

Markus Arndt

List of Publications by Year in descending order

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166
papers

7,630
citations

61945

43
h-index

54882

84
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172
all docs

172
docs citations

172
times ranked

3743
citing authors

#	ARTICLE	IF	CITATIONS
1	A roadmap for universal high-mass matter-wave interferometry. <i>AVS Quantum Science</i> , 2022, 4, 020502.	1.8	7
2	Otto Stern's Legacy in Quantum Optics: Matter Waves and Deflectometry. , 2021, , 547-573.		0
3	The morphology of doubly-clamped graphene nanoribbons. <i>2D Materials</i> , 2021, 8, 025035.	2.0	1
4	Kapitza-Dirac Blockade: A Universal Tool for the Deterministic Preparation of Non-Gaussian Oscillator States. <i>Physical Review Letters</i> , 2021, 126, 253601.	2.9	5
5	Interferometric Tests of Wave-Function Collapse. <i>Fundamental Theories of Physics</i> , 2021, , 385-399.	0.1	1
6	High finesse microcavities in the optical telecom O-band. <i>Applied Physics Letters</i> , 2021, 119, 221112.	1.5	7
7	Single-, double-, and triple-slit diffraction of molecular matter waves. <i>American Journal of Physics</i> , 2021, 89, 1132-1138.	0.3	2
8	Bragg Diffraction of Large Organic Molecules. <i>Physical Review Letters</i> , 2020, 125, 033604.	2.9	13
9	Quantum-Assisted Measurement of Atomic Diamagnetism. <i>Physical Review X</i> , 2020, 10, .	2.8	5
10	Diffraction of 80 eV hydrogen through suspended graphene. <i>Journal of Physics: Conference Series</i> , 2020, 1412, 202036.	0.3	0
11	Quantum-assisted diamagnetic deflection of molecules. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 14036-14041.	1.3	5
12	Matter-wave interference of a native polypeptide. <i>Nature Communications</i> , 2020, 11, 1447.	5.8	23
13	Coriolis compensation via gravity in a matter-wave interferometer. <i>New Journal of Physics</i> , 2020, 22, 033013.	1.2	5
14	Matter-wave interference and deflection of tripeptides decorated with fluorinated alkyl chains. <i>Journal of Mass Spectrometry</i> , 2020, 55, e4514.	0.7	7
15	A fiber-based beam profiler for high-power laser beams in confined spaces and ultra-high vacuum. <i>Optics Express</i> , 2020, 28, 6164.	1.7	2
16	Coherent diffraction of hydrogen through the 246 pm lattice of graphene. <i>New Journal of Physics</i> , 2019, 21, 033004.	1.2	15
17	Quantum superposition of molecules beyond 25 kDa. <i>Nature Physics</i> , 2019, 15, 1242-1245.	6.5	170
18	Silicon microcavity arrays with open access and a finesse of half a million. <i>Light: Science and Applications</i> , 2019, 8, 37.	7.7	40

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19	Concepts for long-baseline high-mass matter-wave interferometry. <i>Physica Scripta</i> , 2019, 94, 034001.	1.2	7
20	Neutralization of insulin by photocleavage under high vacuum. <i>Chemical Communications</i> , 2019, 55, 12507-12510.	2.2	5
21	Improved accuracy fullerene polarizability measurements in a long-baseline matter-wave interferometer. <i>Physical Review Research</i> , 2019, 1, .	1.3	9
22	New Avenues for Matter-Wave-Enhanced Spectroscopy. , 2018, , 21-34.		1
23	Isotope-selective high-order interferometry with large organic molecules in free fall. <i>New Journal of Physics</i> , 2018, 20, 033016.	1.2	11
24	Pushing the mass limit for intact launch and photoionization of large neutral biopolymers. <i>Communications Chemistry</i> , 2018, 1, .	2.0	10
25	Probing macroscopic quantum superpositions with nanorotors. <i>New Journal of Physics</i> , 2018, 20, 122001.	1.2	66
26	Conformer Selection by Matter-Wave Interference. <i>Physical Review Letters</i> , 2018, 121, 173002.	2.9	8
27	A Quantum Ruler for Magnetic Deflectometry. <i>Entropy</i> , 2018, 20, 516.	1.1	7
28	Tailored photocleavable peptides: fragmentation and neutralization pathways in high vacuum. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 11412-11417.	1.3	9
29	Quanteninterferenzexperimente für die Vermessung von Vitaminen in der Gasphase. <i>Angewandte Chemie</i> , 2017, 129, 11088-11093.	1.6	0
30	Long-pulse laser launch and ionization of tailored large neutral silver nanoparticles with atomic mass assignment. <i>Nanoscale</i> , 2017, 9, 9175-9180.	2.8	2
31	Quantum-Assisted Metrology of Neutral Vitamins in the Gas Phase. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 10947-10951.	7.2	22
32	In search of multipath interference using large molecules. <i>Science Advances</i> , 2017, 3, e1602478.	4.7	26
33	Tailoring the volatility and stability of oligopeptides. <i>Journal of Mass Spectrometry</i> , 2017, 52, 550-556.	0.7	11
34	On the role of the electric dipole moment in the diffraction of biomolecules at nanomechanical gratings. <i>Fortschritte Der Physik</i> , 2017, 65, 1600025.	1.5	7
35	Optically driven ultra-stable nanomechanical rotor. <i>Nature Communications</i> , 2017, 8, 1670.	5.8	83
36	New avenues for matter-wave-enhanced spectroscopy. <i>Applied Physics B: Lasers and Optics</i> , 2017, 123, 3.	1.1	5

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37	Nanoparticle detection in an open-access silicon microcavity. <i>Applied Physics Letters</i> , 2017, 111, .	1.5	18
38	Full rotational control of levitated silicon nanorods. <i>Optica</i> , 2017, 4, 356.	4.8	105
39	Selective photodissociation of tailored molecular tags as a tool for quantum optics. <i>Beilstein Journal of Nanotechnology</i> , 2017, 8, 325-333.	1.5	6
40	Perspectives for quantum interference with biomolecules and biomolecular clusters. <i>Physica Scripta</i> , 2016, 91, 063007.	1.2	14
41	Quantum technology: from research to application. <i>Applied Physics B: Lasers and Optics</i> , 2016, 122, 1.	1.1	42
42	Cooling and manipulation of nanoparticles in high vacuum. <i>Proceedings of SPIE</i> , 2016, , .	0.8	6
43	Rotranslational cavity cooling of dielectric rods and disks. <i>Physical Review A</i> , 2016, 94, .	1.0	48
44	Stability of high-mass molecular libraries: the role of the oligoporphyrin core. <i>Journal of Mass Spectrometry</i> , 2015, 50, 235-239.	0.7	8
45	A Green's function approach to modeling molecular diffraction in the limit of ultra-thin gratings. <i>Annalen Der Physik</i> , 2015, 527, 580-591.	0.9	20
46	Simulated Interactive Research Experiments as Educational Tools for Advanced Science. <i>Scientific Reports</i> , 2015, 5, 14108.	1.6	8
47	Coherence in the presence of absorption and heating in a molecule interferometer. <i>Nature Communications</i> , 2015, 6, 7336.	5.8	16
48	Laser-Induced Acoustic Desorption of Natural and Functionalized Biochromophores. <i>Analytical Chemistry</i> , 2015, 87, 5614-5619.	3.2	21
49	Toward Two-Dimensional All-Carbon Heterostructures via Ion Beam Patterning of Single-Layer Graphene. <i>Nano Letters</i> , 2015, 15, 5944-5949.	4.5	85
50	Refined model for Talbot-Lau matter-wave optics with pulsed photodepletion gratings. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2015, 32, 114.	0.9	6
51	An atomically thin matter-wave beamsplitter. <i>Nature Nanotechnology</i> , 2015, 10, 845-848.	15.6	41
52	Cavity-Assisted Manipulation of Freely Rotating Silicon Nanorods in High Vacuum. <i>Nano Letters</i> , 2015, 15, 5604-5608.	4.5	62
53	Interference of atomic clocks. <i>Science</i> , 2015, 349, 1168-1169.	6.0	6
54	Testing macroscopic realism through high-mass interferometry. <i>Physical Review A</i> , 2014, 90, .	1.0	8

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55	Photofragmentation Beam Splitters for Matter-Wave Interferometry. <i>Physical Review Letters</i> , 2014, 113, 233001.	2.9	24
56	Macroscopic Matter Wave Interferometry. Springer Theses, 2014, , .	0.0	21
57	Testing the limits of quantum mechanical superpositions. <i>Nature Physics</i> , 2014, 10, 271-277.	6.5	283
58	Synthesis of Highly Fluoroalkylâ€Functionalized Oligoporphyrin Systems. <i>European Journal of Organic Chemistry</i> , 2014, 2014, 6884-6895.	1.2	9
59	Absolute Absorption Cross Sections from Photon Recoil in a Matter-Wave Interferometer. <i>Physical Review Letters</i> , 2014, 112, 250402.	2.9	25
60	De Broglieâ€™s meter stick: Making measurements with matter waves. <i>Physics Today</i> , 2014, 67, 30-36.	0.3	15
61	Quantum coherent propagation of complex molecules through the frustule of the alga <i>Amphipleura pellucida</i> . <i>New Journal of Physics</i> , 2013, 15, 083004.	1.2	8
62	Experimental methods of molecular matter-wave optics. <i>Reports on Progress in Physics</i> , 2013, 76, 086402.	8.1	50
63	Matterâ€™wave interference of particles selected from a molecular library with masses exceeding 10â€000 amu. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 14696.	1.3	197
64	A universal matter-wave interferometer with optical ionization gratings in the time domain. <i>Nature Physics</i> , 2013, 9, 144-148.	6.5	88
65	Single-Photon Ionization of Organic Molecules Beyond 10ÂkDa. <i>Journal of the American Society for Mass Spectrometry</i> , 2013, 24, 602-608.	1.2	10
66	Cavity cooling of free silicon nanoparticles in high vacuum. <i>Nature Communications</i> , 2013, 4, 2743.	5.8	117
67	Free-Falling Interferometry. <i>Physics Magazine</i> , 2013, 6, .	0.1	1
68	Focus on modern frontiers of matter wave optics and interferometry. <i>New Journal of Physics</i> , 2012, 14, 125006.	1.2	26
69	Colloquium: Quantum interference of clusters and molecules. <i>Reviews of Modern Physics</i> , 2012, 84, 157-173.	16.4	288
70	Real-time single-molecule imaging of quantum interference. <i>Nature Nanotechnology</i> , 2012, 7, 297-300.	15.6	115
71	Sensitivity of a superconducting nanowire detector for single ions at low energy. <i>Nanotechnology</i> , 2012, 23, 065501.	1.3	16
72	New Prospects for de Broglie Interferometry. <i>Foundations of Physics</i> , 2012, 42, 98-110.	0.6	23

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73	Quantum interference of large organic molecules. Nature Communications, 2011, 2, 263.	5.8	285
74	Cavity stabilization using the weak intrinsic birefringence of dielectric mirrors. Optics Letters, 2011, 36, 3720.	1.7	12
75	Embracing Quantum Metrology with Wide Arms. Physics Magazine, 2011, 4, .	0.1	1
76	Coherence from spontaneity. Nature Physics, 2011, 7, 375-376.	6.5	2
77	Fundamental Frontiers of Quantum Science and Technology. Procedia Computer Science, 2011, 7, 77-80.	1.2	4
78	Highly Fluorous Porphyrins as Model Compounds for Molecule Interferometry. European Journal of Organic Chemistry, 2011, 2011, n/a-n/a.	1.2	11
79	Concept of an ionizing time-domain matter-wave interferometer. New Journal of Physics, 2011, 13, 075002.	1.2	38
80	Testing spontaneous localization theories with matter-wave interferometry. Physical Review A, 2011, 83, .	1.0	82
81	Matter wave interferometry: Exploring the importance of the internal molecular properties. , 2011, , .		0
82	Electric moments in molecule interferometry. New Journal of Physics, 2011, 13, 043033.	1.2	27
83	Influence of conformational molecular dynamics on matter wave interferometry. Physical Review A, 2010, 81, .	1.0	33
84	Master equation for the motion of a polarizable particle in a multimode cavity. New Journal of Physics, 2010, 12, 083003.	1.2	30
85	Immobilization of Zinc Porphyrin Complexes on Pyridine-Functionalized Glass Surfaces. Langmuir, 2010, 26, 10822-10826.	1.6	13
86	Quantum interference distinguishes between constitutional isomers. Chemical Communications, 2010, 46, 4145.	2.2	26
87	Wave and Particle in Molecular Interference Lithography. Physical Review Letters, 2009, 103, 263601.	2.9	52
88	Molecular lithography - A quantum optical approach. , 2009, , .		0
89	Theory and experimental verification of Kapitzaâ€™Diracâ€™Talbotâ€™Lau interferometry. New Journal of Physics, 2009, 11, 043032.	1.2	74
90	Mesoscopic Quantum Phenomena. , 2009, , 379-384.		0

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91	GAUGE: the GrAnd Unification and Gravity Explorer. <i>Experimental Astronomy</i> , 2009, 23, 549-572.	1.6	15
92	Matter wave explorer of gravity (MWXG). <i>Experimental Astronomy</i> , 2009, 23, 611-649.	1.6	30
93	How to extend quantum experiments. <i>Fortschritte Der Physik</i> , 2009, 57, 1153-1162.	1.5	7
94	Realization of optical carpets in the Talbot and Talbot-Lau configurations. <i>Optics Express</i> , 2009, 17, 20966.	1.7	127
95	VUV and VUV Ionization of Organic Molecules, Clusters, and Complexes. <i>Journal of Physical Chemistry A</i> , 2009, 113, 9952-9957.	1.1	24
96	A superconducting NbN detector for neutral nanoparticles. <i>Nanotechnology</i> , 2009, 20, 455501.	1.3	12
97	Quantum physics meets biology. <i>HFSP Journal</i> , 2009, 3, 386-400.	2.5	149
98	Semi-classical Models. , 2009, , 697-701.		0
99	Gas-phase formation of large neutral alkaline-earth metal tryptophan complexes. <i>Journal of the American Society for Mass Spectrometry</i> , 2008, 19, 1021-1026.	1.2	22
100	Matter-Wave Metrology as a Complementary Tool for Mass Spectrometry. <i>Angewandte Chemie - International Edition</i> , 2008, 47, 6195-6198.	7.2	45
101	Slow beams of massive molecules. <i>European Physical Journal D</i> , 2008, 46, 307-313.	0.6	37
102	On the prospects of interferometry and deflectometry for characterizing large molecules. <i>European Physical Journal: Special Topics</i> , 2008, 159, 1-9.	1.2	1
103	Absolute absorption spectroscopy based on molecule interferometry. <i>Physical Review A</i> , 2008, 78, .	1.0	18
104	A novel design for electric field deflectometry on extended molecular beams. <i>Measurement Science and Technology</i> , 2008, 19, 055801.	1.4	10
105	Gas phase sorting of fullerenes, polypeptides and carbon nanotubes. <i>Nanotechnology</i> , 2008, 19, 045502.	1.3	12
106	A novel type of matter-wave interferometer for molecules. , 2007, , .		0
107	Polarizability measurements of a molecule via a near-field matter-wave interferometer. <i>Physical Review A</i> , 2007, 76, .	1.0	69
108	Thermal and electrical properties of porphyrin derivatives and their relevance for molecule interferometry. <i>Journal of Chemical Physics</i> , 2007, 126, 164304.	1.2	17

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109	A Kapitzaâ€“Diracâ€“Talbotâ€“Lau interferometer for highly polarizable molecules. Nature Physics, 2007, 3, 711-715.	6.5	175
110	UV-VIS absorption spectroscopy of large molecules for applications in matter wave interferometry. Laser Physics, 2007, 17, 583-589.	0.6	9
111	Optical polarizabilities of large molecules measured in near-field interferometry. Applied Physics B: Lasers and Optics, 2007, 89, 469-473.	1.1	28
112	Cold Beams of Biomolecules for Quantum Optics. Acta Physica Hungarica A Heavy Ion Physics, 2006, 26, 87-94.	0.4	6
113	Exploration of gold nanoparticle beams for matter wave interferometry. Optics Communications, 2006, 264, 326-332.	1.0	25
114	Fluorescence of surface adsorbed dyes: investigation of a new detector for molecule interferometry. Journal of Physics: Conference Series, 2005, 19, 125-133.	0.3	1
115	A scalable optical detection scheme for matter wave interferometry. New Journal of Physics, 2005, 7, 224-224.	1.2	6
116	Probing the limits of the quantum world. Physics World, 2005, 18, 35-40.	0.0	45
117	Coherence in molecular nitrogen. Nature Physics, 2005, 1, 19-20.	6.5	2
118	Influence of molecular temperature on the coherence of fullerenes in a near-field interferometer. Physical Review A, 2005, 71, .	1.0	29
119	Interferometry with large molecules: exploration of coherence, decoherence and novel beam methods. Brazilian Journal of Physics, 2005, 35, .	0.7	9
120	Coherence and Decoherence Experiments with Fullerenes. , 2005, , 329-352.		0
121	Sublimation enthalpy of dye molecules measured using fluorescence. Journal of Chemical Physics, 2004, 121, 6935-6940.	1.2	11
122	Theory of decoherence in a matter wave Talbot-Lau interferometer. Physical Review A, 2004, 70, .	1.0	91
123	Decoherence of matter waves by thermal emission of radiation. Nature, 2004, 427, 711-714.	13.7	262
124	Heisenbergâ€™s Uncertainty and Matter Wave Interferometry with Large Molecules. , 2004, , 35-52.		0
125	Organic Molecules and Decoherence Experiments in a Molecule Interferometer. , 2004, , 1-10.		0
126	Quantum interference experiments with large molecules. American Journal of Physics, 2003, 71, 319-325.	0.3	190

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127	Collisional Decoherence Observed in Matter Wave Interferometry. Physical Review Letters, 2003, 90, 160401.	2.9	222
128	Decoherence in a Talbot-Lau interferometer: the influence of molecular scattering. Applied Physics B: Lasers and Optics, 2003, 77, 781-787.	1.1	66
129	Wave Nature of Biomolecules and Fluorofullerenes. Physical Review Letters, 2003, 91, 090408.	2.9	202
130	Decoherence studies using interferometry of massive molecules. , 2003, , .		0
131	Concepts for near-field interferometers with large molecules. Journal of Optics B: Quantum and Semiclassical Optics, 2003, 5, S82-S89.	1.4	59
132	Experimental verification of the Heisenberg uncertainty principle for fullerene molecules. Physical Review A, 2002, 65, .	1.0	56
133	Matter-Wave Interferometer for Large Molecules. Physical Review Letters, 2002, 88, 100404.	2.9	273
134	Interferometry with Macromolecules: Quantum Paradigms Tested in the Mesoscopic World. , 2002, , 333-350.		7
135	Diffraction of Complex Molecules by Structures Made of Light. Physical Review Letters, 2001, 87, 160401.	2.9	94
136	Freie Elektronen an sichtbarem Licht gebeugt: <i>Nach 70 Jahren wurde der Kapitza-Dirac-Effekt eindeutig nachgewiesen</i>. Physik Journal, 2001, 57, 20-20.	0.1	0
137	High contrast interference with C and C. Comptes Rendus Physique, 2001, 2, 581-585.	0.1	5
138	Magneto-optical effects with cold lithium atoms. Journal of Physics B: Atomic, Molecular and Optical Physics, 2001, 34, 2527-2536.	0.6	27
139	Experimental challenges in fullerene interferometry. Journal of Modern Optics, 2000, 47, 2811-2821.	0.6	39
140	Wo ist die Grenze der Quantenwelt?: Selbst heiÄye MolekÄ¼le aus 70 Atomen haben mitunter Welleneigenschaften. Physik Journal, 2000, 56, 69-71.	0.1	9
141	Coherence and decoherence in de Broglie interference of fullerenes. , 2000, , .		0
142	Wave-particle duality of C60 molecules. Nature, 1999, 401, 680-682.	13.7	1,003
143	Towards Coherent Matter Wave Optics with Macromolecules. , 1999, , 221-223.		2
144	Interferometry and Dissipative Optics with Atoms. Acta Physica Polonica A, 1998, 93, 197-209.	0.2	4

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145	Observation of a Zero-Energy Resonance in Cs-Cs Collisions. Physical Review Letters, 1997, 79, 625-628.	2.9	109
146	Dissipative atom optics. Journal of Modern Optics, 1997, 44, 1827-1836.	0.6	1
147	<title>Atom optics and interferometry with atomic mirrors</title>. , 1997, 2995, 174.		0
148	Atomic Wave Diffraction and Interference Using Temporal Slits. Physical Review Letters, 1996, 77, 4-7.	2.9	214
149	<title>Old and new spin physics with atoms in solid helium</title>. , 1996, , .		0
150	Atom optics in the time domain. Physical Review A, 1996, 53, 3369-3378.	1.0	44
151	Elementary Sisyphus process close to a dielectric surface. Physical Review A, 1996, 54, 4292-4298.	1.0	43
152	Spin physics in solid helium: Experimental results and applications. European Physical Journal B, 1995, 98, 359-362.	0.6	15
153	Pressure shift of atomic resonance lines in liquid and solid helium. European Physical Journal B, 1995, 98, 371-376.	0.6	44
154	Implantation and spectroscopy of metal atoms in solid helium. European Physical Journal B, 1995, 98, 377-381.	0.6	36
155	Multiple Time Scales in the Microwave Ionization of Rydberg Atoms. Physical Review Letters, 1995, 75, 3818-3821.	2.9	35
156	From coherent to noise-induced microwave ionization of Rydberg atoms. Physical Review A, 1995, 51, 4862-4876.	1.0	21
157	Long Electronic Spin Relaxation Times of Cs Atoms in Solid ^4He . Physical Review Letters, 1995, 74, 1359-1362.	2.9	53
158	The Hyperfine Structure of Cs Atoms in the b.c.c. Phase of Solid ^4He . Europhysics Letters, 1995, 30, 233-237.	0.7	17
159	Cavit�s atomiques. Annales De Physique, 1995, 20, 681-686.	0.2	0
160	Optical spectroscopy of atoms trapped in solid helium. Physical Review B, 1994, 49, 3645-3647.	1.1	89
161	Microwave ionization of Rb Rydberg atoms: Frequency dependence. Physical Review A, 1994, 49, 3831-3841.	1.0	6
162	Pressure shift and broadening of the resonance line of barium atoms in liquid helium. Physical Review B, 1994, 50, 6296-6302.	1.1	69

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163	Can paramagnetic atoms in superfluid helium be used to search for permanent electric dipole moments?. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 174, 298-303.	0.9	50
164	Experimental study of quantum and classical limits in microwave ionization of rubidium Rydberg atoms. Physical Review Letters, 1991, 67, 2435-2438.	2.9	89
165	Fluorescence methods for matter interferometry with nanosized objects. , 0, , .		0
166	Experimental challenges in fullerene interferometry. , 0, .		6