Mohammad Piri

List of Publications by Year
in descending order

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110	4,516	117453	110170
papers	citations	34 h-index	64 g-index

112	112	112	3179
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Detailed physics, predictive capabilities and macroscopic consequences for pore-network models of multiphase flow. Advances in Water Resources, 2002, 25, 1069-1089.	1.7	583
2	Relative permeability hysteresis and capillary trapping characteristics of supercritical CO2/brine systems: An experimental study at reservoir conditions. Advances in Water Resources, 2013, 52, 190-206.	1.7	253
3	Wettability of Supercritical Carbon Dioxide/Water/Quartz Systems: Simultaneous Measurement of Contact Angle and Interfacial Tension at Reservoir Conditions. Langmuir, 2013, 29, 6856-6866.	1.6	211
4	Three-dimensional mixed-wet random pore-scale network modeling of two- and three-phase flow in porous media. I. Model description. Physical Review E, 2005, 71, 026301.	0.8	195
5	A review on capillary condensation in nanoporous media: Implications for hydrocarbon recovery from tight reservoirs. Fuel, 2016, 184, 344-361.	3.4	172
6	Equation-of-state modeling of confined-fluid phase equilibria in nanopores. Fluid Phase Equilibria, 2015, 393, 48-63.	1.4	118
7	Dynamic interfacial tension and wettability of shale in the presence of surfactants at reservoir conditions. Fuel, 2015, 148, 127-138.	3.4	108
8	The effects of SO2 contamination, brine salinity, pressure, and temperature on dynamic contact angles and interfacial tension of supercritical CO2/brine/quartz systems. International Journal of Greenhouse Gas Control, 2014, 28, 147-155.	2.3	107
9	The representative sample size in shale oil rocks and nano-scale characterization of transport properties. International Journal of Coal Geology, 2015, 146, 42-54.	1.9	96
10	Three-dimensional mixed-wet random pore-scale network modeling of two- and three-phase flow in porous media. II. Results. Physical Review E, 2005, 71, 026302.	0.8	89
11	A systematic experimental investigation on the synergistic effects of aqueous nanofluids on interfacial properties and their implications for enhanced oil recovery. Fuel, 2018, 220, 849-870.	3.4	89
12	Direct pore-to-core up-scaling of displacement processes: Dynamic pore network modeling and experimentation. Journal of Hydrology, 2015, 522, 488-509.	2.3	88
13	Atomistic Molecular Dynamics Simulations of Crude Oil/Brine Displacement in Calcite Mesopores. Langmuir, 2016, 32, 3375-3384.	1.6	85
14	Direct pore-level modeling of incompressible fluid flow in porous media. Journal of Computational Physics, 2010, 229, 7456-7476.	1.9	81
15	Multiscale study for stochastic characterization of shale samples. Advances in Water Resources, 2016, 89, 91-103.	1.7	81
16	Experimental Investigation of Dynamic Contact Angle and Capillary Rise in Tubes with Circular and Noncircular Cross Sections. Langmuir, 2014, 30, 14151-14162.	1.6	78
17	Predictive Pore-Scale Modeling of Single and Multiphase Flow. Transport in Porous Media, 2005, 58, 23-41.	1.2	76
18	Nano-scale experimental investigation of in-situ wettability and spontaneous imbibition in ultra-tight reservoir rocks. Advances in Water Resources, 2017, 107, 160-179.	1.7	74

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19	Adsorption of Asphaltenes in Porous Media under Flow Conditions. Energy & Fuels, 2010, 24, 6009-6017.	2.5	68
20	Micro-scale experimental investigation of the effect of flow rate on trapping in sandstone and carbonate rock samples. Advances in Water Resources, 2016, 94, 379-399.	1.7	62
21	Experimental investigation of trapped oil clusters in a waterâ€wet bead pack using Xâ€ray microtomography. Water Resources Research, 2010, 46, .	1.7	56
22	Dynamic adsorption of asphaltenes on quartz and calcite packs in the presence of brine films. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2013, 434, 260-267.	2.3	53
23	Effects of wettability and pore-level displacement on hydrocarbon trapping. Advances in Water Resources, 2008, 31, 503-512.	1.7	50
24	Pore-scale modeling of dispersion in disordered porous media. Journal of Contaminant Hydrology, 2011, 124, 68-81.	1.6	50
25	The effect of deformation on two-phase flow through proppant-packed fractured shale samples: A micro-scale experimental investigation. Advances in Water Resources, 2017, 105, 108-131.	1.7	50
26	Three-phase threshold capillary pressures in noncircular capillary tubes with different wettabilities including contact angle hysteresis. Physical Review E, 2004, 70, 061603.	0.8	49
27	Prediction of fluid occupancy in fractures using network modeling and x-ray microtomography. I: Data conditioning and model description. Physical Review E, 2007, 76, 016315.	0.8	49
28	Microemulsion-enhanced displacement of oil in porous media containing carbonate cements. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2017, 530, 60-71.	2.3	48
29	Molecular dynamics of wetting layer formation and forced water invasion in angular nanopores with mixed wettability. Journal of Chemical Physics, 2014, 141, 194703.	1.2	41
30	Equation-of-state modeling of associating-fluids phase equilibria in nanopores. Fluid Phase Equilibria, 2015, 405, 157-166.	1.4	40
31	Prediction of fluid occupancy in fractures using network modeling and x-ray microtomography. II: Results. Physical Review E, 2007, 76, 016316.	0.8	39
32	The effects of wettability and trapping on relationships between interfacial area, capillary pressure and saturation in porous media: A pore-scale network modeling approach. Journal of Hydrology, 2009, 376, 337-352.	2.3	39
33	Pore-scale Simulation of Water Alternate Gas Injection. Transport in Porous Media, 2007, 66, 259-286.	1.2	38
34	A Systematic Study on the Impact of Surfactant Chain Length on Dynamic Interfacial Properties in Porous Media: Implications for Enhanced Oil Recovery. Industrial & Engineering Chemistry Research, 2017, 56, 13677-13695.	1.8	37
35	Pore-Scale Network Modeling of Three-Phase Flow Based on Thermodynamically Consistent Threshold Capillary Pressures. I. Cusp Formation and Collapse. Transport in Porous Media, 2017, 116, 1093-1137.	1.2	35
36	A multi-scale experimental study of crude oil-brine-rock interactions and wettability alteration during low-salinity waterflooding. Fuel, 2019, 250, 117-131.	3.4	35

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37	Phenomenological Study of Confined Criticality: Insights from the Capillary Condensation of Propane, n-Butane, and n-Pentane in Nanopores. Langmuir, 2018, 34, 4473-4483.	1.6	34
38	Co-sequestration of SO2 with supercritical CO2 in carbonates: An experimental study of capillary trapping, relative permeability, and capillary pressure. Advances in Water Resources, 2015, 77, 44-56.	1.7	33
39	Capillary Condensation of Binary and Ternary Mixtures of n-Pentaneâ€“Isopentaneâ€“CO₂ in Nanopores: An Experimental Study on the Effects of Composition and Equilibrium. Langmuir, 2018, 34, 1967-1980.	1.6	33
40	A positively charged calcite surface model for molecular dynamics studies of wettability alteration. Journal of Colloid and Interface Science, 2020, 569, 128-139.	5.0	33
41	Nanoparticle-stabilized microemulsions for enhanced oil recovery from heterogeneous rocks. Fuel, 2020, 274, 117830.	3.4	31
42	Modeling the Solubility of SO₂ + CO₂ Mixtures in Brine at Elevated Pressures and Temperatures. Industrial & Engineering Chemistry Research, 2013, 52, 10864-10872.	1.8	30
43	Micro-scale experimental investigations of multiphase flow in oil-wet carbonates. I. In situ wettability and low-salinity waterflooding. Fuel, 2019, 257, 116014.	3.4	30
44	Pore-scale Network Modeling of Three-Phase Flow Based on Thermodynamically Consistent Threshold Capillary Pressures. II. Results. Transport in Porous Media, 2017, 116, 1139-1165.	1.2	27
45	Capillary condensation and capillary pressure of methane in carbon nanopores: Molecular Dynamics simulations of nanoconfinement effects. Fluid Phase Equilibria, 2018, 459, 196-207.	1.4	27
46	Capillary-condensation hysteresis in naturally-occurring nanoporous media. Fuel, 2020, 263, 116441.	3.4	27
47	Interfacial boundary conditions and residual trapping: A pore-scale investigation of the effects of wetting phase flow rate and viscosity using micro-particle image velocimetry. Fuel, 2018, 224, 560-578.	3.4	26
48	Pore-scale modeling of multiphase flow through porous media under triaxial stress. Advances in Water Resources, 2018, 122, 206-216.	1.7	24
49	In-situ capillary pressure and wettability in natural porous media: Multi-scale experimentation and automated characterization using X-ray images. Journal of Colloid and Interface Science, 2021, 603, 356-369.	5.0	24
50	Proppant-packed fractures in shale gas reservoirs: An in-situ investigation of deformation, wettability, and multiphase flow effects. Journal of Natural Gas Science and Engineering, 2018, 59, 387-405.	2.1	23
51	Modeling the Solubility of Nitrogen Dioxide in Water Using Perturbed-Chain Statistical Associating Fluid Theory. Industrial & Engineering Chemistry Research, 2013, 52, 16032-16043.	1.8	22
52	Molecular Dynamics Simulations of Retrograde Condensation in Narrow Oil-Wet Nanopores.. Journal of Physical Chemistry C, 2015, 119, 10040-10047.	1.5	22
53	Impact of Connate Brine Chemistry on In Situ Wettability and Oil Recovery: Pore-Scale Experimental Investigation. Energy & Fuels, 2020, 34, 4031-4045.	2.5	22
54	Micro-scale experimental investigations of multiphase flow in oil-wet carbonates. II. Tertiary gas injection and WAG. Fuel, 2019, 257, 116012.	3.4	21

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55	Effects of Surfactant Charge and Molecular Structure on Wettability Alteration of Calcite: Insights from Molecular Dynamics Simulations. Journal of Physical Chemistry B, 2021, 125, 1293-1305.	1.2	21
56	Pore-scale dissolution of CO2+ SO2 in deep saline aquifers. International Journal of Greenhouse Gas Control, 2013, 15, 119-133.	2.3	20
57	Effect of Surface Chemistry on Confined Phase Behavior in Nanoporous Media: An Experimental and Molecular Modeling Study. Langmuir, 2018, 34, 9349-9358.	1.6	20
58	Impact of mineralogy and wettability on pore-scale displacement of NAPLs in heterogeneous porous media. Journal of Contaminant Hydrology, 2020, 230, 103599.	1.6	20
59	Atomistic Molecular Dynamics Simulations of Surfactant-Induced Wettability Alteration in Crevices of Calcite Nanopores. Energy & Fuels, 2020, 34, 3135-3143.	2.5	20
60	Wettability Reversal on Dolomite Surfaces by Divalent Ions and Surfactants: An Experimental and Molecular Dynamics Simulation Study. Langmuir, 2021, 37, 6641-6649.	1.6	20
61	Interaction Between Fluid and Porous Media with Complex Geometries: A Direct Poreâ€Scale Study. Water Resources Research, 2018, 54, 6336-6356.	1.7	19
62	Twoâ€Phase Relative Permeability of Roughâ€Walled Fractures: A Dynamic Poreâ€Scale Modeling of the Effects of Aperture Geometry. Water Resources Research, 2021, 57, e2021WR030104.	1.7	19
63	Multi-GPU acceleration of direct pore-scale modeling of fluid flow in natural porous media. Computer Physics Communications, 2012, 183, 1890-1898.	3.0	18
64	Wettability alteration by Smart Water multi-ion exchange in carbonates: A molecular dynamics simulation study. Journal of Molecular Liquids, 2021, 332, 115830.	2.3	18
65	A pore-scale experimental investigation of process-dependent capillary desaturation. Advances in Water Resources, 2020, 144, 103702.	1.7	17
66	Wettability of Calcite Surfaces: Impacts of Brine Ionic Composition and Oil Phase Polarity at Elevated Temperature and Pressure Conditions. Langmuir, 2020, 36, 6079-6088.	1.6	17
67	The Effect of Wettability on Waterflood Oil Recovery in Carbonate Rock Samples: A Systematic Multi-scale Experimental Investigation. Transport in Porous Media, 2021, 138, 369-400.	1.2	17
68	Pore-to-Core Upscaling of Solute Transport Under Steady-State Two-Phase Flow Conditions Using Dynamic Pore Network Modeling Approach. Transport in Porous Media, 2020, 135, 181-218.	1.2	16
69	Surfactant-induced wettability reversal on oil-wet calcite surfaces: Experimentation and molecular dynamics simulations with scaled-charges. Journal of Colloid and Interface Science, 2022, 609, 890-900.	5.0	16
70	Pore-space alteration induced by brine acidification in subsurface geologic formations. Water Resources Research, 2014, 50, 440-452.	1.7	15
71	Salt precipitation during geological sequestration of supercritical CO2 in saline aquifers: A pore-scale experimental investigation. Advances in Water Resources, 2021, 155, 104011.	1.7	15
72	Heat of capillary condensation in nanopores: new insights from the equation of state. Physical Chemistry Chemical Physics, 2017, 19, 5540-5549.	1.3	14

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73	In-situ investigation of the impact of spreading on matrix-fracture interactions during three-phase flow in fractured porous media. Advances in Water Resources, 2019, 131, 103344.	1.7	14
74	Criticality of Confined Fluids Based on the Tensile Strength of Liquids. Industrial & Engineering Chemistry Research, 2020, 59, 10673-10688.	1.8	14
75	Application of material balance for the phase transition of fluid mixtures confined in nanopores. Fluid Phase Equilibria, 2019, 496, 31-41.	1.4	13
76	Relationship between molecular charge distribution and wettability reversal efficiency of cationic surfactants on calcite surfaces. Journal of Molecular Liquids, 2020, 318, 114009.	2.3	13
77	Microscale Investigation of the Impact of Surfactant Structure on the Residual Trapping in Natural Porous Media. Industrial & Engineering Chemistry Research, 2019, 58, 9397-9411.	1.8	12
78	Pore-scale experimental investigation of oil recovery enhancement in oil-wet carbonates using carbonaceous nanofluids. Scientific Reports, 2020, 10, 17539.	1.6	12
79	Quantitative analysis of phase topology evolution during three-phase displacements in porous media. Lab on A Chip, 2020, 20, 2495-2509.	3.1	12
80	Effects of chemical and physical heterogeneity on confined phase behavior in nanopores. Microporous and Mesoporous Materials, 2018, 263, 53-61.	2.2	11
81	Molecular Dynamics Simulations of the Vaporâ€“Liquid Equilibria in CO₂/n-Pentane, Propane/n-Pentane, and Propane/n-Hexane Binary Mixtures. Journal of Physical Chemistry B, 2021, 125, 6658-6669.	1.2	11
82	Pore-scale dynamics of nanofluid-enhanced NAPL displacement in carbonate rock. Journal of Contaminant Hydrology, 2020, 230, 103598.	1.6	10
83	Pore-Scale Sweep Efficiency Enhancement by Silica-Based Nanofluids in Oil-Wet Sandstone. Energy & Fuels, 2020, 34, 1297-1308.	2.5	10
84	Numerical modeling of strongly coupled microscale multiphase flow and solid deformation. International Journal for Numerical and Analytical Methods in Geomechanics, 2020, 44, 161-182.	1.7	10
85	Dynamic Pore-Scale Modeling of Residual Trapping Following Imbibition in a Rough-walled Fracture. Transport in Porous Media, 2021, 140, 143-179.	1.2	10
86	Near-miscible supercritical <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e911" altimg="si56.svg"><mml:msub><mml:mrow><mml:mi mathvariant="normal">CO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:math> injection in oil-wet carbonate: A pore-scale experimental investigation of wettability state and three-phase flow behavior. Advances in Water Resources, 2021, 158, 104057.	4.7	10
87	Retrograde behavior revisited: implications for confined fluid phase equilibria in nanopores. Physical Chemistry Chemical Physics, 2017, 19, 18890-18901.	1.3	9
88	Nanofluid-Induced Wettability Gradient and Imbibition Enhancement in Natural Porous Media: A Pore-scale Experimental Investigation. Transport in Porous Media, 2020, 134, 593-619.	1.2	9
89	Effect of Pore Size Distribution on Capillary Condensation in Nanoporous Media. Langmuir, 2021, 37, 2276-2288.	1.6	9
90	Wettability reversal on oil-wet calcite surfaces: Experimental and computational investigations of the effect of the hydrophobic chain length of cationic surfactants. Journal of Colloid and Interface Science, 2022, 619, 168-178.	5.0	9

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91	In Situ Investigation of Fluidâ€Rock Interactions at Ã…ngstrom Resolution. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB021043.	1.4	8
92	Effects of Temperature and Pressure on Interfacial Tensions of Fluid Mixtures. I. CO2/n-Pentane Binary. Journal of Chemical & Engineering Data, 2021, 66, 1977-1983.	1.0	8
93	Carbonated Water Injection and In Situ CO₂ Exsolution in Oil-Wet Carbonate: A Micro-Scale Experimental Investigation. Energy & Fuels, 2021, 35, 6615-6632.	2.5	8
94	Sub-nanometer scale investigation of in situ wettability using environmental transmission electron microscopy. Journal of Colloid and Interface Science, 2021, 593, 266-275.	5.0	8
95	The effects of in-situ emulsion formation and superficial velocity on foam performance in high-permeability porous media. Fuel, 2021, 306, 121575.	3.4	7
96	Pore diameter effects on phase behavior of a gas condensate in graphitic one-and two-dimensional nanopores. Journal of Molecular Modeling, 2016, 22, 22.	0.8	6
97	Estimation of Capillary Pressure in Unconventional Reservoirs Using Thermodynamic Analysis of Pore Images. Journal of Geophysical Research: Solid Earth, 2019, 124, 10893-10915.	1.4	6
98	Synergistic effects of surfactant mixtures on the displacement of nonaqueous phase liquids in porous media. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2019, 582, 123885.	2.3	6
99	On the prediction of three-phase relative permeabilities using two-phase constitutive relationships. Advances in Water Resources, 2020, 145, 103731.	1.7	5
100	An integrated site characterization-to-optimization study for commercial-scale carbon dioxide storage. International Journal of Greenhouse Gas Control, 2016, 44, 74-87.	2.3	3
101	Amorphization of carbon nanotubes in water by electron beam radiation. Carbon, 2020, 156, 313-319.	5.4	3
102	Effects of Temperature and Pressure on Interfacial Tensions of Fluid Mixtures. II. Propane/n-Pentane and Propane/n-Hexane Binaries. Journal of Chemical & Engineering Data, 2021, 66, 1984-1991.	1.0	3
103	Liquidâ€“Vapor Interfacial Tension in Alkane Mixtures: Improving Predictive Capabilities of Molecular Dynamics Simulations. Journal of Physical Chemistry B, 2022, 126, 1136-1146.	1.2	3
104	Carbonated Water Injection in Oil-Wet Carbonate Rock Samples: A Pore-Scale Experimental Investigation of the Effect of Brine Composition. Energy & Fuels, 2022, 36, 4847-4870.	2.5	3
105	On the Validation of a Compositional Model for the Simulation of $$ext {CO}_2$$ Injection into Saline Aquifers. Transport in Porous Media, 2017, 119, 25-56.	1.2	2
106	A Micro-Scale Experimental Investigation on the Impact of Varying Stress on Geo-Mechanical Deformation of Proppant-Packed Fractured Shale. Microscopy and Microanalysis, 2019, 25, 762-763.	0.2	1
107	Elastocapillarity modeling of multiphase flow-induced solid deformation using volume of fluid method. Journal of Computational Physics, 2020, 421, 109641.	1.9	1
108	Wettability in CO2/Brine/Quartz Systems: An Experimental Study at Reservoir Conditions. , 2012, , .		0

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109	Direct Pore-Scale Modeling of Flow and Transport in Tight Formations. , 2013, , .		0
110	Low-Temperature Graphene Growth and Shrinkage Dynamics from Petroleum Asphaltene on CuO Nanoparticle. Industrial & Engineering Chemistry Research, 2021, 60, 12001-12010.	1.8	0