mobilization and Transport. ACS Applied Materials & Interfaces, 2021, 13, 15811-15819.	4.0	7
68	Interactions of an Imine Polymer with Nanoporous Silica and Carbon in Hybrid Adsorbents for Carbon Capture. Langmuir, 2021, 37, 4622-4631.	1.6	7
69	High-pressure cell for neutron reflectometry of supercritical and subcritical fluids at solid interfaces. Review of Scientific Instruments, 2012, 83, 045108.	0.6	6
70	10. How Porosity Increases During Incipient Weathering of Crystalline Silicate Rocks. , 2015, , 331-354.		5
71	Temporal Evolution of Corrosion Film Nano-Porosity and Magnesium Alloy Hydrogen Penetration in NaCl Solution. Journal of the Electrochemical Society, 2020, 167, 131513.	1.3	5
72	Predicting Fluid Flow Regime, Permeability, and Diffusivity in Mudrocks from Multiscale Pore Characterisation. Transport in Porous Media, 2022, 141, 201-229.	1.2	5

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73	Carbon-Bearing Fluids at Nanoscale Interfaces. Procedia Earth and Planetary Science, 2013, 7, 175-178.	0.6	4
74	From aggregative adsorption to surface depletion: aqueous systems of CnEm amphiphiles at hydrophilic surfaces. Molecular Physics, 2017, 115, 1408-1416.	0.8	4
75	Phase Separation of a Binary Liquid System in Controlled-Pore Glass. Materials Research Society Symposia Proceedings, 2003, 790, 1.	0.1	3
76	Adsorption and Depletion Regimes of a Nonionic Surfactant in Hydrophilic Mesopores: An Experimental and Simulation Study. Langmuir, 2017, 33, 11406-11416.	1.6	3
77	Supercritical Fluid Adsorption to Weakly Attractive Solids: Universal Scaling Laws. Journal of Physical Chemistry C, 2018, 122, 15558-15566.	1.5	3
78	Characterisation of nano-assemblies inside mesopores using neutron scattering*. Molecular Physics, 2021, 119, .	0.8	2
79	Nanometer to micrometer scale characterization of pore networks in fine-grained rocks using electron microscopy and small angle neutron scattering. Microscopy and Microanalysis, 2012, 18, 1954-1955.	0.2	1
80	Effect of temperature and pressure on the dynamics of nanoconfined propane. AIP Conference Proceedings, 2014, , .	0.3	1
81	Porosity in Reactive Geochemical Systems. World Scientific Series in Nanoscience and Nanotechnology, 2015, , 223-242.	0.1	0