

Boyd M Goodson

List of Publications by Year in descending order

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86
papers

4,964
citations

94269

37
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91712

69
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94
all docs

94
docs citations

94
times ranked

2399
citing authors

#	ARTICLE	IF	CITATIONS
1	Direct Imaging of Transient Molecular Structures with Ultrafast Diffraction. <i>Science</i> , 2001, 291, 458-462.	6.0	486
2	Nuclear Magnetic Resonance of Laser-Polarized Noble Gases in Molecules, Materials, and Organisms. <i>Journal of Magnetic Resonance</i> , 2002, 155, 157-216.	1.2	412
3	Microtesla SABRE Enables 10% Nitrogen-15 Nuclear Spin Polarization. <i>Journal of the American Chemical Society</i> , 2015, 137, 1404-1407.	6.6	275
4	NMR Hyperpolarization Techniques for Biomedicine. <i>Chemistry - A European Journal</i> , 2015, 21, 3156-3166.	1.7	247
5	Near-unity nuclear polarization with an open-source ¹²⁹ Xe hyperpolarizer for NMR and MRI. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 14150-14155.	3.3	193
6	¹⁵ N Hyperpolarization by Reversible Exchange Using SABRE-SHEATH. <i>Journal of Physical Chemistry C</i> , 2015, 119, 8786-8797.	1.5	192
7	Hyperpolarized NMR Spectroscopy: <i>d</i> -DNP, PHIP, and SABRE Techniques. <i>Chemistry - an Asian Journal</i> , 2018, 13, 1857-1871.	1.7	180
8	The Feasibility of Formation and Kinetics of NMR Signal Amplification by Reversible Exchange (SABRE) at High Magnetic Field (9.4 T). <i>Journal of the American Chemical Society</i> , 2014, 136, 3322-3325.	6.6	148
9	NMR Hyperpolarization Techniques of Gases. <i>Chemistry - A European Journal</i> , 2017, 23, 725-751.	1.7	140
10	Irreversible Catalyst Activation Enables Hyperpolarization and Water Solubility for NMR Signal Amplification by Reversible Exchange. <i>Journal of Physical Chemistry B</i> , 2014, 118, 13882-13889.	1.2	131
11	Over 20% ¹⁵ N Hyperpolarization in Under One Minute for Metronidazole, an Antibiotic and Hypoxia Probe. <i>Journal of the American Chemical Society</i> , 2016, 138, 8080-8083.	6.6	123
12	¹⁵ N Hyperpolarization of Imidazole- ¹⁵ N ₂ for Magnetic Resonance pH Sensing via SABRE-SHEATH. <i>ACS Sensors</i> , 2016, 1, 640-644.	4.0	111
13	Heterogeneous Solution NMR Signal Amplification by Reversible Exchange. <i>Angewandte Chemie - International Edition</i> , 2014, 53, 7495-7498.	7.2	90
14	Study of Xenon Binding in Cryptophane-A Using Laser-Induced NMR Polarization Enhancement. <i>Journal of the American Chemical Society</i> , 1999, 121, 3502-3512.	6.6	89
15	The Absence of Quadrupolar Nuclei Facilitates Efficient ¹³ C Hyperpolarization via Reversible Exchange with Parahydrogen. <i>ChemPhysChem</i> , 2017, 18, 1493-1498.	1.0	87
16	Hyperpolarization of Neat-Liquids by NMR Signal Amplification by Reversible Exchange. <i>Journal of Physical Chemistry Letters</i> , 2015, 6, 1961-1967.	2.1	85
17	A 3D-Printed High Power Nuclear Spin Polarizer. <i>Journal of the American Chemical Society</i> , 2014, 136, 1636-1642.	6.6	72
18	Facile Removal of Homogeneous SABRE Catalysts for Purifying Hyperpolarized Metronidazole, a Potential Hypoxia Sensor. <i>Journal of Physical Chemistry C</i> , 2018, 122, 16848-16852.	1.5	69

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19	Selective Enhancement of NMR Signals for α -Cyclodextrin with Laser-Polarized Xenon. <i>Angewandte Chemie International Edition in English</i> , 1997, 36, 2368-2370.	4.4	67
20	Aqueous NMR Signal Enhancement by Reversible Exchange in a Single Step Using Water-Soluble Catalysts. <i>Journal of Physical Chemistry C</i> , 2016, 120, 12149-12156.	1.5	63
21	Nanoscale Catalysts for NMR Signal Enhancement by Reversible Exchange. <i>Journal of Physical Chemistry C</i> , 2015, 119, 7525-7533.	1.5	61
22	Dendron-Functionalized Superparamagnetic Nanoparticles with Switchable Solubility in Organic and Aqueous Media: α Matrices for Homogeneous Catalysis and Potential MRI Contrast Agents. <i>Chemistry of Materials</i> , 2006, 18, 5973-5981.	3.2	60
23	Ultrafast Electron Diffraction and Structural Dynamics: α Transient Intermediates in the Elimination Reaction of C ₂ F ₄ I ₂ . <i>Journal of Physical Chemistry A</i> , 2002, 106, 4087-4103.	1.1	58
24	In Situ and Ex Situ Low-Field NMR Spectroscopy and MRI Endowed by SABRE Hyperpolarization. <i>ChemPhysChem</i> , 2014, 15, 4100-4107.	1.0	58
25	Heterogeneous Microtesla SABRE Enhancement of ^{15}N NMR Signals. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 10433-10437.	7.2	58
26	XeNA: An automated α "open-source" ^{129}Xe hyperpolarizer for clinical use. <i>Magnetic Resonance Imaging</i> , 2014, 32, 541-550.	1.0	57
27	Toward Hyperpolarized ^{19}F Molecular Imaging via Reversible Exchange with Parahydrogen. <i>ChemPhysChem</i> , 2017, 18, 1961-1965.	1.0	57
28	Ultrafast Diffraction of Transient Molecular Structures in Radiationless Transitions. <i>Journal of Physical Chemistry A</i> , 2001, 105, 11159-11164.	1.1	51
29	Encapsulation of Small Gas Molecules by Cryptophane-111 in Organic Solution. 1. Size- and Shape-Selective Complexation of Simple Hydrocarbons. <i>Journal of Physical Chemistry A</i> , 2009, 113, 13675-13684.	1.1	51
30	Hyperpolarizing Concentrated Metronidazole ^{15}N -NO ₂ Group over Six Chemical Bonds with More than 15% Polarization and a 20- α Minute Lifetime. <i>Chemistry - A European Journal</i> , 2019, 25, 8829-8836.	1.7	48
31	Generation of laser-polarized xenon using fiber-coupled laser-diode arrays narrowed with integrated volume holographic gratings. <i>Journal of Magnetic Resonance</i> , 2009, 197, 249-254.	1.2	46
32	Spin Relays Enable Efficient Long-Range Heteronuclear Signal Amplification by Reversible Exchange. <i>Journal of Physical Chemistry C</i> , 2017, 121, 28425-28434.	1.5	46
33	TiO ₂ nanoparticles in irrigation water mitigate impacts of aged Ag nanoparticles on soil microorganisms, <i>Arabidopsis thaliana</i> plants, and <i>Eisenia fetida</i> earthworms. <i>Environmental Research</i> , 2019, 172, 202-215.	3.7	43
34	α Direct ^{13}C Hyperpolarization of ^{13}C -Acetate by MicroTesla NMR Signal Amplification by Reversible Exchange (SABRE). <i>Angewandte Chemie - International Edition</i> , 2020, 59, 418-423.	7.2	41
35	Aqueous, Heterogeneous α -Hydrogen-Induced ^{15}N Polarization. <i>Journal of Physical Chemistry C</i> , 2017, 121, 15304-15309.	1.5	40
36	High-Resolution Low-Field Molecular Magnetic Resonance Imaging of Hyperpolarized Liquids. <i>Analytical Chemistry</i> , 2014, 86, 9042-9049.	3.2	39

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37	Temperature-Ramped ¹²⁹ Xe Spin-Exchange Optical Pumping. <i>Analytical Chemistry</i> , 2014, 86, 8206-8212.	3.2	37
38	Effects of diffusion on magnetic resonance imaging of laser-polarized xenon gas. <i>Journal of Chemical Physics</i> , 1998, 108, 6233-6239.	1.2	35
39	NMR Signal Amplification by Reversible Exchange of Sulfurâ€Heterocyclic Compounds Found In Petroleum. <i>ChemistrySelect</i> , 2016, 1, 2552-2555.	0.7	34
40	Multidimensional Mapping of Spin-Exchange Optical Pumping in Clinical-Scale Batch-Mode ¹²⁹ Xe Hyperpolarizers. <i>Journal of Physical Chemistry B</i> , 2014, 118, 4809-4816.	1.2	32
41	Quantifying the effects of quadrupolar sinks <i>via</i> ¹⁵ N relaxation dynamics in metronidazoles hyperpolarized <i>via</i> SABRE-SHEATH. <i>Chemical Communications</i> , 2020, 56, 9098-9101.	2.2	32
42	Using frequency-narrowed, tunable laser diode arrays with integrated volume holographic gratings for spin-exchange optical pumping at high resonant fluxes and xenon densities. <i>Applied Physics B: Lasers and Optics</i> , 2012, 106, 775-788.	1.1	30
43	Orderâ€Unity ¹³ C Nuclear Polarization of [1â€ ¹³ C]Pyruvate in Seconds and the Interplay of Water and SABRE Enhancement. <i>ChemPhysChem</i> , 2022, 23, .	1.0	30
44	Interdependence of in-cell xenon density and temperature during Rb/ ¹²⁹ Xe spin-exchange optical pumping using VH-narrowed laser diode arrays. <i>Journal of Magnetic Resonance</i> , 2011, 208, 298-304.	1.2	29
45	Impact of wastewater effluent containing aged nanoparticles and other components on biological activities of the soil microbiome, Arabidopsis plants, and earthworms. <i>Environmental Research</i> , 2018, 164, 197-203.	3.7	28
46	Using injectable carriers of laser-polarized noble gases for enhancing NMR and MRI. , 1999, 11, 203-223.		27
47	Characterization of violet emission from Rb optical pumping cells used in laser-polarized xenon NMR experiments. <i>Chemical Physics Letters</i> , 2006, 428, 268-276.	1.2	27
48	Robust Imidazoleâ€ ¹⁵ N ₂ Synthesis for Highâ€Resolution Lowâ€Field (0.05 T) ¹⁵ Nâ€Hyperpolarized NMR Spectroscopy. <i>ChemistrySelect</i> , 2017, 2, 4478-4483.	0.7	27
49	Heterogeneous Microtesla SABRE Enhancement of ¹⁵ N NMR Signals. <i>Angewandte Chemie</i> , 2017, 129, 10569-10573.	1.6	27
50	NMR of supercritical laser-polarized xenon. <i>Chemical Physics Letters</i> , 1998, 292, 686-690.	1.2	26
51	Enabling Clinical Technologies for Hyperpolarized ¹²⁹ Xenon Magnetic Resonance Imaging and Spectroscopy. <i>Angewandte Chemie - International Edition</i> , 2021, 60, 22126-22147.	7.2	26
52	Imaging of Biomolecular NMR Signals Amplified by Reversible Exchange with Parahydrogen Inside an MRI Scanner. <i>Journal of Physical Chemistry C</i> , 2017, 121, 25994-25999.	1.5	25
53	Ultrafast electron diffraction: complex landscapes of molecular structures in thermal and light-mediated reactions. <i>Chemical Physics Letters</i> , 2003, 374, 417-424.	1.2	20
54	Low-Cost High-Pressure Clinical-Scale 50% Parahydrogen Generator Using Liquid Nitrogen at 77 K. <i>Analytical Chemistry</i> , 2021, 93, 8476-8483.	3.2	20

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55	Batch-Mode Clinical-Scale Optical Hyperpolarization of Xenon-129 Using an Aluminum Jacket with Rapid Temperature Ramping. Analytical Chemistry, 2020, 92, 4309-4316.	3.2	19
56	Relaxation Dynamics of Nuclear Long-Lived Spin States in Propane and Propane-d6 Hyperpolarized by Parahydrogen. Journal of Physical Chemistry C, 2019, 123, 11734-11744.	1.5	18
57	Reduction of Spin Polarization near Landau Filling Factor $\nu=3$ in GaAs/AlGaAs Quantum Wells. Physical Review Letters, 1999, 82, 2768-2771.	2.9	17
58	$\langle \text{Xe} \rangle$		

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73	A versatile synthetic route to the preparation of ¹⁵ N heterocycles. Journal of Labelled Compounds and Radiopharmaceuticals, 2019, 62, 892-902.	0.5	7
74	Driving wave packet recurrences with optimally modulated laser pulses. Journal of Chemical Physics, 2000, 112, 5081-5090.	1.2	6
75	NMR studies of chloroform@cryptophane-A and chloroform@bis-cryptophane inclusion complexes oriented in thermotropic liquid crystals. Solid State Nuclear Magnetic Resonance, 2006, 29, 104-112.	1.5	6
76	Helium-rich mixtures for improved batch-mode clinical-scale spin-exchange optical pumping of Xenon-129. Journal of Magnetic Resonance, 2020, 315, 106739.	1.2	6
77	Effects of Small Neutral Molecules on Phospholipid Bicelle Ordering. Langmuir, 2004, 20, 8437-8441.	1.6	5
78	Effects of a Tridentate Pincer Ligand on Parahydrogen Induced Polarization. ChemPhysChem, 2021, 22, 1518-1526.	1.0	4
79	Automated Low-Cost In Situ IR and NMR Spectroscopy Characterization of Clinical-Scale 129Xe Spin-Exchange Optical Pumping. Analytical Chemistry, 2021, 93, 3883-3888.	3.2	3
80	Bridging the Gap: From Homogeneous to Heterogeneous Parahydrogen-Induced Hyperpolarization and Beyond. ChemPhysChem, 2021, 22, 710-715.	1.0	3
81	Enabling Clinical Technologies for Hyperpolarized ¹²⁹ Xenon Magnetic Resonance Imaging and Spectroscopy. Angewandte Chemie, 2021, 133, 22298-22319.	1.6	3
82	Pilot Quality-Assurance Study of a Third-Generation Batch-Mode Clinical-Scale Automated Xenon-129 Hyperpolarizer. Molecules, 2022, 27, 1327.	1.7	3
83	Frontispiece: NMR Hyperpolarization Techniques of Gases. Chemistry - A European Journal, 2017, 23, .	1.7	2
84	Using injectable carriers of laser-polarized noble gases for enhancing NMR and MRI. , 1999, 11, 203.		2
85	NMR Hyperpolarization Techniques of Gases. Chemistry - A European Journal, 2017, 23, 724-724.	1.7	1
86	NMR Spectroscopy Techniques: Hyperpolarization for Sensitivity Enhancement. , 2018, , 168-168.		1