Sean P Rigby

List of Publications by Year
in descending order

110 papers	2,984 citations	236925 25 h-index	189892 50 g-index
112 all docs	112 docs citations	112 times ranked	3203 citing authors

#	Article	IF	Citations
1	A review of novel techniques for heavy oil and bitumen extraction and upgrading. Energy and Environmental Science, 2010, 3, 700.	30.8	431
2	Solvent hydrolysis and templating effects in the synthesis of metalâ€“organic frameworks. CrystEngComm, 2005, 7, 548.	2.6	242
3	Liquid intrusion and alternative methods for the characterization of macroporous materials (IUPAC) Tj ETQq1 1 0.784314 rgBT /Overl	1.9	163
4	Effects of carbonation on the pore structure of non-hydraulic lime mortars. Cement and Concrete Research, 2007, 37, 1059-1069.	11.0	124
5	Characterisation of porous solids using integrated nitrogen sorption and mercury porosimetry. Chemical Engineering Science, 2004, 59, 41-51.	3.8	92
6	The Influence of Mercury Contact Angle, Surface Tension, and Retraction Mechanism on the Interpretation of Mercury Porosimetry Data. Journal of Colloid and Interface Science, 2002, 250, 175-190.	9.4	91
7	The characterization of macroporous solids: An overview of the methodology. Microporous and Mesoporous Materials, 2012, 154, 2-6.	4.4	76
8	Effects of high-pressure/temperature curing on reactive powder concrete microstructure formation. Construction and Building Materials, 2016, 105, 554-562.	7.2	73
9	An Experimental Study of Gas Adsorption on Fractal Surfaces. Langmuir, 2005, 21, 2281-2292.	3.5	72
10	Syntheses, structures and properties of cadmium benzenedicarboxylate metalâ€“organic frameworks. Dalton Transactions, 2008, , 2465.	3.3	63
11	Predicting surface diffusivities of molecules from equilibrium adsorption isotherms. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2005, 262, 139-149.	4.7	56
12	Selective incorporation of functional dicarboxylates into zinc metalâ€“organic frameworks. Chemical Communications, 2011, 47, 3380.	4.1	56
13	Experimental Optimization of Catalytic Process In Situ for Heavy-Oil and Bitumen Upgrading. Journal of Canadian Petroleum Technology, 2011, 50, 33-47.	2.3	54
14	NMR and confocal microscopy studies of the mechanisms of burst drug release from PLGA microspheres. Journal of Controlled Release, 2005, 108, 271-281.	9.9	50
15	Insights into the influence of the cooling profile on the reconstitution times of amorphous lyophilized protein formulations. European Journal of Pharmaceutics and Biopharmaceutics, 2015, 96, 247-254.	4.3	46
16	Dynamic Simulation of the Toe-to-Heel Air Injection Heavy Oil Recovery Process. Energy & Fuels, 2017, 31, 1276-1284.	5.1	45
17	A Hierarchical Structural Model for the Interpretation of Mercury Porosimetry and Nitrogen Sorption. Journal of Colloid and Interface Science, 2000, 224, 382-396.	9.4	37
18	Determination of the percolation properties and pore connectivity for mesoporous solids using NMR cryodiffusometry. Chemical Engineering Science, 2008, 63, 1929-1940.	3.8	37

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19	Interpreting mercury porosimetry data for catalyst supports using semi-empirical alternatives to the Washburn equation. Applied Catalysis A: General, 2003, 238, 303-318.	4.3	35
20	The Use of Magnetic Resonance Images in the Simulation of Diffusion in Porous Catalyst Support Pellets. Journal of Catalysis, 1998, 173, 484-489.	6.2	32
21	Experimental Evidence for Pore Blocking as the Mechanism for Nitrogen Sorption Hysteresis in a Mesoporous Material. Journal of Physical Chemistry B, 2004, 108, 4690-4695.	2.6	32
22	Numerical simulation of the impact of geological heterogeneity on performance and safety of THAI heavy oil production process. Journal of Petroleum Science and Engineering, 2019, 173, 1130-1148.	4.2	30
23	Studies of freezingâ€“melting hysteresis in cryoporometry scanning loop experiments using NMR diffusometry and relaxometry. Chemical Engineering Science, 2011, 66, 582-592.	3.8	29
24	Improving sensitivity and accuracy of pore structural characterisation using scanning curves in integrated gas sorption and mercury porosimetry experiments. Journal of Colloid and Interface Science, 2014, 417, 88-99.	9.4	29
25	NMR cryoporometry characterisation studies of the relation between drug release profile and pore structural evolution of polymeric nanoparticles. International Journal of Pharmaceutics, 2014, 469, 146-158.	5.2	27
26	The prediction of transport properties of porous media using fractal models and NMR experimental techniques. Chemical Engineering Science, 1999, 54, 3503-3512.	3.8	25
27	Characterisation of porous solids using a synergistic combination of nitrogen sorption, mercury porosimetry, electron microscopy and micro-focus X-ray imaging techniques. Physical Chemistry Chemical Physics, 2002, 4, 3467-3481.	2.8	24
28	Molecular hydrogen and catalytic combustion in the production of hyperpolarized ⁸³ Kr and ¹²⁹ Xe MRI contrast agents. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 3164-3168.	7.1	24
29	A statistical model for the heterogeneous structure of porous catalyst pellets. Advances in Colloid and Interface Science, 2002, 98, 87-119.	14.7	22
30	Improving the interpretation of mercury porosimetry data using computerised X-ray tomography and mean-field DFT. Chemical Engineering Science, 2011, 66, 2328-2339.	3.8	22
31	Effect of pre-ignition heating cycle method, air injection flux, and reservoir viscosity on the THAI heavy oil recovery process. Journal of Petroleum Science and Engineering, 2018, 166, 94-103.	4.2	22
32	Characterization of Macroscopic Structural Disorder in Porous Media Using Mercury Porosimetry. Journal of Colloid and Interface Science, 2001, 240, 190-210.	9.4	21
33	Impact of Oil Composition on Microwave Heating Behavior of Heavy Oils. Energy & Fuels, 2018, 32, 1592-1599.	5.1	21
34	In-situ microwave-assisted catalytic upgrading of heavy oil: Experimental validation and effect of catalyst pore structure on activity. Chemical Engineering Journal, 2021, 413, 127420.	12.7	21
35	New methodologies in mercury porosimetry. Studies in Surface Science and Catalysis, 2002, 144, 185-192.	1.5	20
36	The synthesis, structures and reactions of zinc and cobalt metalâ€“organic frameworks incorporating an alkyne-based dicarboxylate linker. CrystEngComm, 2012, 14, 188-192.	2.6	20

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37	Benzene alkylation with ethane in ethylbenzene over a PtH-MFI catalyst: Kinetic and IR investigation of the catalyst deactivation. Journal of Catalysis, 2013, 301, 125-133.	6.2	20
38	Determining drug spatial distribution within controlled delivery tablets using MFX imaging. Journal of Controlled Release, 2004, 96, 97-100.	9.9	19
39	Deactivation of PtH-MFI bifunctional catalysts by coke formation during benzene alkylation with ethane. Journal of Catalysis, 2010, 271, 401-412.	6.2	19
40	Combining mercury thermoporometry with integrated gas sorption and mercury porosimetry to improve accuracy of pore-size distributions for disordered solids. Journal of Colloid and Interface Science, 2014, 426, 72-79.	9.4	19
41	Determination of the cause of mercury entrapment during porosimetry experiments on solâ€“gel silica catalyst supports. Applied Catalysis A: General, 2003, 247, 27-39.	4.3	18
42	Coke Formation and Characterization During 1-Hexene Isomerization and Oligomerization over H-ZSM-5 Catalyst under Supercritical Conditions. Industrial & Engineering Chemistry Research, 2009, 48, 7899-7909.	3.7	18
43	Tetralin and Decalin H-Donor Effect on Catalytic Upgrading of Heavy Oil Inductively Heated with Steel Balls. Catalysts, 2020, 10, 393.	3.5	18
44	Determination of the Multiscale Percolation Properties of Porous Media Using Mercury Porosimetry. Industrial & Engineering Chemistry Research, 2002, 41, 1205-1226.	3.7	17
45	The initial release of cisplatin from poly(lactide-co-glycolide) microspheres. International Journal of Pharmaceutics, 2010, 383, 244-254.	5.2	17
46	Probing the impact of advanced melting and advanced adsorption phenomena on the accuracy of pore size distributions from cryoporometry and adsorption using NMR relaxometry and diffusometry. Journal of Colloid and Interface Science, 2012, 385, 183-192.	9.4	17
47	Structure-transport relationships in disordered solids using integrated rate of gas sorption and mercury porosimetry. Chemical Engineering Science, 2016, 152, 663-673.	3.8	17
48	NMR and modelling studies of structural heterogeneity over several lengthscales in amorphous catalyst supports. Catalysis Today, 1999, 53, 207-223.	4.4	16
49	Fundamental studies of gas sorption within mesopores situated amidst an inter-connected, irregular network. Adsorption, 2008, 14, 289-307.	3.0	16
50	Pore structural evolution of shale following thermochemical treatment. Marine and Petroleum Geology, 2020, 112, 104058.	3.3	16
51	Influence of Structural Heterogeneity on Selectivity in Fractal Catalyst Structures. Journal of Catalysis, 1998, 180, 44-50.	6.2	15
52	Hydrogenation and Dehydrogenation of Tetralin and Naphthalene to Explore Heavy Oil Upgrading Using NiMo/Al2O3 and CoMo/Al2O3 Catalysts Heated with Steel Balls via Induction. Catalysts, 2020, 10, 497.	3.5	15
53	A Model for the Surface Diffusion of Molecules on a Heterogeneous Surface. Langmuir, 2003, 19, 364-376.	3.5	14
54	Studies of the entrapment of non-wetting fluid within nanoporous media using a synergistic combination of MRI and micro-computed X-ray tomography. Chemical Engineering Science, 2006, 61, 7579-7592.	3.8	14

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55	NMR Studies of Cooperative Effects in Adsorption. Langmuir, 2010, 26, 18061-18070.	3.5	14
56	An approach to characterisation of multi-scale pore geometry and correlation with moisture storage and transport coefficients in cement-stabilised soils. Acta Geotechnica, 2013, 8, 67-79.	5.7	14
57	Temperature effects in benzene alkylation with ethane into ethylbenzene over a PtH-MFI bifunctional catalyst. Applied Catalysis A: General, 2013, 454, 137-144.	4.3	14
58	Impact of Chemical Heterogeneity on the Accuracy of Pore Size Distributions in Disordered Solids. Journal of Physical Chemistry C, 2014, 118, 20627-20638.	3.1	14
59	Using Nano-Cast Model Porous Media and Integrated Gas Sorption to Improve Fundamental Understanding and Data Interpretation in Mercury Porosimetry. Particle and Particle Systems Characterization, 2006, 23, 82-93.	2.3	13
60	MF-DFT and Experimental Investigations of the Origins of Hysteresis in Mercury Porosimetry of Silica Materials. Langmuir, 2010, 26, 241-248.	3.5	13
61	Pilot-scale Demonstration of an Advanced Aqueous Amine-based Post-combustion Capture Technology for CO2 Capture from Power Plant Flue Gases. Energy Procedia, 2014, 63, 1456-1469.	1.8	13
62	Pore Structural Characterization of Fuel Cell Layers Using Integrated Mercury Porosimetry and Computerized X-ray Tomography. Industrial & Engineering Chemistry Research, 2016, 55, 10850-10859.	3.7	13
63	Microwave synthesis of carbon onions in fractal aggregates using heavy oil as a precursor. Carbon, 2018, 138, 427-435.	10.3	13
64	Fractal Theory for the Compensation Effect Observed in a Surface Diffusion Process Studied Using Deuteron NMR. Langmuir, 2002, 18, 1613-1618.	3.5	12
65	Deconvolving pore shielding effects in mercury porosimetry data using NMR techniques. Chemical Engineering Science, 2000, 55, 5599-5612.	3.8	11
66	Nanocasting of novel, designer-structured catalyst supports. Chemical Engineering Science, 2004, 59, 5113-5120.	3.8	11
67	Interpretation of integrated gas sorption and mercury porosimetry studies of adsorption in disordered networks usingÂmean-field DFT. Adsorption, 2009, 15, 31-41.	3.0	11
68	NMR imaging of low pressure, gasâ€phase transport in packed beds using hyperpolarized xenonâ€129. AICHE Journal, 2015, 61, 4013-4019.	3.6	11
69	Improving the accuracy of catalyst pore size distributions from mercury porosimetry using mercury thermoporometry. Chemical Engineering Science, 2016, 140, 291-298.	3.8	11
70	In Situ Monitoring of Heterogeneous Catalytic Hydrogenation via ¹²⁹Xe NMR Spectroscopy and Proton MRI. ACS Catalysis, 2020, 10, 1417-1422.	11.2	11
71	Hyperpolarised xenon MRI and time-resolved X-ray computed tomography studies of structure-transport relationships in hierarchical porous media. Chemical Engineering Journal, 2021, 405, 126750.	12.7	11
72	Modelling studies of the influence of macroscopic structural heterogeneities on nitrogen sorption hysteresis. Studies in Surface Science and Catalysis, 2000, 128, 111-120.	1.5	10

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73	Characterization of pore coking in catalyst for thermal down-hole upgrading of heavy oil. Chemical Engineering Science, 2015, 131, 138-145.	3.8	10
74	Inductive Heating Assisted-Catalytic Dehydrogenation of Tetralin as a Hydrogen Source for Downhole Catalytic Upgrading of Heavy Oil. Topics in Catalysis, 2020, 63, 268-280.	2.8	10
75	Studies of structureâ€“transport relationships in biodegradable polymer microspheres for drug delivery using NMR cryodiffusometry. Chemical Engineering Science, 2010, 65, 611-625.	3.8	9
76	Evolution of the mineralogy, pore structure and transport properties of Nordland Shale following exposure to supercritical carbon dioxide. Journal of Petroleum Science and Engineering, 2022, 213, 110466.	4.2	9
77	Synthesis and characterisation of metalâ€“organic frameworks containing bis(Î²-diketonate) linkers. CrystEngComm, 2008, 10, 1474.	2.6	8
78	Deactivation during 1-Hexene Isomerization over Zeolite Y and ZSM5 Catalysts under Supercritical Conditions. Industrial & Engineering Chemistry Research, 2011, 50, 7161-7171.	3.7	8
79	Probing hysteresis during sorption of cyclohexane within mesoporous silica using NMR cryoporometry and relaxometry. Journal of Colloid and Interface Science, 2013, 398, 168-175.	9.4	8
80	Experimental and modelling studies of the kinetics of mercury retraction from highly confined geometries during porosimetry in the transport and the quasi-equilibrium regimes. Chemical Engineering Science, 2008, 63, 5771-5788.	3.8	7
81	Techniques for direct experimental evaluation of structureâ€“transport relationships in disordered porous solids. Adsorption, 2016, 22, 993-1000.	3.0	7
82	Detection of the delayed condensation effect and determination of its impact on the accuracy of gas adsorption pore size distributions. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2017, 517, 33-44.	4.7	7
83	Determination of Pore Network Accessibility in Hierarchical Porous Solids. Industrial & Engineering Chemistry Research, 2017, 56, 14822-14831.	3.7	7
84	Recent Developments in the Structural Characterisation of Disordered, Mesoporous Solids. Johnson Matthey Technology Review, 2018, 62, 296-312.	1.0	7
85	Theoretical Aspects of the Estimation of Pore and Mass Fractal Dimensions of Porous Media on the Macroscopic Scale using NMR Imaging. Chaos, Solitons and Fractals, 1998, 9, 1519-1527.	5.1	6
86	Simulation of Nonwetting Phase Entrapment within Porous Media Using Magnetic Resonance Imaging. Langmuir, 2006, 22, 5180-5188.	3.5	6
87	Understanding the spatial distribution of coke deposition within bimodal micro-/mesoporous catalysts using a novel sorption method in combination with pulsed-gradient spin-echo NMR. Journal of Catalysis, 2012, 286, 260-265.	6.2	6
88	Surfactant Mediated CO2 Adsorption; the Role of the Co- impregnation Species. Energy Procedia, 2014, 63, 2323-2330.	1.8	6
89	Multi-scale pore structural change across a paleodepositional transition in Utica shale probed by gas sorption overcondensation and scanning. Marine and Petroleum Geology, 2021, 134, 105348.	3.3	6
90	Evaluation of impact of surface diffusion on methane recovery via carbon dioxide injection in shale reservoirs. Fuel, 2022, 307, 121928.	6.4	6

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91	Integrating Gas Sorption with Mercury Porosimetry. Adsorption, 2005, 11, 201-206.	3.0	5
92	Effect of Pressure and Heat Treatments on the Compressive Strength of Reactive Powder Concrete. MATEC Web of Conferences, 2018, 147, 01006.	0.2	5
93	Structural and chemical heterogeneity in ancient glass probed using gas overcondensation, X-ray tomography, and solid-state NMR. Materials Characterization, 2020, 167, 110467.	4.4	5
94	Molecular dynamical studies of the mobility of benzene and water on silica surfaces: Correlation with the influence of surface chemistry and morphology. Studies in Surface Science and Catalysis, 1999, 122, 183-190.	1.5	4
95	Modeling the Fractal Growth of Templated, Mesoporous Silica Films. Journal of Physical Chemistry B, 2005, 109, 6294-6303.	2.6	4
96	Modelling of pore structure evolution during catalyst deactivation and comparison with experiment. Chemical Engineering Science, 2010, 65, 5550-5558.	3.8	4
97	Investigation of the problems with using gas adsorption to probe catalyst pore structure evolution during coking. Journal of Colloid and Interface Science, 2013, 393, 234-240.	9.4	4
98	Preliminary Investigation on the Chemical Response of Cementitious Grouts Used for Borehole Sealing of Geologically Stored CO2. Energy Procedia, 2014, 59, 174-181.	1.8	4
99	Post-synthetic modification of zinc metal-organic frameworks through palladium-catalysed carbonâ€“carbon bond formation. Journal of Organometallic Chemistry, 2015, 792, 134-138.	1.8	4
100	Effect of operating pressure on the performance of THAI-CAPRI in situ combustion and in situ catalytic process for simultaneous thermal and catalytic upgrading of heavy oils and bitumen. Petroleum Research, 2022, 7, 155-164.	2.7	4
101	Simulation of catalytic upgrading in CAPRI, an add-on process to novel in-situ combustion, THAI. Petroleum Research, 2022, 7, 297-307.	2.7	4
102	The use of NMR imaging and mercury porosimetry in the modelling and measurement of coke profiles in deactivated catalyst pellets. Studies in Surface Science and Catalysis, 2000, , 3267-3272.	1.5	3
103	Prediction of gas sorption kinetics for porous media using MRI. AICHE Journal, 2006, 52, 3278-3289.	3.6	3
104	Predicting Surface Diffusivities of Gas Molecules in Shale. Energy & Fuels, 2020, 34, 12417-12428.	5.1	3
105	Numerical simulation investigations of the applicability of THAI in situ combustion process in heavy oil reservoirs underlain by bottom water. Petroleum Research, 2023, 8, 36-43.	2.7	3
106	Macroscopic diffusional anisotropy in porous media. Chaos, Solitons and Fractals, 2000, 11, 1297-1301.	5.1	2
107	Determination of the location of coke in catalysts by a novel NMR-based, liquid-porosimetry approach. Journal of Colloid and Interface Science, 2012, 381, 164-170.	9.4	1
108	Simulation of mercury porosimetry using MRI images of porous media. Studies in Surface Science and Catalysis, 2007, 160, 177-184.	1.5	0

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109	MRI and PGSE NMR Studies of Long-range, Pore-pore Interaction Effects in Gas Adsorption. , 2011, , .		0
110	Determination of the Spatial Location of Coke in Catalysts by a Novel NMR Approach. , 2011, , .		0