Frederic Mentink-Vigier

List of Publications by Year
in descending order

52	2,399	257450 24	206112 48
papers	citations	h-index	g-index

58	58	58	2155
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Lignin-polysaccharide interactions in plant secondary cell walls revealed by solid-state NMR. Nature Communications, 2019, 10, 347.	12.8	320
2	Molecular architecture of fungal cell walls revealed by solid-state NMR. Nature Communications, 2018, 9, 2747.	12.8	204
3	Overhauser effects in insulating solids. Journal of Chemical Physics, 2014, 141, 064202.	3.0	152
4	Nuclear depolarization and absolute sensitivity in magic-angle spinning cross effect dynamic nuclear polarization. Physical Chemistry Chemical Physics, 2015, 17, 21824-21836.	2.8	144
5	Fast passage dynamic nuclear polarization on rotating solids. Journal of Magnetic Resonance, 2012, 224, 13-21.	2.1	140
6	Theoretical aspects of Magic Angle Spinning - Dynamic Nuclear Polarization. Journal of Magnetic Resonance, 2015, 258, 102-120.	2.1	101
7	Computationally Assisted Design of Polarizing Agents for Dynamic Nuclear Polarization Enhanced NMR: The AsymPol Family. Journal of the American Chemical Society, 2018, 140, 11013-11019.	13.7	92
8	Carbohydrate-aromatic interface and molecular architecture of lignocellulose. Nature Communications, 2022, 13, 538.	12.8	82
9	Fast and accurate MASâ€“DNP simulations of large spin ensembles. Physical Chemistry Chemical Physics, 2017, 19, 3506-3522.	2.8	76
10	Efficient cross-effect dynamic nuclear polarization without depolarization in high-resolution MAS NMR. Chemical Science, 2017, 8, 8150-8163.	7.4	76
11	Pushing NMR sensitivity limits using dynamic nuclear polarization with closed-loop cryogenic helium sample spinning. Chemical Science, 2015, 6, 6806-6812.	7.4	72
12	The â€œMissingâ€•Bicarbonate in CO₂ Chemisorption Reactions on Solid Amine Sorbents. Journal of the American Chemical Society, 2018, 140, 8648-8651.	13.7	64
13	Increasing sensitivity of pulse EPR experiments using echo train detection schemes. Journal of Magnetic Resonance, 2013, 236, 117-125.	2.1	63
14	Exploring Applications of Covalent Organic Frameworks: Homogeneous Reticulation of Radicals for Dynamic Nuclear Polarization. Journal of the American Chemical Society, 2018, 140, 6969-6977.	13.7	62
15	Arabinosyl Deacetylase Modulates the Arabinoxylan Acetylation Profile and Secondary Wall Formation. Plant Cell, 2019, 31, 1113-1126.	6.6	60
16	Solid-State NMR Investigations of Extracellular Matrixes and Cell Walls of Algae, Bacteria, Fungi, and Plants. Chemical Reviews, 2022, 122, 10036-10086.	47.7	60
17	Cyclic polyacetylene. Nature Chemistry, 2021, 13, 792-799.	13.6	51
18	A quasi-optical and corrugated waveguide microwave transmission system for simultaneous dynamic nuclear polarization NMR on two separate 14.1â€¯T spectrometers. Journal of Magnetic Resonance, 2018, 289, 35-44.	2.1	49

#	Article	IF	Citations
19	Atomic resolution of cotton cellulose structure enabled by dynamic nuclear polarization solid-state NMR. Cellulose, 2019, 26, 329-339.	4.9	44
20	Mapping the oxygen structure of Î³-Al2O3 by high-field solid-state NMR spectroscopy. Nature Communications, 2020, 11, 3620.	12.8	42
21	De novo prediction of cross-effect efficiency for magic angle spinning dynamic nuclear polarization. Physical Chemistry Chemical Physics, 2019, 21, 2166-2176.	2.8	32
22	Optimizing nitroxide biradicals for cross-effect MAS-DNP: the role of g-tensorsâ€™ distance. Physical Chemistry Chemical Physics, 2020, 22, 3643-3652.	2.8	32
23	Solid-state NMR of unlabeled plant cell walls: high-resolution structural analysis without isotopic enrichment. Biotechnology for Biofuels, 2021, 14, 14.	6.2	32
24	Highly Efficient Polarizing Agents for MASâ€DNP of Protonâ€Dense Molecular Solids. Angewandte Chemie - International Edition, 2022, 61, .	13.8	30
25	Direct observation of hyperpolarization breaking through the spin diffusion barrier. Science Advances, 2021, 7, .	10.3	26
26	Direct ¹⁷O Isotopic Labeling of Oxides Using Mechanochemistry. Inorganic Chemistry, 2020, 59, 13050-13066.	4.0	24
27	Overhauser effects in non-conducting solids at 1.2â€¯K. Journal of Magnetic Resonance, 2018, 286, 138-142.	2.1	22
28	Imaging active site chemistry and protonation states: NMR crystallography of the tryptophan synthase Î±-aminoacrylate intermediate. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	18
29	Dynamic Nuclear Polarization of Biomembrane Assemblies. Biomolecules, 2020, 10, 1246.	4.0	16
30	Magnetic resonance electrical property mapping at 21.1 T: a study of conductivity and permittivity in phantoms, ex vivo tissue and in vivo ischemia. Physics in Medicine and Biology, 2020, 65, 055007.	3.0	15
31	Biomolecular complex viewed by dynamic nuclear polarization solid-state NMR spectroscopy. Biochemical Society Transactions, 2020, 48, 1089-1099.	3.4	15
32	Structure of In Vitro-Synthesized Cellulose Fibrils Viewed by Cryo-Electron Tomography and ¹³C Natural-Abundance Dynamic Nuclear Polarization Solid-State NMR. Biomacromolecules, 2022, 23, 2290-2301.	5.4	15
33	Expanding the Analytical Window for Biochar Speciation: Molecular Comparison of Solvent Extraction and Water-Soluble Fractions of Biochar by FT-ICR Mass Spectrometry. Analytical Chemistry, 2021, 93, 15365-15372.	6.5	13
34	Persistent Radicals of Selfâ€assembled Benzophenone bisâ€Urea Macrocycles: Characterization and Application as a Polarizing Agent for Solidâ€state DNP MAS Spectroscopy. Chemistry - A European Journal, 2017, 23, 8315-8319.	3.3	11
35	The distance between g-tensors of nitroxide biradicals governs MAS-DNP performance: The case of the bTurea family. Journal of Magnetic Resonance, 2021, 329, 107026.	2.1	11
36	Mechanistic Insights into the Structural Stability of Collagen-Containing Biomaterials Such as Bones and Cartilage. Journal of Physical Chemistry B, 2021, 125, 4757-4766.	2.6	10

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37	Labeling and Probing the Silica Surface Using Mechanochemistry and 17 Oâ€…NMR Spectroscopy**. Chemistry - A European Journal, 2021, 27, 12574-12588.	3.3	10
38	Giant titanium electron wave function in gallium oxide: A potential electron-nuclear spin system for quantum information processing. Physical Review B, 2010, 82, .	3.2	9
39	The ¹³C solid DNP mechanisms with perchlorotriphenylmethyl radicals â€“ the role of ^{35,37}Cl. Physical Chemistry Chemical Physics, 2014, 16, 19218-19228.	2.8	9
40	Atomic-Scale Structure of Mesoporous Silica-Encapsulated Pt and PtSn Nanoparticles Revealed by Dynamic Nuclear Polarization-Enhanced 29Si MAS NMR Spectroscopy. Journal of Physical Chemistry C, 2019, 123, 7299-7307.	3.1	9
41	Direct dynamic nuclear polarization of 15N and 13C spins at 14.1 T using a trityl radical and magic angle spinning. Solid State Nuclear Magnetic Resonance, 2019, 100, 85-91.	2.3	9
42	Preparation of Fungal and Plant Materials for Structural Elucidation Using Dynamic Nuclear Polarization Solid-State NMR. Journal of Visualized Experiments, 2019, , .	0.3	9
43	On the use of radioâ€frequency offsets for improving doubleâ€quantum homonuclear dipolar recoupling of halfâ€integerâ€spin quadrupolar nuclei. Magnetic Resonance in Chemistry, 2021, 59, 991-1008.	1.9	9
44	Dynamic nuclear polarization-enhanced, double-quantum filtered 13C-13C dipolar correlation spectroscopy of natural 13C abundant bone-tissue biomaterial. Journal of Magnetic Resonance, 2022, 335, 107144.	2.1	8
45	Spinning-Driven Dynamic Nuclear Polarization with Optical Pumping. Journal of Physical Chemistry A, 2022, 126, 2600-2608.	2.5	8
46	Current limitations of solid-state NMR in carbohydrate and cell wall research. Journal of Magnetic Resonance, 2022, 341, 107263.	2.1	8
47	Origin of the decoherence of the extended electron spin state in Ti-doped Î²-Ga₂O₃. Journal of Physics Condensed Matter, 2013, 25, 316002.	1.8	6
48	NMR Reveals Two Bicarbonate Environments in SBA15-Solid-Amine CO₂ Sorbents. Journal of Physical Chemistry C, 2021, 125, 16759-16765.	3.1	6
49	Numerical recipes for faster MAS-DNP simulations. Journal of Magnetic Resonance, 2021, 333, 107106.	2.1	6
50	Solid-State NMR Analysis of Unlabeled Fungal Cell Walls from Aspergillus and Candida Species. Journal of Structural Biology: X, 2022, , 100070.	1.3	5
51	Strong isotopic effect in the electron-mediated nuclear-nuclear interaction in solids. Physical Review B, 2011, 83, .	3.2	3
52	Highly Efficient Polarizing Agents for MASâ€DNP of Protonâ€Dense Molecular Solids. Angewandte Chemie, 0, , .	2.0	1