

Sean P Rigby

List of Publications by Year in descending order

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110
papers

2,984
citations

236912

25
h-index

189881

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 metal-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 /Overload 1.9 163	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 metal-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 metal-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. <i>Applied Catalysis A: General</i> , 2003, 238, 303-318.	4.3	35
20	The Use of Magnetic Resonance Images in the Simulation of Diffusion in Porous Catalyst Support Pellets. <i>Journal of Catalysis</i> , 1998, 173, 484-489.	6.2	32
21	Experimental Evidence for Pore Blocking as the Mechanism for Nitrogen Sorption Hysteresis in a Mesoporous Material. <i>Journal of Physical Chemistry B</i> , 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. <i>Journal of Petroleum Science and Engineering</i> , 2019, 173, 1130-1148.	4.2	30
23	Studies of freezing/melting hysteresis in cryoporometry scanning loop experiments using NMR diffusometry and relaxometry. <i>Chemical Engineering Science</i> , 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. <i>Journal of Colloid and Interface Science</i> , 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. <i>International Journal of Pharmaceutics</i> , 2014, 469, 146-158.	5.2	27
26	The prediction of transport properties of porous media using fractal models and NMR experimental techniques. <i>Chemical Engineering Science</i> , 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. <i>Physical Chemistry Chemical Physics</i> , 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. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 3164-3168.	7.1	24
29	A statistical model for the heterogeneous structure of porous catalyst pellets. <i>Advances in Colloid and Interface Science</i> , 2002, 98, 87-119.	14.7	22
30	Improving the interpretation of mercury porosimetry data using computerised X-ray tomography and mean-field DFT. <i>Chemical Engineering Science</i> , 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. <i>Journal of Petroleum Science and Engineering</i> , 2018, 166, 94-103.	4.2	22
32	Characterization of Macroscopic Structural Disorder in Porous Media Using Mercury Porosimetry. <i>Journal of Colloid and Interface Science</i> , 2001, 240, 190-210.	9.4	21
33	Impact of Oil Composition on Microwave Heating Behavior of Heavy Oils. <i>Energy & Fuels</i> , 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. <i>Chemical Engineering Journal</i> , 2021, 413, 127420.	12.7	21
35	New methodologies in mercury porosimetry. <i>Studies in Surface Science and Catalysis</i> , 2002, 144, 185-192.	1.5	20
36	The synthesis, structures and reactions of zinc and cobalt metal-organic frameworks incorporating an alkyne-based dicarboxylate linker. <i>CrystEngComm</i> , 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. <i>Journal of Catalysis</i> , 2013, 301, 125-133.	6.2	20
38	Determining drug spatial distribution within controlled delivery tablets using MFX imaging. <i>Journal of Controlled Release</i> , 2004, 96, 97-100.	9.9	19
39	Deactivation of PtH-MFI bifunctional catalysts by coke formation during benzene alkylation with ethane. <i>Journal of Catalysis</i> , 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. <i>Journal of Colloid and Interface Science</i> , 2014, 426, 72-79.	9.4	19
41	Determination of the cause of mercury entrapment during porosimetry experiments on sol-gel silica catalyst supports. <i>Applied Catalysis A: General</i> , 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. <i>Industrial & Engineering Chemistry Research</i> , 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. <i>Catalysts</i> , 2020, 10, 393.	3.5	18
44	Determination of the Multiscale Percolation Properties of Porous Media Using Mercury Porosimetry. <i>Industrial & Engineering Chemistry Research</i> , 2002, 41, 1205-1226.	3.7	17
45	The initial release of cisplatin from poly(lactide-co-glycolide) microspheres. <i>International Journal of Pharmaceutics</i> , 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. <i>Journal of Colloid and Interface Science</i> , 2012, 385, 183-192.	9.4	17
47	Structure-transport relationships in disordered solids using integrated rate of gas sorption and mercury porosimetry. <i>Chemical Engineering Science</i> , 2016, 152, 663-673.	3.8	17
48	NMR and modelling studies of structural heterogeneity over several lengthscales in amorphous catalyst supports. <i>Catalysis Today</i> , 1999, 53, 207-223.	4.4	16
49	Fundamental studies of gas sorption within mesopores situated amidst an inter-connected, irregular network. <i>Adsorption</i> , 2008, 14, 289-307.	3.0	16
50	Pore structural evolution of shale following thermochemical treatment. <i>Marine and Petroleum Geology</i> , 2020, 112, 104058.	3.3	16
51	Influence of Structural Heterogeneity on Selectivity in Fractal Catalyst Structures. <i>Journal of Catalysis</i> , 1998, 180, 44-50.	6.2	15
52	Hydrogenation and Dehydrogenation of Tetralin and Naphthalene to Explore Heavy Oil Upgrading Using NiMo/Al ₂ O ₃ and CoMo/Al ₂ O ₃ Catalysts Heated with Steel Balls via Induction. <i>Catalysts</i> , 2020, 10, 497.	3.5	15
53	A Model for the Surface Diffusion of Molecules on a Heterogeneous Surface. <i>Langmuir</i> , 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. <i>Chemical Engineering Science</i> , 2006, 61, 7579-7592.	3.8	14

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55	NMR Studies of Cooperative Effects in Adsorption. <i>Langmuir</i> , 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. <i>Acta Geotechnica</i> , 2013, 8, 67-79.	5.7	14
57	Temperature effects in benzene alkylation with ethane into ethylbenzene over a PtH-MFI bifunctional catalyst. <i>Applied Catalysis A: General</i> , 2013, 454, 137-144.	4.3	14
58	Impact of Chemical Heterogeneity on the Accuracy of Pore Size Distributions in Disordered Solids. <i>Journal of Physical Chemistry C</i> , 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. <i>Particle and Particle Systems Characterization</i> , 2006, 23, 82-93.	2.3	13
60	MF-DFT and Experimental Investigations of the Origins of Hysteresis in Mercury Porosimetry of Silica Materials. <i>Langmuir</i> , 2010, 26, 241-248.	3.5	13
61	Pilot-scale Demonstration of an Advanced Aqueous Amine-based Post-combustion Capture Technology for CO ₂ Capture from Power Plant Flue Gases. <i>Energy Procedia</i> , 2014, 63, 1456-1469.	1.8	13
62	Pore Structural Characterization of Fuel Cell Layers Using Integrated Mercury Porosimetry and Computerized X-ray Tomography. <i>Industrial & Engineering Chemistry Research</i> , 2016, 55, 10850-10859.	3.7	13
63	Microwave synthesis of carbon onions in fractal aggregates using heavy oil as a precursor. <i>Carbon</i> , 2018, 138, 427-435.	10.3	13
64	Fractal Theory for the Compensation Effect Observed in a Surface Diffusion Process Studied Using Deuteron NMR. <i>Langmuir</i> , 2002, 18, 1613-1618.	3.5	12
65	Deconvolving pore shielding effects in mercury porosimetry data using NMR techniques. <i>Chemical Engineering Science</i> , 2000, 55, 5599-5612.	3.8	11
66	Nanocasting of novel, designer-structured catalyst supports. <i>Chemical Engineering Science</i> , 2004, 59, 5113-5120.	3.8	11
67	Interpretation of integrated gas sorption and mercury porosimetry studies of adsorption in disordered networks using mean-field DFT. <i>Adsorption</i> , 2009, 15, 31-41.	3.0	11
68	NMR imaging of low pressure, gas-phase transport in packed beds using hyperpolarized xenon- ¹²⁹ . <i>AIChE Journal</i> , 2015, 61, 4013-4019.	3.6	11
69	Improving the accuracy of catalyst pore size distributions from mercury porosimetry using mercury thermoporometry. <i>Chemical Engineering Science</i> , 2016, 140, 291-298.	3.8	11
70	In Situ Monitoring of Heterogeneous Catalytic Hydrogenation via ¹²⁹ Xe NMR Spectroscopy and Proton MRI. <i>ACS Catalysis</i> , 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. <i>Chemical Engineering Journal</i> , 2021, 405, 126750.	12.7	11
72	Modelling studies of the influence of macroscopic structural heterogeneities on nitrogen sorption hysteresis. <i>Studies in Surface Science and Catalysis</i> , 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. <i>Chemical Engineering Science</i> , 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. <i>Topics in Catalysis</i> , 2020, 63, 268-280.	2.8	10
75	Studies of structure-transport relationships in biodegradable polymer microspheres for drug delivery using NMR cryodiffusometry. <i>Chemical Engineering Science</i> , 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. <i>Journal of Petroleum Science and Engineering</i> , 2022, 213, 110466.	4.2	9
77	Synthesis and characterisation of metal-organic frameworks containing bis(β -diketonate) linkers. <i>CrystEngComm</i> , 2008, 10, 1474.	2.6	8
78	Deactivation during 1-Hexene Isomerization over Zeolite Y and ZSM5 Catalysts under Supercritical Conditions. <i>Industrial & Engineering Chemistry Research</i> , 2011, 50, 7161-7171.	3.7	8
79	Probing hysteresis during sorption of cyclohexane within mesoporous silica using NMR cryoporometry and relaxometry. <i>Journal of Colloid and Interface Science</i> , 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. <i>Chemical Engineering Science</i> , 2008, 63, 5771-5788.	3.8	7
81	Techniques for direct experimental evaluation of structure-transport relationships in disordered porous solids. <i>Adsorption</i> , 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. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2017, 517, 33-44.	4.7	7
83	Determination of Pore Network Accessibility in Hierarchical Porous Solids. <i>Industrial & Engineering Chemistry Research</i> , 2017, 56, 14822-14831.	3.7	7
84	Recent Developments in the Structural Characterisation of Disordered, Mesoporous Solids. <i>Johnson Matthey Technology Review</i> , 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. <i>Chaos, Solitons and Fractals</i> , 1998, 9, 1519-1527.	5.1	6
86	Simulation of Nonwetting Phase Entrapment within Porous Media Using Magnetic Resonance Imaging. <i>Langmuir</i> , 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. <i>Journal of Catalysis</i> , 2012, 286, 260-265.	6.2	6
88	Surfactant Mediated CO ₂ Adsorption; the Role of the Co-impregnation Species. <i>Energy Procedia</i> , 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. <i>Marine and Petroleum Geology</i> , 2021, 134, 105348.	3.3	6
90	Evaluation of impact of surface diffusion on methane recovery via carbon dioxide injection in shale reservoirs. <i>Fuel</i> , 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 CO ₂ . Energy Procedia, 2014, 59, 174-181.	1.8	4
99	Post-synthetic modification of zinc metal-organic frameworks through palladium-catalysed carbon-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