Peter J Mcdonald

List of Publications by Year
in descending order

125	4,741	94381 37	110317 64
papers	citations	h-index	g-index

127	127	127	2525
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Densification of Câ€“Sâ€“H Measured by ¹H NMR Relaxometry. Journal of Physical Chemistry C, 2013, 117, 403-412.	1.5	351
2	Surface relaxation and chemical exchange in hydrating cement pastes: A two-dimensional NMR relaxation study. Physical Review E, 2005, 72, 011409.	0.8	267
3	Characterisation of intra- and inter-Câ€“Sâ€“H gel pore water in white cement based on an analysis of NMR signal amplitudes as a function of water content. Cement and Concrete Research, 2010, 40, 1656-1663.	4.6	173
4	Stray field magnetic resonance imaging. Progress in Nuclear Magnetic Resonance Spectroscopy, 1997, 30, 69-99.	3.9	156
5	The morphology of Câ€“Sâ€“H: Lessons from 1H nuclear magnetic resonance relaxometry. Cement and Concrete Research, 2013, 49, 65-81.	4.6	156
6	Observation of exchange of micropore water in cement pastes by two-dimensionalT2â^'T2nuclear magnetic resonance relaxometry. Physical Review E, 2006, 74, 061404.	0.8	151
7	Influence of silica fume on the microstructure of cement pastes: New insights from 1H NMR relaxometry. Cement and Concrete Research, 2015, 74, 116-125.	4.6	150
8	A Novel High-Gradient Permanent Magnet for the Profiling of Planar Films and Coatings. Journal of Magnetic Resonance, 1999, 139, 90-97.	1.2	130
9	A 1H NMR relaxometry investigation of gel-pore drying shrinkage in cement pastes. Cement and Concrete Research, 2016, 86, 12-19.	4.6	123
10	Stray field magnetic resonance imaging. Reports on Progress in Physics, 1998, 61, 1441-1493.	8.1	98
11	Microstructure and texture of hydrated cement-based materials: A proton field cycling relaxometry approach. Cement and Concrete Research, 2007, 37, 295-302.	4.6	95
12	A broad line NMR and MRI study of water and water transport in portland cement pastes. Magnetic Resonance Imaging, 1998, 16, 455-461.	1.0	91
13	Origins and Effects of a Surfactant Excess near the Surface of Waterborne Acrylic Pressure-Sensitive Adhesives. Langmuir, 2002, 18, 4478-4487.	1.6	83
14	Water Redistribution within the Microstructure of Cementitious Materials due to Temperature Changes Studied with ¹H NMR. Journal of Physical Chemistry C, 2017, 121, 27950-27962.	1.5	76
15	Lateral Drying in Thick Films of Waterborne Colloidal Particles. Langmuir, 2001, 17, 3202-3207.	1.6	75
16	A study of water exchange in wood by means of 2D NMR relaxation correlation and exchange. Holzforschung, 2010, 64, .	0.9	73
17	Molecular tunneling measured by dipole-dipoleâ€“driven nuclear magnetic resonance. Physical Review Letters, 1985, 55, 1794-1796.	2.9	66
18	Correlation of Silicone Incorporation into Hybrid Acrylic Coatings with the Resulting Hydrophobic and Thermal Properties. Macromolecules, 2008, 41, 8537-8546.	2.2	66

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19	Vertical water distribution during the drying of polymer films cast from aqueous emulsions. European Physical Journal E, 2002, 8, 421-429.	0.7	64
20	Comparison of proton field-cycling relaxometry and molecular dynamics simulations for protonâ€“water surface dynamics in cement-based materials. Cement and Concrete Research, 2007, 37, 348-350.	4.6	63
21	Hydrogen bond dynamics in benzoic acid dimers as a function of hydrostatic pressure measured by nuclear magnetic resonance. Journal of Chemical Physics, 1994, 100, 1889-1894.	1.2	61
22	Two-dimensional correlation relaxometry studies of cement pastes performed using a new one-sided NMR magnet. Cement and Concrete Research, 2007, 37, 303-309.	4.6	60
23	Observation of the redistribution of nanoscale water filled porosity in cement based materials during wetting. Cement and Concrete Research, 2015, 68, 148-155.	4.6	58
24	Influence of curing temperature on cement paste microstructure measured by 1H NMR relaxometry. Cement and Concrete Research, 2019, 122, 147-156.	4.6	58
25	A unilateral NMR magnet for sub-structure analysis in the built environment: The Surface GARField. Journal of Magnetic Resonance, 2007, 185, 1-11.	1.2	55
26	Spatially resolved nuclear magnetic resonance studies of planar samples. Progress in Nuclear Magnetic Resonance Spectroscopy, 2006, 48, 161-181.	3.9	52
27	Profile Amplitude Modulation in Stray-Field Magnetic-Resonance Imaging. Journal of Magnetic Resonance Series A, 1995, 112, 17-23.	1.6	50
28	Sorption, anomalous water transport and dynamic porosity in cement paste: A spatially localised 1H NMR relaxation study and a proposed mechanism. Cement and Concrete Research, 2020, 133, 106045.	4.6	49
29	A transportable magnetic resonance imaging system for in situ measurements of living trees: The Tree Hugger. Journal of Magnetic Resonance, 2012, 218, 133-140.	1.2	48
30	Fickian and Case II diffusion of water into amylose: A stray field NMR study. Carbohydrate Polymers, 1997, 34, 39-47.	5.1	47
31	Lattice Boltzmann simulations of the permeability and capillary adsorption of cement model microstructures. Cement and Concrete Research, 2012, 42, 1601-1610.	4.6	42
32	Magnetic-resonance determination of the spatial dependence of the droplet size distribution in the cream layer of oil-in-water emulsions: Evidence for the effects of depletion flocculation. Physical Review E, 1999, 59, 874-884.	0.8	41
33	Skin Formation and Water Distribution in Semicrystalline Polymer Layers Cast from Solution:Â A Magnetic Resonance Imaging Study. Macromolecules, 2003, 36, 8398-8405.	2.2	41
34	Stray field magnetic resonance imaging of the diffusion of acetone into poly(vinyl chloride). Polymer, 1994, 35, 2744-2748.	1.8	39
35	Skin Development during the Film Formation of Waterborne Acrylic Pressure-Sensitive Adhesives Containing Tackifying Resin. Journal of Adhesion, 2006, 82, 217-238.	1.8	39
36	The correlation between hydrogen bond tunneling dynamics and the structure of benzoic acid dimers. Journal of Chemical Physics, 1996, 105, 979-982.	1.2	38

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37	Depth Profiles of Polymer Mobility during the Film Formation of a Latex Dispersion Undergoing Photoinitiated Cross-Linking. Macromolecules, 2000, 33, 8443-8452.	2.2	38
38	Lateral Transport of Water during Drying of Alkyd Emulsions. Langmuir, 2000, 16, 1057-1065.	1.6	38
39	Influence of drier combination on through-drying in waterborne alkyd emulsion coatings observed with magnetic resonance profiling. Journal of Coatings Technology, 2002, 74, 113-124.	0.7	38
40	Magnetic resonance studies of cement based materials in inhomogeneous magnetic fields. Cement and Concrete Research, 2005, 35, 2033-2040.	4.6	38
41	Water Redistributionâ€“Microdiffusion in Cement Paste under Mechanical Loading Evidenced by ¹H NMR. Journal of Physical Chemistry C, 2019, 123, 16153-16163.	1.5	38
42	A 3D lattice Boltzmann effective media study: understanding the role of C-S-H and water saturation on the permeability of cement paste. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 085016.	0.8	37
43	The transition from free quantum tunnelling to thermally driven motion of methyl groups. Journal of Physics C: Solid State Physics, 1984, 17, 4413-4420.	1.5	36
44	Explanations for water whitening in secondary dispersion and emulsion polymer films. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 1658-1674.	2.4	34
45	Stray-Field Imaging of Planar Films Using a Novel Surface Coil. Journal of Magnetic Resonance, 1997, 126, 207-212.	1.2	33
46	Magnetic resonance profiling of human skin in vivo using GARField magnets. Journal of Pharmaceutical Sciences, 2005, 94, 1850-1860.	1.6	33
47	A new approach to the NMR imaging of solids. Journal of Magnetic Resonance, 1987, 72, 224-229.	0.5	32
48	An experimental test of the scaling prediction for the spatial distribution of water during the drying of colloidal films. European Physical Journal: Special Topics, 2009, 166, 21-27.	1.2	31
49	New techniques for determining the extent of crosslinking in coatings. Progress in Organic Coatings, 2001, 43, 85-98.	1.9	30
50	Methyl tunnelling spectroscopy and level crossing phenomena in solid acetone. Journal of Physics C: Solid State Physics, 1984, 17, 1115-1125.	1.5	29
51	An NMR multiple pulse sequence for the imaging of solids using sinusoidally driven magnetic field gradients. Journal of Physics E: Scientific Instruments, 1989, 22, 948-951.	0.7	29
52	Magnetic resonance profiling studies of the drying of film-forming aqueous dispersions and glue layers. Magnetic Resonance Imaging, 2003, 21, 235-241.	1.0	29
53	GARField magnetic resonance profiling of the ingress of model skin-care product ingredients into human skin in vitro. Journal of Pharmaceutical Sciences, 2004, 93, 2274-2283.	1.6	29
54	Growth of sheets in 3D confinements â€” a model for the Câ€“Sâ€“H meso structure. Cement and Concrete Research, 2014, 63, 137-142.	4.6	29

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55	Surface Flux Limited Diffusion of Solvent into Polymer. Macromolecules, 2001, 34, 1048-1057.	2.2	28
56	On the interpretation of 1H 2-dimensional NMR relaxation exchange spectra in cements: Is there exchange between pores with two characteristic sizes or Fe3+ concentrations?. Cement and Concrete Research, 2010, 40, 1375-1377.	4.6	28
57	Stray field magnetic resonance imaging: a preliminary study of skin hydration. Journal Physics D: Applied Physics, 2003, 36, 364-368.	1.3	27
58	A Bulk and Spatially Resolved NMR Relaxation Study of Sandstone Rock Plugs. Journal of Magnetic Resonance Series A, 1995, 116, 189-195.	1.6	26
59	The mechanism of waterâ€“isopropanol exchange in cement pastes evidenced by NMR relaxometry. RSC Advances, 2014, 4, 20709-20715.	1.7	26
60	The relative humidity dependence of the permeability of cement paste measured using GARField NMR profiling. Cement and Concrete Research, 2014, 57, 88-94.	4.6	25
61	The Application of Spin Echoes to Stray-Field Imaging. Journal of Magnetic Resonance Series B, 1995, 109, 314-317.	1.6	24
62	A stray field magnetic resonance study of water diffusion in bacterial exopolysaccharides. Enzyme and Microbial Technology, 1999, 24, 339-347.	1.6	24
63	Dynamic in vivo mapping of model moisturiser ingress into human skin by GARfield MRI. NMR in Biomedicine, 2011, 24, 135-144.	1.6	23
64	Diffusion of Water at Low Saturation Levels into Sandstone Rock Plugs Measured by Broad Line Magnetic Resonance Profiling. Journal of Colloid and Interface Science, 1996, 177, 439-445.	5.0	21
65	Concentration Profiles in Creaming Oil-in-Water Emulsion Layers Determined with Stray Field Magnetic Resonance Imaging. Langmuir, 1997, 13, 3621-3626.	1.6	21
66	Multidimensional Imaging Using Combined Stray Field and Pulsed Gradients. Journal of Magnetic Resonance, 2002, 155, 92-99.	1.2	21
67	Two-dimensional correlation relaxation studies of cement pastes. Magnetic Resonance Imaging, 2007, 25, 470-473.	1.0	21
68	Nuclear magnetic resonance relaxometry of water in two and quasi-two dimensions. Physical Review E, 2013, 87, 062309.	0.8	20
69	Model for the interpretation of nuclear magnetic resonance relaxometry of hydrated porous silicate materials. Physical Review E, 2015, 91, 032311.	0.8	20
70	The visualization of spatial gradients in polymer and solvent dynamics for mixed solvents ingressing poly(methyl methacrylate) using stray field magnetic resonance imaging. Polymer, 1997, 38, 2329-2335.	1.8	19
71	Translational self diffusion in 4-n-octyloxy-4â€²-cyanobiphenyl (8OCB) exploited with a static field gradient1H NMR diffusometry approach. Physical Chemistry Chemical Physics, 2004, 6, 4701-4706.	1.3	19
72	Tunneling motions of methyl groups in manganese acetate tetrahydrate. European Physical Journal B, 1985, 58, 141-148.	0.6	18

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73	Structural studies and diffusion measurements of water-swollen cellophane by NMR imaging. Cellulose, 2000, 7, 227-246.	2.4	18
74	A Stray Field Magnetic Resonance Imaging Study of the Drying of Sodium Silicate Films. Journal of Colloid and Interface Science, 1996, 177, 208-213.	5.0	17
75	Nuclear-magnetic-resonance relaxation due to the translational diffusion of fluid confined to quasi-two-dimensional pores. Physical Review E, 2017, 95, 033116.	0.8	17
76	Explicit calculation of nuclear-magnetic-resonance relaxation rates in small pores to elucidate molecular-scale fluid dynamics. Physical Review E, 2017, 95, 033117.	0.8	17
77	Title is missing!. Journal of Materials Science, 1998, 33, 859-867.	1.7	16
78	Model for water transport into powdered xanthan combining gel swelling and vapor diffusion. Physical Review E, 2000, 62, 5353-5359.	0.8	16
79	Nuclear-magnetic-resonance relaxation rates for fluid confined to closed, channel, or planar pores. Physical Review E, 2018, 98, .	0.8	16
80	Water diffusion in zeolite 4Abeds measured by broad-line magnetic resonance imaging. Physical Review B, 1995, 51, 11332-11338.	1.1	15
81	Long-Range Water Transport and Self-Diffusion in Zeolite 4A Powder Beds. Journal of Magnetic Resonance Series A, 1996, 121, 147-153.	1.6	15
82	Solid state spatially resolved 1H and 19F nuclear magnetic resonance spectroscopy of dental materials by stray-field imaging. Journal of Materials Science: Materials in Medicine, 1999, 10, 369-373.	1.7	15
83	Water ingress into starch and sucrose:starch systems. Polymer, 2001, 42, 4947-4956.	1.8	15
84	A repetitive pulse variant of broadline gradient echo magnetic resonance imaging. Measurement Science and Technology, 1993, 4, 896-898.	1.4	14
85	Advances in the Interpretation of Frequency-Dependent Nuclear Magnetic Resonance Measurements from Porous Material. Molecules, 2019, 24, 3688.	1.7	14
86	An N.M.R. investigation of tunnelling sidebands in dimethyl sulphide, 2-pentanone, 2-hexanone and 2-heptanone using double sideband irradiation. Molecular Physics, 1986, 57, 901-908.	0.8	13
87	The number of spin symmetry species of tunnelling molecular groups. Journal of Physics C: Solid State Physics, 1983, 16, 5753-5764.	1.5	12
88	Two-dimensional fourier transform NMR imaging of solids using multiple pulse line narrowing. Physica B: Condensed Matter, 1992, 176, 173-179.	1.3	11
89	The application of broad line MRI to the study of porous media. Magnetic Resonance Imaging, 1996, 14, 807-810.	1.0	11
90	Fickian Ingress of Binary Solvent Mixtures into Glassy Polymer. Macromolecules, 2001, 34, 890-895.	2.2	11

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91	The application of magnetic resonance microimaging to the visible light curing of dental resins. Dental Materials, 2001, 17, 381-387.	1.6	11
92	Decision Tree Pattern Recognition Model for Radio Frequency Interference Suppression in NQR Experiments. Sensors, 2019, 19, 3153.	2.1	11
93	Observations of coarsening of air voids in a polymerâ€“highly-soluble crystalline matrix during dissolution. Physical Review E, 2006, 74, 011504.	0.8	10
94	An MRI Analysis of the Dissolution of a Soluble Drug Incorporated within an Insoluble Polymer Tablet. Applied Magnetic Resonance, 2007, 32, 75-91.	0.6	10
95	Pressure dependence of methyl tunnelling in solid diacetyl. Molecular Physics, 1993, 78, 219-228.	0.8	9
96	Case II diffusion in the PVC and acetone system. Magnetic Resonance Imaging, 1994, 12, 217-219.	1.0	9
97	The pressure dependence of methyl tunnelling in MDBP from field-cycling NMR spectroscopy. Journal of Physics Condensed Matter, 1989, 1, 2441-2444.	0.7	8
98	The visualization of water transport through hydrophobic polymer coatings applied to building sandstones by broad line magnetic resonance imaging. Journal of Materials Science, 1996, 31, 5859-5864.	1.7	8
99	The crystal structure determination of dimethylsulphide by high-resolution neutron powder diffraction. Journal of Molecular Structure, 1997, 415, 259-266.	1.8	8
100	Measurement of the diffusion of liquids into dental restorative resins by stray-field nuclear magnetic resonance imaging (STRAFI). Dental Materials, 2003, 19, 632-638.	1.6	8
101	High pressure NMR study of methyl group tunnelling in dimethyl sulphide. Molecular Physics, 1995, 84, 1021-1031.	0.8	7
102	A¹H double-quantum-filtered NMR study of water in cement pastes. New Journal of Physics, 2011, 13, 035017.	1.2	7
103	NMR relaxation parameters from molecular simulations of hydrated inorganic nanopores. International Journal of Quantum Chemistry, 2014, 114, 1220-1228.	1.0	7
104	On the quantification of solid phases in hydrated cement paste by 1H nuclear magnetic resonance relaxometry. Cement and Concrete Research, 2020, 135, 106095.	4.6	7
105	NMR double sideband saturation spectroscopy. Journal of Physics C: Solid State Physics, 1984, 17, L379-L381.	1.5	6
106	Is colour change a good measure of a water penetration front?. Magazine of Concrete Research, 2015, 67, 1048-1053.	0.9	5
107	Combining effective media and multi-phase methods of Lattice Boltzmann modelling for the characterisation of liquid-vapour dynamics in multi-length scale heterogeneous structural materials. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 015010.	0.8	5
108	Gray free-energy multiphase lattice Boltzmann model with effective transport and wetting properties. Physical Review E, 2016, 94, 053301.	0.8	5

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109	Active elimination of radio frequency interference for improved signal-to-noise ratio for in-situ NMR experiments in strong magnetic field gradients. Journal of Magnetic Resonance, 2018, 287, 99-109.	1.2	5
110	The use of magnetic resonance imaging techniques in assessing the uptake of surface treatments and water movement through stone faces. Materials and Structures/Materiaux Et Constructions, 1998, 31, 423-427.	1.3	4
111	Magnetic resonance and porous materials. Physics World, 1998, 11, 29-34.	0.0	4
112	Filling of three-dimensional space by two-dimensional sheet growth. Physical Review E, 2015, 92, 042106.	0.8	4
113	A model for the interpretation of nuclear magnetic resonance spin-lattice dispersion measurements on mortar, plaster paste, synthetic clay and oil-bearing shale. Microporous and Mesoporous Materials, 2018, 269, 39-42.	2.2	3
114	Micro-CT measurements of within-ring variability in longitudinal hydraulic pathways in Norway spruce. IAWA Journal, 2020, 41, 12-29.	2.7	3
115	Mesoscale modelling of dynamic porosity in cement hydrate gel during a water sorption cycle: A lattice Boltzmann study. Cement and Concrete Research, 2021, 146, 106475.	4.6	3
116	Factors influencing the time dependence of porosity relaxation in cement during sorption: Experimental results from spatially resolved NMR. Cement, 2022, 8, 100028.	0.9	3
117	Water as a LÃ©vy Rotor. Physical Review Letters, 2021, 127, 256001.	2.9	3
118	The pressure dependence of molecular dynamics measured by NMR. Physica B: Condensed Matter, 1994, 202, 346-350.	1.3	2
119	Spatially-resolved magnetic resonance study of the dissolution interface between soaps and water. Journal Physics D: Applied Physics, 2002, 35, 1271-1281.	1.3	2
120	Improvement of signal to noise in automated nuclear magnetic resonance experiments. Journal of Physics E: Scientific Instruments, 1986, 19, 563-563.	0.7	1
121	Properties and derivatives of the solid-state imaging sequence zig-zag. Journal of Magnetic Resonance, 1992, 99, 225-234.	0.5	1
122	Magnetisation rewind during a finite RF pulse in gradient echo magnetic resonance imaging. Physica B: Condensed Matter, 1993, 192, 269-273.	1.3	1
123	Probing the Water Phases and Microstructure in a Model Cement Blend Matrix used for the Encapsulation of Intermediate Level Nuclear Wastes. Materials Research Society Symposia Proceedings, 2006, 932, 1.	0.1	1
124	A nuclear magnetic resonance field cycling investigation of chromium and silicon doped gallium arsenide. Solid State Communications, 1988, 68, 163-166.	0.9	0
125	Expanding the skills base. Physics World, 2018, 31, 17-17.	0.0	0