

Charles S Springer Jr

List of Publications by Year in descending order

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89
papers

5,107
citations

81743

39
h-index

88477

70
g-index

94
all docs

94
docs citations

94
times ranked

3929
citing authors

#	ARTICLE	IF	CITATIONS
1	Magnetic field and tissue dependencies of human brain longitudinal $^1\text{H}_2\text{O}$ relaxation in vivo. <i>Magnetic Resonance in Medicine</i> , 2007, 57, 308-318.	1.9	546
2	Bulk magnetic susceptibility shifts in nmr studies of compartmentalized samples: use of paramagnetic reagents. <i>Magnetic Resonance in Medicine</i> , 1990, 13, 239-262.	1.9	359
3	Determination of the MRI contrast agent concentration time course in vivo following bolus injection: Effect of equilibrium transcytolemmal water exchange. <i>Magnetic Resonance in Medicine</i> , 2000, 44, 563-574.	1.9	199
4	Equilibrium transcytolemmal water-exchange kinetics in skeletal muscle in vivo. <i>Magnetic Resonance in Medicine</i> , 1999, 42, 467-478.	1.9	192
5	Variation of the relaxographic ?shutter-speed? for transcytolemmal water exchange affects the CR bolus-tracking curve shape. <i>Magnetic Resonance in Medicine</i> , 2003, 50, 1151-1169.	1.9	171
6	A comprehensive approach to the analysis and interpretation of the resonances of spins $3/2$ from living systems. <i>NMR in Biomedicine</i> , 1991, 4, 209-226.	1.6	155
7	Equilibrium water exchange between the intra- and extracellular spaces of mammalian brain. <i>Magnetic Resonance in Medicine</i> , 2003, 50, 493-499.	1.9	147
8	A unified magnetic resonance imaging pharmacokinetic theory: Intravascular and extracellular contrast reagents. <i>Magnetic Resonance in Medicine</i> , 2005, 54, 1351-1359.	1.9	141
9	In vivo MR imaging and spectroscopy using hyperpolarized ^{129}Xe . <i>Magnetic Resonance in Medicine</i> , 1996, 36, 183-191.	1.9	138
10	Two-dimensional inverse Laplace transform NMR: altered relaxation times allow detection of exchange correlation. <i>Journal of the American Chemical Society</i> , 1993, 115, 7761-7764.	6.6	128
11	The intrinsic structural asymmetry of highly curved phospholipid bilayer membranes. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 1977, 470, 161-169.	1.4	102
12	The molecular environment of intracellular sodium: ^{23}Na NMR relaxation. <i>NMR in Biomedicine</i> , 1991, 4, 227-245.	1.6	97
13	Myelin water mapping by spatially regularized longitudinal relaxographic imaging at high magnetic fields. <i>Magnetic Resonance in Medicine</i> , 2014, 71, 375-387.	1.9	97
14	Early Prediction and Evaluation of Breast Cancer Response to Neoadjuvant Chemotherapy Using Quantitative DCE-MRI. <i>Translational Oncology</i> , 2016, 9, 8-17.	1.7	94
15	Effects of equilibrium exchange on diffusion-weighted NMR signals: The diffusigraphic ?shutter-speed?. <i>Magnetic Resonance in Medicine</i> , 2003, 49, 450-458.	1.9	89
16	Discrimination of Benign and Malignant Breast Lesions by Using Shutter-Speed Dynamic Contrast-enhanced MR Imaging. <i>Radiology</i> , 2011, 261, 394-403.	3.6	87
17	Simultaneous measurement of arterial input function and tumor pharmacokinetics in mice by dynamic contrast enhanced imaging: Effects of transcytolemmal water exchange. <i>Magnetic Resonance in Medicine</i> , 2004, 52, 248-257.	1.9	86
18	Evidence for shutter-speed variation in CR bolus-tracking studies of human pathology. <i>NMR in Biomedicine</i> , 2005, 18, 173-185.	1.6	85

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19	The magnetic resonance shutter speed discriminates vascular properties of malignant and benign breast tumors in vivo. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 17943-17948.	3.3	85
20	T1ρ-MRI contrast in the human brain: Modulation of the longitudinal rotating frame relaxation shutter-speed during an adiabatic RF pulse. Journal of Magnetic Resonance, 2006, 181, 135-147.	1.2	81
21	Intratumor mapping of intracellular water lifetime: metabolic images of breast cancer?. NMR in Biomedicine, 2014, 27, 760-773.	1.6	75
22	Three-compartment T ₁ relaxation model for intracellular paramagnetic contrast agents. Magnetic Resonance in Medicine, 2009, 61, 1049-1058.	1.9	73
23	Two-dimensional double-quantum NMR spectroscopy of isolated spin 3/2 systems: sodium-23 examples. Journal of the American Chemical Society, 1988, 110, 674-681.	6.6	70
24	Direct High-resolution Nuclear Magnetic Resonance Studies of Cation Transport in Vivo. Biophysical Journal, 1982, 38, 323-326.	0.2	69
25	Dynamic NMR effects in breast cancer dynamic-contrast-enhanced MRI. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 17937-17942.	3.3	69
26	Susceptibility changes following bolus injections. Magnetic Resonance in Medicine, 1993, 29, 700-708.	1.9	67
27	Shutter-speed analysis of contrast reagent bolus-tracking data: Preliminary observations in benign and malignant breast disease. Magnetic Resonance in Medicine, 2005, 53, 724-729.	1.9	67
28	Toward 20ÅT magnetic resonance for human brain studies: opportunities for discovery and neuroscience rationale. Magnetic Resonance Materials in Physics, Biology, and Medicine, 2016, 29, 617-639.	1.1	66
29	Extracellular volume and transsarcolemmal proton movement during ischemia and reperfusion: A31P NMR spectroscopic study of the isovolumic rat heart. NMR in Biomedicine, 1993, 6, 278-286.	1.6	61
30	Mapping human brain capillary water lifetime: high-resolution metabolic neuroimaging. NMR in Biomedicine, 2015, 28, 607-623.	1.6	58
31	Exchange-influenced T2ρ contrast in human brain images measured with adiabatic radio frequency pulses. Magnetic Resonance in Medicine, 2005, 53, 823-829.	1.9	53
32	Active Trans-Plasma Membrane Water Cycling in Yeast Is Revealed by NMR. Biophysical Journal, 2011, 101, 2833-2842.	0.2	50
33	Aqueous shift reagents for high-resolution cationic nuclear magnetic resonance. 2. Magnesium-25, potassium-39, and sodium-23 resonances shifted by chelidamate complexes of dysprosium(III) and thulium(III). Inorganic Chemistry, 1983, 22, 2388-2392.	1.9	48
34	Dynamic-contrast-enhanced-MRI with extravasating contrast reagent: Rat cerebral glioma blood volume determination. Journal of Magnetic Resonance, 2010, 206, 190-199.	1.2	47
35	Fast, Na ⁺ /K ⁺ pump driven, steady-state transcytolemmal water exchange in neuronal tissue: A study of rat brain cortical cultures. Magnetic Resonance in Medicine, 2018, 79, 3207-3217.	1.9	47
36	Evidence for cooperative effects in the binding of polyvalent metal ions to pure phosphatidylcholine bilayer vesicle surfaces. Biochimica Et Biophysica Acta - Biomembranes, 1981, 648, 28-48.	1.4	46

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37	31P and 23Na NMR spectroscopy of normal and ischemic rat skeletal muscle. Use of a shift reagent in vivo. NMR in Biomedicine, 1990, 3, 47-58.	1.6	46
38	Aqueous shift reagents for high-resolution cationic nuclear magnetic resonance. III. Dy(TTHA)3 ⁺ , Tm(TTHA)3 ⁺ , and Tm(PPP)27 ⁺ . Journal of Magnetic Resonance, 1984, 56, 33-47.	0.5	43
39	Using 1H2O MR to measure and map sodium pump activity in vivo. Journal of Magnetic Resonance, 2018, 291, 110-126.	1.2	43
40	Sodium MRI revisited. Magnetic Resonance in Medicine, 2019, 82, 521-524.	1.9	42
41	Deconvolution of Compartmental Water Diffusion Coefficients in Yeast-Cell Suspensions Using Combined T1 and Diffusion Measurements. Journal of Magnetic Resonance, 2002, 156, 52-63.	1.2	41
42	First-pass dynamic contrast-enhanced MRI with extravasating contrast reagent: evidence for human myocardial capillary recruitment in adenosine-induced hyperemia. NMR in Biomedicine, 2009, 22, 148-157.	1.6	39
43	Physicochemical Principles Influencing Magnetopharmaceuticals. , 1994, , 75-99.		38
44	Abnormal brain activation to visual stimulation in cocaine abusers. Life Sciences, 2003, 73, 1953-1961.	2.0	37
45	Aqueous shift reagents for high-resolution cation NMR. VI. Titration curves for in vivo 23Na and 1H2O MRS obtained from rat blood. NMR in Biomedicine, 1993, 6, 7-20.	1.6	35
46	The Evaluation of Esophageal Adenocarcinoma Using Dynamic Contrast-Enhanced Magnetic Resonance Imaging. Journal of Gastrointestinal Surgery, 2008, 12, 166-175.	0.9	35
47	Feasibility of shutter-speed DCE-MRI for improved prostate cancer detection. Magnetic Resonance in Medicine, 2013, 69, 171-178.	1.9	35
48	Sodium transport and phosphorus metabolism in sodium-loaded yeast: simultaneous observation with sodium-23 and phosphorus-31 NMR spectroscopy in vivo. Biochemistry, 1987, 26, 4953-4962.	1.2	34
49	Complexes of nucleophiles with rare earth chelates. II. Self association and adduct formation of the lanthanide tris(1,1,1,2,2,3,3-heptafluoro-7,7-dimethyl-4,6-octanedionate) chelates proserodymium(fod)3 and europium(fod)3. Inorganic Chemistry, 1974, 13, 880-885.	1.9	33
50	Relative sensitivities of DCE-MRI pharmacokinetic parameters to arterial input function (AIF) scaling. Journal of Magnetic Resonance, 2016, 269, 104-112.	1.2	33
51	Increasing the time resolution of dynamic nuclear magnetic resonance spectroscopy through the use of lanthanide shift reagents. Journal of the American Chemical Society, 1973, 95, 6227-6232.	6.6	30
52	Cell membrane water exchange effects in prostate DCE-MRI. Journal of Magnetic Resonance, 2012, 218, 77-85.	1.2	30
53	Aqueous shift reagents for high-resolution cationic nuclear magnetic resonance. Journal of Magnetic Resonance, 1982, 46, 348-353.	0.5	25
54	Human whole blood ¹ H ₂ O longitudinal relaxation with normal and high-relaxivity contrast reagents: Influence of transcellular membrane water exchange. Magnetic Resonance in Medicine, 2014, 72, 1746-1754.	1.9	25

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55	Using Flow Relaxography to Elucidate Flow Relaxivity. <i>Journal of Magnetic Resonance</i> , 1999, 136, 102-113.	1.2	24
56	Transmembrane Ion Pumping: High Resolution Cation NMR Spectroscopy. <i>Annals of the New York Academy of Sciences</i> , 1987, 508, 130-148.	1.8	22
57	Human whole blood ¹ H ₂ O transverse relaxation with gadolinium-based contrast reagents: Magnetic susceptibility and transmembrane water exchange. <i>Magnetic Resonance in Medicine</i> , 2017, 77, 2015-2027.	1.9	22
58	NMR shutter-speed elucidates apparent population inversion of ¹ H ₂ O signals due to active transmembrane water cycling. <i>Magnetic Resonance in Medicine</i> , 2019, 82, 411-424.	1.9	22
59	Magnetic susceptibility shift selected imaging: MESSI. <i>Magnetic Resonance in Medicine</i> , 1990, 16, 80-90.	1.9	21
60	Brain active transmembrane water cycling measured by MR is associated with neuronal activity. <i>Magnetic Resonance in Medicine</i> , 2019, 81, 1280-1295.	1.9	21
61	Chiral chelates with chiral ligands. Stereoisomers of tris[(+)-3-acetylcamphorato]cobalt(III). <i>Inorganic Chemistry</i> , 1971, 10, 1242-1250.	1.9	20
62	Measurements of human brain ethanol T ₂ by spectroscopic imaging at 4 T. <i>Magnetic Resonance in Medicine</i> , 2000, 44, 35-40.	1.9	20
63	Magnetic susceptibility shift selected imaging (MESSI) and localized ¹ H ₂ O spectroscopy in living plant tissues. <i>NMR in Biomedicine</i> , 2000, 13, 392-397.	1.6	18
64	Shutter-speed DCE-MRI Analyses of Human Glioblastoma Multiforme (GBM) Data. <i>Journal of Magnetic Resonance Imaging</i> , 2020, 52, 850-863.	1.9	18
65	Ionophore-catalyzed cation transport between phospholipid inverted micelles manifest in DNMR. <i>Biophysical Chemistry</i> , 1981, 14, 375-388.	1.5	17
66	Aqueous shift reagents for high-resolution cation NMR spectroscopy. 4. [o-Bis((3-tripolyphosphato)propyloxy)benzene(-)]dysprosate(5-). <i>Inorganic Chemistry</i> , 1990, 29, 660-667.	1.9	16
67	Intimate combination of low- and high-resolution image data: I. real-space PET and ¹ H ₂ O MRI, PETAMRI. <i>Magnetic Resonance in Medicine</i> , 1999, 42, 345-360.	1.9	15
68	Interaction of antibiotic lasalocid A (X537A) with praseodymium(III) in methanol. <i>Bioinorganic Chemistry</i> , 1978, 9, 101-122.	1.2	14
69	4.0 T Water Proton T ₁ Relaxation Times in Normal Human Brain and During Acute Ethanol Intoxication. <i>Alcoholism: Clinical and Experimental Research</i> , 2000, 24, 830-836.	1.4	14
70	²⁵ Mg NMR Studies of magnesium binding to erythrocyte constituents. <i>Journal of Inorganic Biochemistry</i> , 1991, 44, 79-87.	1.5	13
71	Discrimination of intra- and extracellular ²³ Na ⁺ signals in yeast cell suspensions using longitudinal magnetic resonance relaxography. <i>Journal of Magnetic Resonance</i> , 2010, 205, 28-37.	1.2	13
72	Hyperfine shift NMR studies of hydrated phospholipid inverted micelles. <i>Chemistry and Physics of Lipids</i> , 1979, 23, 23-40.	1.5	11

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73	The effects of equilibrium transcytolemmal water exchange on the determination of contrast reagent concentration in vivo. <i>Magnetic Resonance in Medicine</i> , 2002, 47, 422-424.	1.9	11
74	Direct measurement of enantiomerization of labile aluminium(III) ²⁺ -diketonates. <i>Challenge</i> , 1971, .	0.4	9
75	Resting brain metabolic activity in a 4 Tesla magnetic field. <i>Magnetic Resonance in Medicine</i> , 2000, 44, 701-705.	1.9	8
76	Pharmaco-thermodynamics of deuterium-induced oedema in living rat brain via ¹ H ₂ O MRI: implications for boron neutron capture therapy of malignant brain tumours. <i>Physics in Medicine and Biology</i> , 2005, 50, 2127-2139.	1.6	7
77	Na ⁺ /Ca ²⁺ -exchanger-mediated Mn ²⁺ -enhanced ¹ H ₂ O MRI in hypoxic, perfused rat myocardium. <i>Contrast Media and Molecular Imaging</i> , 2007, 2, 248-257.	0.4	7
78	Observation of Reduced Homeostatic Metabolic Activity and/or Coupling in White Matter Aging. <i>Journal of Neuroimaging</i> , 2020, 30, 658-665.	1.0	7
79	DCE-MRI of Brain Fluid Barriers: <i>In Vivo</i> Water Cycling at the Human Choroid Plexus. <i>Tissue Barriers</i> , 2022, 10, 1963143.	1.6	6
80	Synergistic Antivascular and Antitumor Efficacy with Combined Cediranib and SC6889 in Intracranial Mouse Glioma. <i>PLoS ONE</i> , 2015, 10, e0144488.	1.1	6
81	Metabolic activity diffusion imaging (MADI): I. Metabolic, cytometric modeling and simulations. <i>NMR in Biomedicine</i> , 2023, 36, .	1.6	6
82	Gray matter blood-brain barrier water exchange dynamics are reduced in progressive multiple sclerosis. <i>Journal of Neuroimaging</i> , 2021, 31, 1111-1118.	1.0	5
83	Metabolic activity diffusion imaging (MADI): II. Noninvasive, high-resolution human brain mapping of sodium pump flux and cell metrics. <i>NMR in Biomedicine</i> , 2023, 36, .	1.6	5
84	Magnetic field dependence of ²³ Na NMR spectra of rat skeletal muscle infused with shift reagent in Vivo. <i>Journal of Magnetic Resonance</i> , 1989, 83, 138-145.	0.5	4
85	Metabolic imaging of in vivo myocardium. <i>Journal of Cardiovascular Magnetic Resonance</i> , 2015, 17, P251.	1.6	2
86	Hyperfine Induced Splitting of Free Solute Nuclear Magnetic Resonances in Small Phospholipid Vesicle Preparations. <i>ACS Symposium Series</i> , 1976, , 483-498.	0.5	1
87	Two-dimensional multiple-quantum NMR spectroscopy of isolated half-integer spin systems. II. ³⁵ Cl examples. <i>Journal of Magnetic Resonance</i> , 1989, 83, 279-298.	0.5	1
88	Aqueous shift reagents for high-resolution cation NMR. V. Thermodynamics of interaction of DyTTHA ³⁻ with Na ⁺ , K ⁺ , Mg ²⁺ , and Ca ²⁺ . <i>Journal of Magnetic Resonance</i> , 1990, 87, 287-303.	0.5	1
89	Bayesian image decomposition applied to relaxographic imaging. <i>International Journal of Imaging Systems and Technology</i> , 2005, 15, 2-9.	2.7	1