Michael R Tarbutt

List of Publications by Year
in descending order

95 papers	4,333 citations	136950 32 h-index	110387 64 g-index
97 all docs	97 docs citations	97 times ranked	1797 citing authors

#	Article	IF	Citations
1	Inner-shell excitation in the YbF molecule and its impact on laser cooling. Journal of Molecular Spectroscopy, 2022, 386, 111625.	1.2	8
2	Measuring the stability of fundamental constants with a network of clocks. EPJ Quantum Technology, 2022, 9, .	6.3	11
3	From Hot Beams to Trapped Ultracold Molecules: Motivations, Methods andÂFuture Directions. , 2021, , 491-516.		0
4	General approach to state-dependent optical-tweezer traps for polar molecules. Physical Review Research, 2021, 3, .	3.6	4
5	Collisions between Ultracold Molecules and Atoms in a Magnetic Trap. Physical Review Letters, 2021, 126, 153401.	7.8	31
6	An ultracold molecular beam for testing fundamental physics. Quantum Science and Technology, 2021, 6, 044005.	5.8	18
7	Collisions in a dual-species magneto-optical trap of molecules and atoms. New Journal of Physics, 2021, 23, 075004.	2.9	7
8	Methods for measuring the electronâ€™s electric dipole moment using ultracold YbF molecules. Quantum Science and Technology, 2021, 6, 014006.	5.8	24
9	Ultracold polar molecules as qudits. New Journal of Physics, 2020, 22, 013027.	2.9	84
10	Enhancing Dipolar Interactions between Molecules Using State-Dependent Optical Tweezer Traps. Physical Review Letters, 2020, 125, 243201.	7.8	12
11	Robust entangling gate for polar molecules using magnetic and microwave fields. Physical Review A, 2020, 101, .	2.5	47
12	Long Rotational Coherence Times of Molecules in a Magnetic Trap. Physical Review Letters, 2020, 124, 063001.	7.8	28
13	New techniques for a measurement of the electronâ€™s electric dipole moment. New Journal of Physics, 2020, 22, 053031.	2.9	22
14	Sideband cooling of molecules in optical traps. Physical Review Research, 2020, 2, .	3.6	30
15	Deep Laser Cooling and Efficient Magnetic Compression of Molecules. Physical Review Letters, 2019, 123, 033202.	7.8	58
16	A new experiment to test parity symmetry in cold chiral molecules using vibrational spectroscopy. Quantum Electronics, 2019, 49, 288-292.	1.0	31
17	Ultracold molecules for quantum simulation: rotational coherences in CaF and RbCs. Quantum Science and Technology, 2019, 4, 014010.	5.8	96
18	Microwave trap for atoms and molecules. Physical Review Research, 2019, 1, .	3.6	11

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19	Blue-Detuned Magneto-Optical Trap. Physical Review Letters, 2018, 120, 083201.	7.8	23
20	A buffer gas beam source for short, intense and slow molecular pulses. Journal of Modern Optics, 2018, 65, 648-656.	1.3	40
21	Magnetic Trapping and Coherent Control of Laser-Cooled Molecules. Physical Review Letters, 2018, 120, 163201.	7.8	91
22	Laser Cooled YbF Molecules for Measuring the Electronâ€™s Electric Dipole Moment. Physical Review Letters, 2018, 120, 123201.	7.8	146
23	Laser cooling of molecules. Contemporary Physics, 2018, 59, 356-376.	1.8	68
24	Laser cooling and magneto-optical trapping of molecules analyzed using optical Bloch equations and the Fokker-Planck-Kramers equation. Physical Review A, 2018, 98, .	2.5	22
25	Characteristics of unconventional Rb magneto-optical traps. Physical Review A, 2018, 98, .	2.5	2
26	Characterising molecules for fundamental physics: an accurate spectroscopic model of methyltrioxorhenium derived from new infrared and millimetre-wave measurements. Physical Chemistry Chemical Physics, 2017, 19, 4576-4587.	2.8	16
27	The [557]-X2Î£+ and [561]-X2Î£+ bands of ytterbium fluoride, 174YbF. Journal of Molecular Spectroscopy, 2017, 338, 81-90.	1.2	20
28	An intense, cold, velocity-controlled molecular beam by frequency-chirped laser slowing. New Journal of Physics, 2017, 19, 022001.	2.9	58
29	High-resolution mid-infrared spectroscopy of buffer-gas-cooled methyltrioxorhenium molecules. New Journal of Physics, 2017, 19, 053006.	2.9	15
30	Molecules cooled below the Doppler limit. Nature Physics, 2017, 13, 1173-1176.	16.7	268
31	Characteristics of a magneto-optical trap of molecules. New Journal of Physics, 2017, 19, 113035.	2.9	54
32	A versatile dual-species Zeeman slower for caesium and ytterbium. Review of Scientific Instruments, 2016, 87, 043109.	1.3	18
33	Production and characterization of a dual species magneto-optical trap of cesium and ytterbium. Review of Scientific Instruments, 2016, 87, 023105.	1.3	27
34	Direct loading of a large Yb MOT on the ${}^{1}{{m{S}}}_{0};o {}^{3}{{m{P}}}_{1}$ transition. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 145006.	1.5	21
35	Principles and Design of a Zeeman-Sisyphus Decelerator for Molecular Beams. ChemPhysChem, 2016, 17, 3609-3623.	2.1	27
36	Submillikelvin Dipolar Molecules in a Radio-Frequency Magneto-Optical Trap. Physical Review Letters, 2016, 116, 063004.	7.8	141

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37	Three-dimensional Doppler, polarization-gradient, and magneto-optical forces for atoms and molecules with dark states. New Journal of Physics, 2016, 18, 123017.	2.9	50
38	Modeling magneto-optical trapping of CaF molecules. Physical Review A, 2015, 92, .	2.5	47
39	Modeling sympathetic cooling of molecules by ultracold atoms. Physical Review A, 2015, 92, .	2.5	47
40	A high quality, efficiently coupled microwave cavity for trapping cold molecules. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 045001.	1.5	12
41	Magneto-optical trapping forces for atoms and molecules with complex level structures. New Journal of Physics, 2015, 17, 015007.	2.9	69
42	Measurements of the Zeeman effect in the A2Î and B2Î£+ states of calcium fluoride. Journal of Molecular Spectroscopy, 2015, 317, 1-9.	1.2	9
43	Vibrational branching ratios and hyperfine structure of 11BH and its suitability for laser cooling. Frontiers in Physics, 2014, 2, .	2.1	25
44	MEASUREMENT OF THE LOWEST MILLIMETER-WAVE TRANSITION FREQUENCY OF THE CH RADICAL. Astrophysical Journal, 2014, 780, 71.	4.5	12
45	Stochastic multi-channel lock-in detection. New Journal of Physics, 2014, 16, 013005.	2.9	4
46	Laser cooling and slowing of CaF molecules. Physical Review A, 2014, 89, .	2.5	238
47	Radiative branching ratios for excited states of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si18.gif" overflow="scroll"><mml:mrow><mml:msup><mml:mrow [illegible] YbF: Application to laser cooling. [illegible]	1.2	27
48	Microwave spectroscopy of <mml:math altimg="si54.gif" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www.elsevier.com/x	1.2	10
49	Design for a fountain of YbF molecules to measure the electron's electric dipole moment. New Journal of Physics, 2013, 15, 053034.	2.9	91
50	Characterization of a cryogenic beam source for atoms and molecules. Physical Chemistry Chemical Physics, 2013, 15, 12299.	2.8	25
51	Time reversal symmetry violation in the YbF molecule. Hyperfine Interactions, 2013, 214, 119-126.	0.5	2
52	A search for varying fundamental constants using hertz-level frequency measurements of cold CH molecules. Nature Communications, 2013, 4, 2600.	12.8	77
53	Time reversal symmetry violation in the YbF molecule. , 2013, , 119-126.		0
54	Measurement of the electron's electric dipole moment using YbF molecules: methods and data analysis. New Journal of Physics, 2012, 14, 103051.	2.9	105

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55	Traveling-wave deceleration of heavy polar molecules in low-field-seeking states. Physical Review A, 2012, 86, .	2.5	29
56	Franckâ€“Condon factors and radiative lifetime of the A2Î1/2â€“X2Î£+ transition of ytterbium monofluoride, YbF. Physical Chemistry Chemical Physics, 2011, 13, 19013.	2.8	31
57	Stark deceleration of CaF molecules in strong- and weak-field seeking states. Physical Chemistry Chemical Physics, 2011, 13, 18991.	2.8	19
58	Improved measurement of the shape of the electron. Nature, 2011, 473, 493-496.	27.8	584
59	Prospects for the measurement of the electron electric dipole moment using YbF. Physics Procedia, 2011, 17, 175-180.	1.2	4
60	Prospects for sympathetic cooling of molecules in electrostatic, ac and microwave traps. European Physical Journal D, 2011, 65, 141-149.	1.3	29
61	Diffusion, thermalization, and optical pumping of YbF molecules in a cold buffer-gas cell. Physical Review A, 2011, 83, .	2.5	36
62	Nonadiabatic transitions in a Stark decelerator. Physical Review A, 2010, 81, .	2.5	28
63	Transport of polar molecules by an alternating-gradient guide. Physical Review A, 2009, 80, .	2.5	14
64	Response to â€œComment on â€˜A robust floating nanoammeterâ€™â€•[Rev. Sci. Instrum. 80, 057101 (2009)]. Review of Scientific Instruments, 2009, 80, 057102.	1.3	0
65	Stark deceleration of lithium hydride molecules. New Journal of Physics, 2009, 11, 055038.	2.9	27
66	Doppler-free laser spectroscopy of buffer-gas-cooled molecular radicals. New Journal of Physics, 2009, 11, 123026.	2.9	22
67	Prospects for measuring the electric dipole moment of the electron using electrically trapped polar molecules. Faraday Discussions, 2009, 142, 37.	3.2	61
68	Preparation and Manipulation of Molecules for Fundamental Physics Tests. , 2009, , .		0
69	Surface-induced heating of cold polar molecules. Physical Review A, 2008, 78, .	2.5	49
70	Anticipated X-ray and VUV spectroscopic data from ITERwith appropriate diagnostic instrumentation. Canadian Journal of Physics, 2008, 86, 277-284.	1.1	47
71	Nonlinear dynamics in an alternating gradient guide for neutral particles. New Journal of Physics, 2008, 10, 073011.	2.9	14
72	Lifetime of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>A</mml:mi><mml:mrow><mml:mo>(</mml:mo><mml:msup><mml:mi>v</mml:mi><mml:mo>â and Franck-Condon factor of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"		

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73	A robust floating nanoammeter. Review of Scientific Instruments, 2008, 79, 126102.	1.3	10
74	Pulsed beams as field probes for precision measurement. Physical Review A, 2007, 76, .	2.5	10
75	A supersonic beam of cold lithium hydride molecules. Journal of Chemical Physics, 2007, 126, 124314.	3.0	15
76	Probing the Electron EDM with Cold Molecules. AIP Conference Proceedings, 2006, , .	0.4	12
77	Alternating gradient focusing and deceleration of polar molecules. Journal of Physics B: Atomic, Molecular and Optical Physics, 2006, 39, R263-R291.	1.5	64
78	TOWARDS A NEW MEASUREMENT OF THE ELECTRON'S ELECTRIC DIPOLE MOMENT. , 2005, , .		1
79	Stark shift of the A2Î1â^•2 state in YbF174. Journal of Chemical Physics, 2005, 123, 231101.	3.0	8
80	Slowing Heavy, Ground-State Molecules using an Alternating Gradient Decelerator. Physical Review Letters, 2004, 92, 173002.	7.8	163
81	Versatile high resolution crystal spectrometer with x-ray charge coupled device detector. Review of Scientific Instruments, 2003, 74, 2388-2408.	1.3	27
82	Measurement of the Electron Electric Dipole Moment Using YbF Molecules. Physical Review Letters, 2002, 89, 023003.	7.8	359
83	A jet beam source of cold YbF radicals. Journal of Physics B: Atomic, Molecular and Optical Physics, 2002, 35, 5013-5022.	1.5	44
84	Measurement of the ground-state Lamb shift of hydrogen-like Ti21+. Journal of Physics B: Atomic, Molecular and Optical Physics, 2002, 35, 1467-1478.	1.5	21
85	Ionization balance in EBIT and tokamak plasmas. Review of Scientific Instruments, 2001, 72, 1250-1255.	1.3	8
86	Wavelength measurements of the satellite transitions to then= 2 resonance lines of helium-like argon. Journal of Physics B: Atomic, Molecular and Optical Physics, 2001, 34, 3979-3991.	1.5	33
87	Accurate Measurements of Visible M1 Transitions of Titanium-like Ions using an Electron Beam Ion Trap. Physica Scripta, 2001, T92, 144-148.	2.5	2
88	Measurement of the 1s2p 3P0 - 3P1 Fine Structure Interval in Helium-Like Magnesium. Lecture Notes in Physics, 2001, , 679-687.	0.7	0
89	Precision Lamb shift measurement in hydrogenic nitrogen by fast beam laser spectroscopy. , 2000, 127, 329-332.		1
90	Title is missing!. , 2000, 127, 323-328.		4

#	Article	IF	Citations
91	Title is missing!. , 2000, 127, 333-337.		1
92	Injection of various metallic elements into an electron beam ion trap: Techniques needed for systematic investigations of isoelectronic sequences. Review of Scientific Instruments, 2000, 71, 684-686.	1.3	14
93	High energy operation of the Tokyo-electron beam ion trap/present status. Review of Scientific Instruments, 2000, 71, 687-689.	1.3	4
94	Precision Measurement of the1s2pP32â^ˆ'P13Fine Structure Interval in Heliumlike Fluorine. Physical Review Letters, 1999, 82, 4200-4203.	7.8	44
95	Measurement of the1s2p3P0â€"3P1fine-structure interval in heliumlike magnesium. Physical Review A, 1999, 61, .	2.5	19