Joseph D Seymour

List of Publications by Year
in descending order

103	2,096	236925	276875
papers	citations	25 h-index	41 g-index

113	113	113	1664
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Generalized approach to NMR analysis of flow and dispersion in porous media. AICHE Journal, 1997, 43, 2096-2111.	3.6	216
2	Anomalous Fluid Transport in Porous Media Induced by Biofilm Growth. Physical Review Letters, 2004, 93, 198103.	7.8	110
3	Magnetic resonance microscopy of biofilm structure and impact on transport in a capillary bioreactor. Journal of Magnetic Resonance, 2004, 167, 322-327.	2.1	89
4	An earthâ€™s field nuclear magnetic resonance apparatus suitable for pulsed gradient spin echo measurements of self-diffusion under Antarctic conditions. Review of Scientific Instruments, 1997, 68, 4263-4270.	1.3	65
5	Direct numerical simulation of pore-scale flow in a bead pack: Comparison with magnetic resonance imaging observations. Advances in Water Resources, 2013, 54, 228-241.	3.8	62
6	â€œFlow-Diffractionâ€•Structural Characterization and Measurement of Hydrodynamic Dispersion in Porous Media by PGSE NMR. Journal of Magnetic Resonance Series A, 1996, 122, 90-93.	1.6	61
7	Pulsed Gradient Spin Echo Nuclear Magnetic Resonance Imaging of Diffusion in Granular Flow. Physical Review Letters, 2000, 84, 266-269.	7.8	58
8	A nuclear magnetic resonance study of Antarctic sea ice brine diffusivity. Cold Regions Science and Technology, 1999, 29, 153-171.	3.5	56
9	Magnetic resonance microscopy of biofouling induced scale dependent transport in porous media. Advances in Water Resources, 2007, 30, 1408-1420.	3.8	55
10	Turbulent pipe flow studied by time-averaged NMR imaging: Measurements of velocity profile and turbulent intensity. Magnetic Resonance Imaging, 1994, 12, 923-934.	1.8	54
11	Note: Nuclear magnetic resonance imaging for viscosity measurements. Journal of Rheology, 1994, 38, 1465-1470.	2.6	51
12	Simultaneous Gaussian and exponential inversion for improved analysis of shales by NMR relaxometry. Journal of Magnetic Resonance, 2015, 250, 7-16.	2.1	51
13	Taylor dispersion and molecular displacements in Poiseuille flow. Physical Review E, 1999, 60, R3491-R3494.	2.1	49
14	Earth's Field NMR in Antarctica: A Pulsed Gradient Spin Echo NMR Study of Restricted Diffusion in Sea Ice. Journal of Magnetic Resonance, 1998, 133, 148-154.	2.1	47
15	Effective Rheology of Two-Phase Flow in Three-Dimensional Porous Media: Experiment and Simulation. Transport in Porous Media, 2017, 119, 77-94.	2.6	43
16	Correlation Time and Diffusion Coefficient Imaging: Application to a Granular Flow System. Journal of Magnetic Resonance, 2000, 144, 96-107.	2.1	41
17	GRAVITY CURRENT ANALYSIS OF THE BOSTWICK CONSISTOMETER FOR POWER LAW FOODS. Journal of Texture Studies, 1994, 25, 207-220.	2.5	36
18	Visualization of flow patterns of cellulose fiber suspensions by NMR imaging. AICHE Journal, 1994, 40, 1408-1411.	3.6	34

#	Article	IF	Citations
19	Assessment of the changes in the structure and component mobility of Mozzarella and Cheddar cheese during heating. Journal of Food Engineering, 2015, 150, 35-43.	5.2	34
20	Magnetic resonance microscopy analysis of advective transport in a biofilm reactor. Biotechnology and Bioengineering, 2005, 89, 822-834.	3.3	33
21	Biopolymer and Water Dynamics in Microbial Biofilm Extracellular Polymeric Substance. Biomacromolecules, 2008, 9, 2322-2328.	5.4	33
22	NMR velocity phase encoded measurements of fibrous suspensions. Physics of Fluids A, Fluid Dynamics, 1993, 5, 3010-3012.	1.6	32
23	A FUNDAMENTAL APPROACH FOR THE RELATIONSHIP BETWEEN THE BOSTWICK MEASUREMENT AND NEWTONIAN FLUID VISCOSITY. Journal of Texture Studies, 1993, 24, 1-10.	2.5	29
24	Sensitivity of poreâ€scale dispersion to the construction of random bead packs. Water Resources Research, 2008, 44, .	4.2	27
25	Permeability of a growing biofilm in a porous media fluid flow analyzed by magnetic resonance displacementâ€relaxation correlations. Biotechnology and Bioengineering, 2013, 110, 1366-1375.	3.3	27
26	Nuclear magnetic resonance characterization of the stationary dynamics of partially saturated media during steady-state infiltration flow. New Journal of Physics, 2011, 13, 015007.	2.9	24
27	NMR relaxation measurements of biofouling in model and geological porous media. Organic Geochemistry, 2011, 42, 965-971.	1.8	24
28	NMR measurement of hydrodynamic dispersion in porous media subject to biofilm mediated precipitation reactions. Journal of Contaminant Hydrology, 2011, 120-121, 79-88.	3.3	24
29	PGSE NMR Measurements of Convection in a Capillary. Journal of Magnetic Resonance, 1997, 125, 153-158.	2.1	23
30	Pulsed gradient spin echo nuclear magnetic resonance measurements of hydrodynamic instabilities with coherent structure: Taylor vortices. Physics of Fluids, 1999, 11, 1104-1113.	4.0	23
31	Probing water migration in Mozzarella cheese during maturation and heating utilizing magnetic resonance techniques. Journal of Food Engineering, 2017, 198, 1-6.	5.2	22
32	Impact of Mineral Precipitation on Flow and Mixing in Porous Media Determined by Microcomputed Tomography and MRI. Environmental Science & Technology, 2017, 51, 1562-1569.	10.0	21
33	NMR investigation of water diffusion in different biofilm structures. Biotechnology and Bioengineering, 2017, 114, 2857-2867.	3.3	21
34	Microbial and algal alginate gelation characterized by magnetic resonance. Journal of Biotechnology, 2012, 161, 320-327.	3.8	19
35	Heterogeneous diffusion in aerobic granular sludge. Biotechnology and Bioengineering, 2020, 117, 3809-3819.	3.3	19
36	RHEOLOGICAL CHARACTERIZATION OF FLUIDS USING NMR VELOCITY SPECTRUM MEASUREMENTS. Journal of Texture Studies, 1995, 26, 89-101.	2.5	18

#	Article	IF	Citations
37	Nuclear magnetic resonance measurement of shear-induced particle migration in Brownian suspensions. Physics of Fluids, 2009, 21, .	4.0	18
38	Rheo-NMR of transient and steady state shear banding under shear startup. Journal of Rheology, 2018, 62, 1125-1134.	2.6	18
39	Secondary flow mixing due to biofilm growth in capillaries of varying dimensions. Biotechnology and Bioengineering, 2009, 103, 353-360.	3.3	17
40	Biofilm Detection in a Model Wellâ€Bore Environment Using Lowâ€Field <scp>NMR</scp>. Ground Water Monitoring and Remediation, 2015, 35, 36-44.	0.8	17
41	Magnetic resonance microscopy determined velocity and hematocrit distributions in a Couette viscometer. Biorheology, 2005, 42, 385-99.	0.4	17
42	NMR study comparing capillary trapping in Berea sandstone of air, carbon dioxide, and supercritical carbon dioxide after imbibition of water. Water Resources Research, 2016, 52, 713-724.	4.2	16
43	Magnetic resonance diffusion and relaxation characterization of water in the unfrozen vein network in polycrystalline ice and its response to microbial metabolic products. Journal of Magnetic Resonance, 2012, 225, 17-24.	2.1	15
44	Glass Dynamics and Domain Size in a Solvent-Polymer Weak Gel Measured by Multidimensional Magnetic Resonance Relaxometry and Diffusometry. Physical Review Letters, 2019, 122, 068001.	7.8	14
45	Dynamics of the Solid and Liquid Phases in Dilute Sheared Brownian Suspensions: Irreversibility and Particle Migration. Physical Review Letters, 2007, 99, 240602.	7.8	13
46	Magnetic resonance imaging and relaxometry to study water transport mechanisms in a commercially available gastrointestinal therapeutic system (GITS) tablet. International Journal of Pharmaceutics, 2010, 397, 27-35.	5.2	13
47	Anomalous preasymptotic colloid transport by hydrodynamic dispersion in microfluidic capillary flow. Physical Review E, 2014, 90, 010301.	2.1	13
48	Melt-front propagation and velocity profiles in packed beds of phase-change materials measured by magnetic resonance imaging. Chemical Engineering Science, 2018, 190, 164-172.	3.8	13
49	Characterization of biofilm distribution in hollow fiber membranes using Compressed Sensing Magnetic Resonance Imaging. Journal of Membrane Science, 2020, 594, 117437.	8.2	13
50	Dynamic Length-Scale Characterization and Nonequilibrium Statistical Mechanics of Transport in Open-Cell Foams. Physical Review Letters, 2009, 103, 218001.	7.8	12
51	Magnetic resonance analysis of capillary formation reaction front dynamics in alginate gels. Magnetic Resonance in Chemistry, 2011, 49, 627-640.	1.9	12
52	Magnetic resonance measurements of flow-path enhancement during supercritical CO2 injection in sandstone and carbonate rock cores. Journal of Petroleum Science and Engineering, 2014, 122, 507-514.	4.2	12
53	NMR measurement of the transport dynamics of colloidal particles in an open cell polymer foam porous media. Journal of Colloid and Interface Science, 2010, 349, 384-391.	9.4	11
54	Quantifying NMR relaxation correlation and exchange in articular cartilage with time domain analysis. Journal of Magnetic Resonance, 2018, 287, 82-90.	2.1	11

#	Article	IF	Citations
55	Magnetic Resonance Microscopy of Heterogeneity in Polymer Electrolyte Membranes. Applied Magnetic Resonance, 2007, 32, 13-24.	1.2	10
56	T 1â€“T 2 Correlation and Biopolymer Diffusion Within Human Osteoarthritic Cartilage Measured with Nuclear Magnetic Resonance. Applied Magnetic Resonance, 2017, 48, 407-422.	1.2	10
57	Characterizing the structure of aerobic granular sludge using ultra-high field magnetic resonance. Water Science and Technology, 2020, 82, 627-639.	2.5	10
58	Recrystallization inhibition in ice due to ice binding protein activity detected by nuclear magnetic resonance. Biotechnology Reports (Amsterdam, Netherlands), 2014, 3, 60-64.	4.4	9
59	Spatiotemporal mapping of oxygen in a microbially-impacted packed bed using 19F Nuclear magnetic resonance oximetry. Journal of Magnetic Resonance, 2018, 293, 123-133.	2.1	9
60	Nonâ€invasive imaging of oxygen concentration in a complex in vitro biofilm infection model using 19 F MRI: Persistence of an oxygen sink despite prolonged antibiotic therapy. Magnetic Resonance in Medicine, 2019, 82, 2248-2256.	3.0	9
61	Probing diffusion dynamics during hydrate formation by high field NMR relaxometry and diffusometry. Journal of Magnetic Resonance, 2019, 303, 7-16.	2.1	9
62	Detection of biological uranium reduction using magnetic resonance. Biotechnology and Bioengineering, 2012, 109, 877-883.	3.3	8
63	Dynamic NMR microscopy measurement of the dynamics and flow partitioning of colloidal particles in a bifurcation. Experiments in Fluids, 2011, 50, 1335-1347.	2.4	7
64	Hydrodynamic dispersion in open cell polymer foam. Physics of Fluids, 2011, 23, .	4.0	7
65	Electroosmotic Flow and Dispersion in Open and Closed Porous Media. Transport in Porous Media, 2016, 113, 67-89.	2.6	7
66	Flow, Diffusion, Dispersion, and Thermal Convection in Percolation Clusters: NMR Experiments and Numerical FEM/FVM Simulations. Materials Research Society Symposia Proceedings, 2000, 651, 1.	0.1	6
67	Magnetic resonance microscopy analysis of transport in a novel Tapeâ€Cast porous ceramic. AICHE Journal, 2009, 55, 2506-2514.	3.6	6
68	Nuclear magnetic resonance measurement of hydrodynamic dispersion in porous media: preasymptotic dynamics, structure and nonequilibrium statistical mechanics. EPJ Applied Physics, 2012, 60, 24204.	0.7	6
69	MR measurement of critical phase transition dynamics and supercritical fluid dynamics in capillary and porous media flow. Journal of Magnetic Resonance, 2012, 214, 309-314.	2.1	6
70	Pulsed Gradient Spin Echo Nuclear Magnetic Resonance Measurement and Simulation of Two-Fluid Taylor Vortex Flow in a Vertically Oriented Taylorâ€“Couette Device. Applied Magnetic Resonance, 2012, 42, 137-152.	1.2	6
71	Electrophoretic nuclear magnetic resonance measurement of electroosmotic flow and dispersion in hydrating cement paste. Cement and Concrete Research, 2019, 116, 11-18.	11.0	6
72	Characterization of velocity fluctuations and the transition from transient to steady state shear banding with and without pre-shear in a wormlike micelle solution under shear startup by Rheo-NMR. Applied Rheology, 2020, 30, 1-13.	5.2	6

#	Article	IF	Citations
73	Preasymptotic hydrodynamic dispersion as a quantitative probe of permeability. Physical Review E, 2012, 85, 045301.	2.1	5
74	Application of PFGâ€“NMR to Study the Impact of Colloidal Deposition on Hydrodynamic Dispersion in a Porous Medium. Transport in Porous Media, 2014, 103, 117-130.	2.6	5
75	Parahydrogen-Induced Polarization in Heterogeneous Catalytic Hydrogenations. , 0, , 99-115.		4
76	Flow velocity maps measured by nuclear magnetic resonance in medical intravenous catheter needleless connectors. Journal of Pharmaceutical and Biomedical Analysis, 2018, 152, 1-11.	2.8	4
77	NMR Relaxometry to Characterize the Drug Structural Phase in a Porous Construct. Molecular Pharmaceutics, 2018, 15, 2614-2620.	4.6	4
78	Microbial growth rates and local external mass transfer coefficients in a porous bed biofilm system measured by ¹⁹F magnetic resonance imaging of structure, oxygen concentration, and flow velocity. Biotechnology and Bioengineering, 2020, 117, 1458-1469.	3.3	4
79	Observation of heat transfer due to variable thermophysical properties of sub-, near- and super-critical fluids in porous media by magnetic resonance imaging. International Communications in Heat and Mass Transfer, 2021, 128, 105635.	5.6	4
80	Oscillatory Flow Phenomena in Simple and Complex Fluids. Applied Magnetic Resonance, 2012, 42, 211-225.	1.2	3
81	Magnetic resonance measurement of fluid dynamics and transport in tube flow of a near-critical fluid. Experiments in Fluids, 2014, 55, 1.	2.4	3
82	Pulsed gradient stimulated echo (PGStE) NMR shows spatial dependence of fluid diffusion in human stage IV osteoarthritic cartilage. Magnetic Resonance in Medicine, 2018, 80, 1170-1177.	3.0	3
83	A two-region transport model for interpreting <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si20.svg"><mml:mrow><mml:msub><mml:mi>T</mml:mi><mml:mn>1</mml:mn></mml:msub></mml:mrow></mml:math>-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si21.svg"><mml:mrow><mml:msub><mml:mi>T</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> measurements in complex systems. Journal of Magnetic Resonance, 2019, 308, 106592.	2.1	3
84	Mechanisms of water permeation and diffusive API release from stearyl alcohol and glyceryl behenate modified release matrices. International Journal of Pharmaceutics, 2020, 589, 119819.	5.2	3
85	Axial variability of pattern formation in Rayleigh-BÃ©nard convection: MRI velocimetry in a low aspect ratio cylinder. International Communications in Heat and Mass Transfer, 2020, 118, 104869.	5.6	3
86	Reactors and Reactions. , 2006, , 509-533.		2
87	MRI of Water Transport in the Soilâ€“Plantâ€“Atmosphere Continuum. , 0, , 315-330.		2
88	Colloid particle transport in a microcapillary: NMR study of particle and suspending fluid dynamics. Chemical Engineering Science, 2016, 153, 165-173.	3.8	2
89	Noninvasive Assessment of Moisture Migration in Food Products by MRI. , 0, , 331-351.		1
90	Dynamic Nuclear Polarization-Enhanced Magnetic Resonance Analysis at X-Band Using Amplified1H Water Signal. , 0, , 161-176.		1

#	Article	IF	Citations
91	Hydrodynamic dispersion in $ eta$ -lactoglobulin gels measured by PGSE NMR. European Physical Journal E, 2011, 34, 18.	1.6	1
92	Imaging of Water in Polymer Electrolyte Membrane in Fuel Cells. , 0, , 421-433.		1
93	NMR Imaging of Moisture and Ion Transport in Building Materials. , 0, , 451-464.		1
94	NMR Characterization of unfrozen brine vein distribution and structure in model packed beds. Cold Regions Science and Technology, 2022, 199, 103572.	3.5	1
95	Nuclear Magnetic Resonance Studies of Granular Flows â€“ Current Status. Materials Research Society Symposia Proceedings, 2000, 627, 1.	0.1	0
96	Applications of Permanent-Magnet Compact MRI Systems. , 0, , 365-380.		0
97	Magnetic Resonance Force Microscopy. , 0, , 49-63.		0
98	Magnetic Field Control of Chemical Waves. , 0, , 381-398.		0
99	Fluid Distribution and Movement in Engineered Fibrous Substrates by Magnetic Resonance Microscopy. , 0, , 399-419.		0
100	Hyperpolarized83Kr MRI. , 0, , 129-144.		0
101	Using Magnetic Resonance to Measure the Interplay of Structure and Transport in Porous Media. , 2008, , .		0
102	High-resolution NMR studies of cartilage molecular motion. Osteoarthritis and Cartilage, 2015, 23, A102-A103.	1.3	0
103	Peclet number dependent superdiffusive hydrodynamic dispersion in a site percolation porous media measured by NMR. Microporous and Mesoporous Materials, 2018, 269, 56-59.	4.4	0