Patrick Berthault

List of Publications by Year
in descending order

Version: 2024-02-01

110 papers	3,334 citations	126907 33 h-index	175258 52 g-index
116 all docs	116 docs citations	116 times ranked	2364 citing authors

#	Article	IF	Citations
1	Water Soluble Cryptophanes Showing Unprecedented Affinity for Xenon:Â Candidates as NMR-Based Biosensors. Journal of the American Chemical Society, 2006, 128, 6239-6246.	13.7	139
2	A Cryptophane Core Optimized for Xenon Encapsulation. Journal of the American Chemical Society, 2007, 129, 10332-10333.	13.7	110
3	Biosensing using laser-polarized xenon NMR/MRI. Progress in Nuclear Magnetic Resonance Spectroscopy, 2009, 55, 35-60.	7.5	105
4	Improved Versions of Off-Resonance ROESY. Journal of Magnetic Resonance Series A, 1995, 113, 47-52.	1.6	99
5	Off-resonance rf fields in heteronuclear NMR: Application to the study of slow motions. Journal of Biomolecular NMR, 1997, 10, 363-372.	2.8	92
6	Off-Resonance ROESY for the Study of Dynamic Processes. Journal of Magnetic Resonance Series A, 1994, 108, 219-229.	1.6	85
7	Synthesis, Conformation, and Binding Properties of Cyclodextrin Homo- and Heterodimers Connected through Their Secondary Sides. Chemistry - A European Journal, 1998, 4, 2237-2250.	3.3	84
8	Enantiopure [Cs⁺/XeâŠ‚Cryptophane]âŠ‚Fe^{II}₄L₄ Hierarchical Superstructures. Journal of the American Chemical Society, 2019, 141, 8339-8345.	13.7	83
9	Cell uptake of a biosensor detected by hyperpolarized 129Xe NMR: The transferrin case. Bioorganic and Medicinal Chemistry, 2011, 19, 4135-4143.	3.0	82
10	A Water-Soluble Xe@cryptophane-111 Complex Exhibits Very High Thermodynamic Stability and a Peculiar ¹²⁹Xe NMR Chemical Shift. Journal of the American Chemical Society, 2010, 132, 15505-15507.	13.7	79
11	A Cryptophane Biosensor for the Detection of Specific Nucleotide Targets through Xenon NMR Spectroscopy. ChemPhysChem, 2007, 8, 2082-2085.	2.1	77
12	Elucidation of the Self-Assembly Pathway of Lanreotide Octapeptide into Î²-Sheet Nanotubes: Role of Two Stable Intermediates. Journal of the American Chemical Society, 2010, 132, 4230-4241.	13.7	75
13	A Sensitive Zincâ€Activated ¹²⁹Xe MRI Probe. Angewandte Chemie - International Edition, 2012, 51, 4100-4103.	13.8	75
14	Conformation of the Oligosaccharide Chain of GM1 Ganglioside in a Carbohydrate-Enriched Surface. Biophysical Journal, 1998, 74, 309-318.	0.5	74
15	Smart Detection of Toxic Metal Ions, Pb²⁺ and Cd²⁺, Using a ¹²⁹Xe NMR-Based Sensor. Analytical Chemistry, 2014, 86, 1783-1788.	6.5	65
16	Study of dynamic processes in liquids using off-resonance rf irradiation. Progress in Nuclear Magnetic Resonance Spectroscopy, 1999, 35, 295-340.	7.5	64
17	Magnetization transfer from laser-polarized xenon to protons located in the hydrophobic cavity of the wheat nonspecific lipid transfer protein. Protein Science, 2001, 10, 762-770.	7.6	64
18	Singleâ€Scan Multidimensional NMR Analysis of Mixtures at Subâ€Millimolar Concentrations by using SABRE Hyperpolarization. ChemPhysChem, 2015, 16, 3413-3417.	2.1	59

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19	Cryptophane-Xenon Complexes in Organic Solvents Observed through NMR Spectroscopy. Journal of Physical Chemistry A, 2008, 112, 11363-11372.	2.5	57
20	Effect of pH and Counterions on the Encapsulation Properties of Xenon in Waterâ€Soluble Cryptophanes. Chemistry - A European Journal, 2010, 16, 12941-12946.	3.3	53
21	NMR study of a LewisX pentasaccharide derivative: solution structure and interaction with cations. Carbohydrate Research, 1999, 315, 48-62.	2.3	49
22	Ultrafast Z-Spectroscopy for 129Xe NMR-Based Sensors. Journal of Physical Chemistry Letters, 2013, 4, 4172-4176.	4.6	48
23	Sensitivity and Multiplexing Capabilities of MRI Based on Polarized ¹²⁹Xe Biosensors. Journal of the American Chemical Society, 2008, 130, 16456-16457.	13.7	47
24	Study of slow molecular motions in solution using off-resonance irradiation in homonuclear NMR. Molecular Physics, 1995, 86, 1059-1073.	1.7	46
25	Direct evidence of a magnetization transfer between laser-polarized xenon and protons of a cage-molecule in water. European Physical Journal D, 2000, 12, 289-296.	1.3	45
26	Probing the Hydrophobic Cavity of Lipid Transfer Protein fromNicotianatabacumthrough Xenon-Based NMR Spectroscopy. Journal of the American Chemical Society, 2004, 126, 15738-15746.	13.7	45
27	Self-Assembly of a Molecular Capsule Driven by Electrostatic Interaction in Aqueous Solution. Journal of the American Chemical Society, 1998, 120, 8438-8447.	13.7	42
28	Scalable Synthesis of Cryptophane-1.1.1 and its Functionalization. Organic Letters, 2010, 12, 960-962.	4.6	39
29	Interaction of Xenon with Cucurbit[5]uril in Water. ChemPhysChem, 2011, 12, 1053-1055.	2.1	37
30	Determination of the structure of [Nle⁷]â€endothelin by ¹H NMR. International Journal of Peptide and Protein Research, 1991, 37, 315-324.	0.1	36
31	NMR Study of Optically Active Monosubstituted Cryptophanes and Their Interaction with Xenon. Journal of Physical Chemistry A, 2004, 108, 9608-9615.	2.5	35
32	Towards thrombosis-targeted zeolitenanoparticles for laser-polarized129Xe MRI. Journal of Materials Chemistry, 2009, 19, 379-386.	6.7	35
33	Water-Soluble Molecular Capsule for the Complexation of Cesium and Thallium Cations. Journal of Physical Chemistry B, 2012, 116, 10905-10914.	2.6	34
34	Solution structure of a LewisX analogue by off-resonance 1H NMR spectroscopy without use of an internal distance reference. Journal of Biomolecular NMR, 1996, 8, 23-35.	2.8	33
35	Hyperpolarized ¹²⁹Xe NMR signature of living biological cells. NMR in Biomedicine, 2011, 24, 1264-1269.	2.8	33
36	Successive Inclusion of Water, [H3NCH2CH2NH3]2+ and [H3NCH2CH2NH2]+ in the Aromatic Cavity of (p-Sulfonato)calix[4]arene. European Journal of Organic Chemistry, 2000, 2000, 133-139.	2.4	32

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37	A doubly responsive probe for the detection of Cys4-tagged proteins. Chemical Communications, 2015, 51, 11482-11484.	4.1	32
38	The first metal-free water-soluble cryptophane-111. Chemical Communications, 2011, 47, 9702.	4.1	31
39	Evidence of Conformational Heterogeneity for Carbohydrate Mimetics. NMR Study of Methyl Î²-C-Lactoside in Aqueous Solution. Journal of Physical Chemistry A, 1997, 101, 2536-2540.	2.5	30
40	First Use of a Mineral Liquid Crystal for Measurement of Residual Dipolar Couplings of a Nonlabeled Biomolecule. Angewandte Chemie - International Edition, 2001, 40, 373-376.	13.8	30
41	Dynamics of Xenon Binding Inside the Hydrophobic Cavity of Pseudo-Wild-type Bacteriophage T4 Lysozyme Explored through Xenon-Based NMR Spectroscopy. Journal of the American Chemical Society, 2005, 127, 11676-11683.	13.7	30
42	3D-printed system optimizing dissolution of hyperpolarized gaseous species for micro-sized NMR. Lab on A Chip, 2015, 15, 2049-2054.	6.0	29
43	Observation of Noiseâ€Triggered Chaotic Emissions in an NMRâ€Maser. ChemPhysChem, 2008, 9, 1395-1401.	2.1	28
44	Is there a unique sequence in heparin for interaction with heparin cofactor II? Structural and biological studies of heparin-derived oligosaccharides. Journal of Biological Chemistry, 1988, 263, 8685-90.	3.4	28
45	Ripening of Catanionic Aggregates upon Dialysis. Langmuir, 2009, 25, 698-706.	3.5	27
46	Synthesis of Cucurbit[6]uril Derivatives and Insights into Their Solubility in Water. European Journal of Organic Chemistry, 2013, 2013, 3857-3865.	2.4	27
47	Understanding a Hostâ€“Guest Model System through ¹²⁹Xeâ€...NMR Spectroscopic Experiments and Theoretical Studies. Angewandte Chemie - International Edition, 2014, 53, 9837-9840.	13.8	26
48	Dipolar spectral densities from off-resonance 1H NMR relaxation measurements. Chemical Physics Letters, 1995, 233, 545-549.	2.6	25
49	An Isosparteine Derivative for Stereochemical Assignment of Stereogenic (Chiral) Methyl Groups Using Tritium NMR:Â Theory and Experiment. Journal of the American Chemical Society, 2005, 127, 412-420.	13.7	25
50	Nuclear Spinâ€Noise Spectra of Hyperpolarized Systems. Angewandte Chemie - International Edition, 2009, 48, 4341-4343.	13.8	24
51	Influence of the Cavity Size of Water-Soluble Cryptophanes on Their Binding Properties for Cesium and Thallium Cations. Journal of Physical Chemistry B, 2013, 117, 12593-12601.	2.6	24
52	Solvent-free hydrosilylation of alkenes and alkynes using recyclable platinum on carbon nanotubes. Green Chemistry, 2021, 23, 815-820.	9.0	23
53	1H NMR Study of the solution structure of sarafotoxin-S6b. Neurochemistry International, 1991, 18, 471-475.	3.8	22
54	Magnetization Transfer from Laser-Polarized Xenon to Protons with Spin-Diffusion Quenching. ChemPhysChem, 2003, 4, 384-387.	2.1	22

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55	¹²⁹Xe NMR-based sensors: biological applications and recent methods. Analyst, The, 2017, 142, 3298-3308.	3.5	21
56	Caesium Control of the Coordination Chemistry oftBu-calix[6]arenetowards Uranyl. European Journal of Inorganic Chemistry, 1998, 1998, 1859-1862.	2.0	20
57	A simple way to properly invert intense nuclear magnetization: application to laser-polarized xenon. Chemical Physics Letters, 1999, 314, 52-56.	2.6	20
58	Synthesis of a Functionalizable Water-Soluble Cryptophane-111. Organic Letters, 2013, 15, 2866-2868.	4.6	20
59	Rim-functionalized cryptophane-111 derivatives via heterocapping, and their xenon complexes. Chemical Communications, 2014, 50, 15905-15908.	4.1	20
60	Dilute liquid crystals used to enhance residual dipolar couplings may alter conformational equilibrium in oligosaccharides. Carbohydrate Research, 2003, 338, 1771-1785.	2.3	19
61	Design and Synthesis of New Cryptophanes with Intermediate Cavity Sizes. Organic Letters, 2011, 13, 2153-2155.	4.6	19
62	â€œClickableâ€•Hydrosoluble PEGylated Cryptophane as a Universal Platform for ¹²⁹Xe Magnetic Resonance Imaging Biosensors. Chemistry - A European Journal, 2013, 19, 6089-6093.	3.3	19
63	Synthesis of Cryptophanes with Two Different Reaction Sites: Chemical Platforms for Xenon Biosensing. Journal of Organic Chemistry, 2015, 80, 6143-6151.	3.2	19
64	Dynamics of Xenon inside Hydrophobic Cavities As Probed by NMR Relaxation of Dissolved Laser-Polarized Xenon. Journal of Physical Chemistry B, 2004, 108, 767-773.	2.6	18
65	Novel Zwitterionic Reverse Micelles for Encapsulation of Proteins in Low-Viscosity Media. Chemistry - A European Journal, 2006, 12, 4170-4175.	3.3	17
66	Synthesis of Cryptophane-B: Crystal Structure and Study of Its Complex with Xenon. Journal of Organic Chemistry, 2018, 83, 14465-14471.	3.2	17
67	202 MHz 31P NMR performances. Journal of Molecular Structure, 1987, 162, 87-95.	3.6	15
68	Note: Spin-exchange optical pumping in a van. Review of Scientific Instruments, 2016, 87, 016105.	1.3	15
69	Accurate pH Sensing using Hyperpolarized ¹²⁹Xeâ€...NMR Spectroscopy. Chemistry - A European Journal, 2018, 24, 6534-6537.	3.3	15
70	High resolution 1H-NMR study on self-complexation phenomena in cyclodextrin dimers. Tetrahedron, 1998, 54, 3513-3522.	1.9	14
71	Singleâ€Scan Diffusionâ€Ordered NMR Spectroscopy of SABREâ€Hyperpolarized Mixtures. ChemPhysChem, 2019, 20, 392-398.	2.1	14
72	Selective Capture of Thallium and Cesium by a Cryptophane Soluble at Neutral pH. Journal of Organic Chemistry, 2020, 85, 9622-9630.	3.2	13

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73	A self-included cyclomaltoheptaose derivative studied by NMR spectroscopy and molecular modelling. Carbohydrate Research, 1995, 276, 267-287.	2.3	12
74	Silicas of Unimodal and Bimodal Porosities Probed by129Xe NMR Spectroscopy. Journal of Physical Chemistry B, 2003, 107, 14388-14393.	2.6	12
75	Bimodal fluorescence/129Xe NMR probe for molecular imaging and biological inhibition of EGFR in Non-Small Cell Lung Cancer. Bioorganic and Medicinal Chemistry, 2017, 25, 6653-6660.	3.0	12
76	Complexation and Sensing Behavior of Dansyl-appended Cyclodextrins and Cyclodextrin Dimers with Bile Salts. Supramolecular Chemistry, 2002, 14, 143-151.	1.2	11
77	Measurement of Long-Range Interatomic Distances by Solid-State Tritium-NMR Spectroscopy. Journal of the American Chemical Society, 2010, 132, 1734-1735.	13.7	11
78	Use of dissolved hyperpolarized species in NMR: Practical considerations. Progress in Nuclear Magnetic Resonance Spectroscopy, 2020, 118-119, 74-90.	7.5	11
79	Are the Physical Properties of Xe@Cryptophane Complexes Easily Predictable? The Case of syn- and anti-Tris-aza-Cryptophanes. Journal of Organic Chemistry, 2021, 86, 7648-7658.	3.2	11
80	A Tunable One-StepN,Nâ€²-Disubstitution of 1,4,8,11-Tetraazacyclotetradecane with Acrylamide. European Journal of Organic Chemistry, 2003, 2003, 3985-3990.	2.4	9
81	Synthesis of Cryptophane-223-Type Derivatives with Dual Functionalization. Journal of Organic Chemistry, 2019, 84, 9127-9137.	3.2	9
82	Bimodal Detection of Proteins by ¹²⁹Xe NMR and Fluorescence Spectroscopy. ChemBioChem, 2019, 20, 1450-1457.	2.6	9
83	202 MHz 31P NMR performances. Journal of Molecular Structure, 1987, 162, 97-100.	3.6	8
84	New tools for proton nmr analysis: One-dimensional multiple relay magnetization transfers. Application to oligosaccharides. Tetrahedron Letters, 1987, 28, 3331-3334.	1.4	8
85	Study of slow molecular motions in solution using off-resonance irradiation in homonuclear NMR. Molecular Physics, 1995, 86, 1049-1058.	1.7	8
86	Synthesis and NMR study of a heptasaccharide, epitope of the stage-specific embryonic antigen-1 (SSEA-1). Carbohydrate Research, 2000, 324, 231-241.	2.3	8
87	Role of the Methoxy Groups in Cryptophanes for Complexation of Xenon: Conformational Selection Evidence from ¹²⁹Xeâ€¹H NMR SPINOE Experiments. ChemPhysChem, 2017, 18, 1561-1568.	2.1	8
88	Experimental and Theoretical Study of the Complexation of Cesium and Thallium Cations by a Water-Soluble Cryptophane. ChemistrySelect, 2017, 2, 5292-5300.	1.5	8
89	Folding of a Î²-cyclodextrin monosubstituted at its secondary face, revealed by NMR studies of local structural variations. Tetrahedron: Asymmetry, 2000, 11, 2463-2469.	1.8	7
90	Enhancing NMR of Nonrelaxing Species Using a Controlled Flow Motion and a Miniaturized Circuit. Analytical Chemistry, 2017, 89, 2995-3000.	6.5	7

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91	Inductive Coupling and Flow for Increased NMR Sensitivity. Analytical Chemistry, 2018, 90, 11169-11173.	6.5	7
92	Study of syn and anti Xenon-Cryptophanes Complexes Decorated with Aromatic Amine Groups: Chemical Platforms for Accessing New Cryptophanes. Journal of Organic Chemistry, 2022, 87, 2912-2920.	3.2	7
93	202 MHz 31P NMR performances Part VI. The case of the unsymmetrical cyclophosphazenic BINO structure, N3P3Cl5[HNî—¸(CH2)3î—¸N(CH3)]Cl5P3N3. Journal of Molecular Structure, 1988, 176, 285-294.	3.6	6
94	Fast mixing device inside a nuclear magnetic resonance magnet: A tool for observing early steps in protein folding. Review of Scientific Instruments, 2000, 71, 2180-2183.	1.3	6
95	Study of the Hydrophobic Cavity of Î²-Cryptogein through Laser-Polarized Xenon NMR Spectroscopy. ChemBioChem, 2006, 7, 59-64.	2.6	6
96	Pre-nucleation cluster formation upon ethyl acetate addition to an aqueous solution of an anionic hydrotrope. Journal of Molecular Liquids, 2020, 310, 113240.	4.9	6
97	The Shortest Route to Chiral Ditosylmethylamine. Angewandte Chemie - International Edition, 2002, 41, 497-498.	13.8	5
98	A Straightforward Access to Cyclotriveratrylene Analogues with C₁ Symmetry: Toward the Synthesis of Monofunctionalizable Cryptophanes. European Journal of Organic Chemistry, 2017, 2017, 7091-7100.	2.4	5
99	Cucurbit[5]uril derivatives as oxygen carriers. Supramolecular Chemistry, 2019, 31, 668-675.	1.2	5
100	¹²⁹Xe ultra-fast Z spectroscopy enables micromolar detection of biosensors on a 1â€‰T benchtop spectrometer. Magnetic Resonance, 2021, 2, 409-420.	1.9	5
101	202 MHz 31P NMR performances. Journal of Molecular Structure, 1988, 172, 345-353.	3.6	4
102	Investigation of inclusion phenomena in cyclodextrin derivatives by ultra-high resolution NMR. Supramolecular Chemistry, 1993, 2, 225-231.	1.2	4
103	Apports des champs rf hors rÃ©sonance aux Ã©tudes structurales et dynamiques en solution par RMN. Journal De Chimie Physique Et De Physico-Chimie Biologique, 1996, 93, 403-426.	0.2	4
104	Comparison of the solution structures of a DNA dodecamer using NOE and residual dipolar coupling data. Comptes Rendus Chimie, 2004, 7, 259-263.	0.5	3
105	Effects on 1H and 129Xe NMR spectra of large magnetization created by dissolved laser-polarized xenon. Comptes Rendus Chimie, 2008, 11, 553-559.	0.5	3
106	Direct determination of the heteronuclear T1/T2 ratio by off-resonance steady-state magnetization measurement: Investigation of the possible application to fast exchange characterization of 15N-labeled proteins. Journal of Biomolecular NMR, 1999, 15, 295-307.	2.8	2
107	Chapter 14. Biosensing and Study of Biological Cells using Hyperpolarized 129Xe. New Developments in NMR, 2015, , 261-271.	0.1	2
108	First Use of a Mineral Liquid Crystal for Measurement of Residual Dipolar Couplings of a Nonlabeled Biomolecule We would like to thank Dr. Patrick Davidson for helpful discussions, StÃ©phane Grolleau for TGA (thermogravimetric analysis) measurements, and Prof. Pierre SinaÃ¿ and Dr. Yongmin Zhang for the gift of the pentasaccharide. Financial support from the CNRS, the Ministry of Education (PhD) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 acknowledged.. Angewandte Chemie - International Edition, 2001, 40, 373-376.	13.8	2

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109	Dissolution of laser-polarized xenon in benzene. Magnetic Resonance Imaging, 2005, 23, 315-316.	1.8	0
110	Unsaturated cryptophanes: Toward dual PHIP/hyperpolarised xenon sensors. Magnetic Resonance in Chemistry, 2018, 56, 672-678.	1.9	0