

# Markus Arndt

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

156  
papers

6,164  
citations

40  
h-index

75  
g-index

172  
ext. papers

6,937  
ext. citations

6.3  
avg, IF

5.65  
L-index

#	Paper	IF	Citations
156	Experimental Decoherence in Molecule Interferometry. <i>Fundamental Theories of Physics</i> , <b>2022</b> , 65-83	0.8	
155	A roadmap for universal high-mass matter-wave interferometry. <i>AVS Quantum Science</i> , <b>2022</b> , 4, 020502	10.3	1
154	Interferometric Tests of Wave-Function Collapse. <i>Fundamental Theories of Physics</i> , <b>2021</b> , 385-399	0.8	0
153	High finesse microcavities in the optical telecom O-band. <i>Applied Physics Letters</i> , <b>2021</b> , 119, 221112	3.4	3
152	Single-, double-, and triple-slit diffraction of molecular matter waves. <i>American Journal of Physics</i> , <b>2021</b> , 89, 1132-1138	0.7	
151	The morphology of doubly-clamped graphene nanoribbons. <i>2D Materials</i> , <b>2021</b> , 8, 025035	5.9	1
150	Kapitza-Dirac Blockade: A Universal Tool for the Deterministic Preparation of Non-Gaussian Oscillator States. <i>Physical Review Letters</i> , <b>2021</b> , 126, 253601	7.4	0
149	Otto Stern's Legacy in Quantum Optics: Matter Waves and Deflectometry <b>2021</b> , 547-573		
148	Diffraction of 80 eV hydrogen through suspended graphene. <i>Journal of Physics: Conference Series</i> , <b>2020</b> , 1412, 202036	0.3	
147	Quantum-assisted diamagnetic deflection of molecules. <i>Physical Chemistry Chemical Physics</i> , <b>2020</b> , 22, 14036-14041	3.6	3
146	Matter-wave interference of a native polypeptide. <i>Nature Communications</i> , <b>2020</b> , 11, 1447	17.4	14
145	Coriolis compensation via gravity in a matter-wave interferometer. <i>New Journal of Physics</i> , <b>2020</b> , 22, 033013	2.9	3
144	Matter-wave interference and deflection of tripeptides decorated with fluorinated alkyl chains. <i>Journal of Mass Spectrometry</i> , <b>2020</b> , 55, e4514	2.2	4
143	A fiber-based beam profiler for high-power laser beams in confined spaces and ultra-high vacuum. <i>Optics Express</i> , <b>2020</b> , 28, 6164-6171	3.3	1
142	Bragg Diffraction of Large Organic Molecules. <i>Physical Review Letters</i> , <b>2020</b> , 125, 033604	7.4	7
141	Quantum-Assisted Measurement of Atomic Diamagnetism. <i>Physical Review X</i> , <b>2020</b> , 10,	9.1	4
140	Quantum superposition of molecules beyond 25 kDa. <i>Nature Physics</i> , <b>2019</b> , 15, 1242-1245	16.2	73

139	Silicon microcavity arrays with open access and a finesse of half a million. <i>Light: Science and Applications</i> , <b>2019</b> , 8, 37	16.7	23
138	Concepts for long-baseline high-mass matter-wave interferometry. <i>Physica Scripta</i> , <b>2019</b> , 94, 034001	2.6	7
137	Coherent diffraction of hydrogen through the 246 pm lattice of graphene. <i>New Journal of Physics</i> , <b>2019</b> , 21, 033004	2.9	5
136	Improved accuracy fullerene polarizability measurements in a long-baseline matter-wave interferometer. <i>Physical Review Research</i> , <b>2019</b> , 1,	3.9	8
135	Neutralization of insulin by photocleavage under high vacuum. <i>Chemical Communications</i> , <b>2019</b> , 55, 12507812510	7.8	10
134	New Avenues for Matter-Wave-Enhanced Spectroscopy <b>2018</b> , 21-34		
133	Isotope-selective high-order interferometry with large organic molecules in free fall. <i>New Journal of Physics</i> , <b>2018</b> , 20, 033016	2.9	6
132	Tailored photocleavable peptides: fragmentation and neutralization pathways in high vacuum. <i>Physical Chemistry Chemical Physics</i> , <b>2018</b> , 20, 11412-11417	3.6	8
131	Pushing the mass limit for intact launch and photoionization of large neutral biopolymers. <i>Communications Chemistry</i> , <b>2018</b> , 1,	6.3	6
130	Probing macroscopic quantum superpositions with nanorotors. <i>New Journal of Physics</i> , <b>2018</b> , 20, 1220012.9	12.9	37
129	Conformer Selection by Matter-Wave Interference. <i>Physical Review Letters</i> , <b>2018</b> , 121, 173002	7.4	8
128	A Quantum Ruler for Magnetic Deflectometry. <i>Entropy</i> , <b>2018</b> , 20,	2.8	5
127	Quanteninterferenzexperimente für die Vermessung von Vitaminen in der Gasphase. <i>Angewandte Chemie</i> , <b>2017</b> , 129, 11088-11093	3.6	
126	Long-pulse laser launch and ionization of tailored large neutral silver nanoparticles with atomic mass assignment. <i>Nanoscale</i> , <b>2017</b> , 9, 9175-9180	7.7	1
125	Quantum-Assisted Metrology of Neutral Vitamins in the Gas Phase. <i>Angewandte Chemie - International Edition</i> , <b>2017</b> , 56, 10947-10951	16.4	20
124	Selective photodissociation of tailored molecular tags as a tool for quantum optics. <i>Beilstein Journal of Nanotechnology</i> , <b>2017</b> , 8, 325-333	3	3
123	In search of multipath interference using large molecules. <i>Science Advances</i> , <b>2017</b> , 3, e1602478	14.3	19
122	Tailoring the volatility and stability of oligopeptides. <i>Journal of Mass Spectrometry</i> , <b>2017</b> , 52, 550-556	2.2	9

121	On the role of the electric dipole moment in the diffraction of biomolecules at nanomechanical gratings. <i>Fortschritte Der Physik</i> , <b>2017</b> , 65, 1600025	5.7	5
120	Optically driven ultra-stable nanomechanical rotor. <i>Nature Communications</i> , <b>2017</b> , 8, 1670	17.4	60
119	New avenues for matter-wave-enhanced spectroscopy. <i>Applied Physics B: Lasers and Optics</i> , <b>2017</b> , 123, 3	1.9	5
118	Nanoparticle detection in an open-access silicon microcavity. <i>Applied Physics Letters</i> , <b>2017</b> , 111, 253107	3.4	15
117	Full rotational control of levitated silicon nanorods. <i>Optica</i> , <b>2017</b> , 4, 356	8.6	81
116	Rotranslational cavity cooling of dielectric rods and disks. <i>Physical Review A</i> , <b>2016</b> , 94,	2.6	40
115	Perspectives for quantum interference with biomolecules and biomolecular clusters. <i>Physica Scripta</i> , <b>2016</b> , 91, 063007	2.6	10
114	Quantum technology: from research to application. <i>Applied Physics B: Lasers and Optics</i> , <b>2016</b> , 122, 1	1.9	21
113	Cooling and manipulation of nanoparticles in high vacuum <b>2016</b> ,		4
112	Coherence in the presence of absorption and heating in a molecule interferometer. <i>Nature Communications</i> , <b>2015</b> , 6, 7336	17.4	15
111	Laser-induced acoustic desorption of natural and functionalized biochromophores. <i>Analytical Chemistry</i> , <b>2015</b> , 87, 5614-9	7.8	14
110	Toward Two-Dimensional All-Carbon Heterostructures via Ion Beam Patterning of Single-Layer Graphene. <i>Nano Letters</i> , <b>2015</b> , 15, 5944-9	11.5	73
109	Refined model for Talbot-Lau matter-wave optics with pulsed photodepletion gratings. <i>Journal of the Optical Society of America B: Optical Physics</i> , <b>2015</b> , 32, 114	1.7	6
108	An atomically thin matter-wave beamsplitter. <i>Nature Nanotechnology</i> , <b>2015</b> , 10, 845-8	28.7	36
107	Cavity-Assisted Manipulation of Freely Rotating Silicon Nanorods in High Vacuum. <i>Nano Letters</i> , <b>2015</b> , 15, 5604-8	11.5	53
106	QUANTUM MECHANICS. Interference of atomic clocks. <i>Science</i> , <b>2015</b> , 349, 1168-9	33.3	5
105	Stability of high-mass molecular libraries: the role of the oligoporphyrin core. <i>Journal of Mass Spectrometry</i> , <b>2015</b> , 50, 235-9	2.2	6
104	A Green's function approach to modeling molecular diffraction in the limit of ultra-thin gratings. <i>Annalen Der Physik</i> , <b>2015</b> , 527, 580-591	2.6	14

103	Simulated Interactive Research Experiments as Educational Tools for Advanced Science. <i>Scientific Reports</i> , <b>2015</b> , 5, 14108	4.9	7
102	Testing the limits of quantum mechanical superpositions. <i>Nature Physics</i> , <b>2014</b> , 10, 271-277	16.2	207
101	Synthesis of Highly Fluoroalkyl-Functionalized Oligoporphyrin Systems. <i>European Journal of Organic Chemistry</i> , <b>2014</b> , 2014, 6884-6895	3.2	8
100	Absolute absorption cross sections from photon recoil in a matter-wave interferometer. <i>Physical Review Letters</i> , <b>2014</b> , 112, 250402	7.4	23
99	De Broglie meter stick: Making measurements with matter waves. <i>Physics Today</i> , <b>2014</b> , 67, 30-36	0.9	15
98	Testing macroscopic realism through high-mass interferometry. <i>Physical Review A</i> , <b>2014</b> , 90,	2.6	7
97	Photofragmentation beam splitters for matter-wave interferometry. <i>Physical Review Letters</i> , <b>2014</b> , 113, 233001	7.4	19
96	Macroscopic Matter Wave Interferometry. <i>Springer Theses</i> , <b>2014</b> ,	0.1	19
95	Quantum coherent propagation of complex molecules through the frustule of the alga <i>Amphipleura pellucida</i> . <i>New Journal of Physics</i> , <b>2013</b> , 15, 083004	2.9	8
94	Experimental methods of molecular matter-wave optics. <i>Reports on Progress in Physics</i> , <b>2013</b> , 76, 086402	14.4	46
93	Matter-wave interference of particles selected from a molecular library with masses exceeding 10,000 amu. <i>Physical Chemistry Chemical Physics</i> , <b>2013</b> , 15, 14696-700	3.6	157
92	A universal matter-wave interferometer with optical ionization gratings in the time-domain. <i>Nature Physics</i> , <b>2013</b> , 9, 144-148	16.2	71
91	Single-photon ionization of organic molecules beyond 10 kDa. <i>Journal of the American Society for Mass Spectrometry</i> , <b>2013</b> , 24, 602-8	3.5	10
90	Cavity cooling of free silicon nanoparticles in high vacuum. <i>Nature Communications</i> , <b>2013</b> , 4, 2743	17.4	103
89	Superpositions of Chiral Molecules. <i>Physics Magazine</i> , <b>2013</b> , 6,	1.1	1
88	New Prospects for de Broglie Interferometry. <i>Foundations of Physics</i> , <b>2012</b> , 42, 98-110	1.2	19
87	Colloquium: Quantum interference of clusters and molecules. <i>Reviews of Modern Physics</i> , <b>2012</b> , 84, 157-173	17.5	239
86	Real-time single-molecule imaging of quantum interference. <i>Nature Nanotechnology</i> , <b>2012</b> , 7, 297-300	28.7	88

85	Sensitivity of a superconducting nanowire detector for single ions at low energy. <i>Nanotechnology</i> , <b>2012</b> , 23, 065501	3.4	12
84	Focus on modern frontiers of matter wave optics and interferometry. <i>New Journal of Physics</i> , <b>2012</b> , 14, 125006	2.9	18
83	Quantum interference of large organic molecules. <i>Nature Communications</i> , <b>2011</b> , 2, 263	17.4	228
82	Cavity stabilization using the weak intrinsic birefringence of dielectric mirrors. <i>Optics Letters</i> , <b>2011</b> , 36, 3720-2	3	9
81	Fundamental Frontiers of Quantum Science and Technology. <i>Procedia Computer Science</i> , <b>2011</b> , 7, 77-80	1.6	4
80	Highly Fluorous Porphyrins as Model Compounds for Molecule Interferometry. <i>European Journal of Organic Chemistry</i> , <b>2011</b> , 2011, n/a-n/a	3.2	4
79	Concept of an ionizing time-domain matter-wave interferometer. <i>New Journal of Physics</i> , <b>2011</b> , 13, 075002	3.2	31
78	Testing spontaneous localization theories with matter-wave interferometry. <i>Physical Review A</i> , <b>2011</b> , 83,	2.6	73
77	Electric moments in molecule interferometry. <i>New Journal of Physics</i> , <b>2011</b> , 13, 043033	2.9	23
76	Influence of conformational molecular dynamics on matter wave interferometry. <i>Physical Review A</i> , <b>2010</b> , 81,	2.6	27
75	Master equation for the motion of a polarizable particle in a multimode cavity. <i>New Journal of Physics</i> , <b>2010</b> , 12, 083003	2.9	23
74	Immobilization of zinc porphyrin complexes on pyridine-functionalized glass surfaces. <i>Langmuir</i> , <b>2010</b> , 26, 10822-6	4	13
73	Quantum interference distinguishes between constitutional isomers. <i>Chemical Communications</i> , <b>2010</b> , 46, 4145-7	5.8	24
72	Wave and particle in molecular interference lithography. <i>Physical Review Letters</i> , <b>2009</b> , 103, 263601	7.4	41
71	Theory and experimental verification of Kapitza-Dirac-Talbot-Lau interferometry. <i>New Journal of Physics</i> , <b>2009</b> , 11, 043032	2.9	65
70	Mesoscopic Quantum Phenomena <b>2009</b> , 379-384		
69	GAUGE: the GrAnd Unification and Gravity Explorer. <i>Experimental Astronomy</i> , <b>2009</b> , 23, 549-572	1.3	14
68	Matter wave explorer of gravity (MWXG). <i>Experimental Astronomy</i> , <b>2009</b> , 23, 611-649	1.3	24

67	How to extend quantum experiments. <i>Fortschritte Der Physik</i> , <b>2009</b> , 57, 1153-1162	5.7	5
66	Realization of optical carpets in the Talbot and Talbot-Lau configurations. <i>Optics Express</i> , <b>2009</b> , 17, 20966-74	6.74	106
65	UV and VUV ionization of organic molecules, clusters, and complexes. <i>Journal of Physical Chemistry A</i> , <b>2009</b> , 113, 9952-7	2.8	23
64	A superconducting NbN detector for neutral nanoparticles. <i>Nanotechnology</i> , <b>2009</b> , 20, 455501	3.4	8
63	Quantum physics meets biology. <i>HFSP Journal</i> , <b>2009</b> , 3, 386-400		118
62	Semi-classical Models <b>2009</b> , 697-701		
61	Absolute absorption spectroscopy based on molecule interferometry. <i>Physical Review A</i> , <b>2008</b> , 78,	2.6	14
60	A novel design for electric field deflectometry on extended molecular beams. <i>Measurement Science and Technology</i> , <b>2008</b> , 19, 055801	2	9
59	Gas phase sorting of fullerenes, polypeptides and carbon nanotubes. <i>Nanotechnology</i> , <b>2008</b> , 19, 045502	3.4	11
58	Gas-phase formation of large neutral alkaline-earth metal tryptophan complexes. <i>Journal of the American Society for Mass Spectrometry</i> , <b>2008</b> , 19, 1021-6	3.5	20
57	Matter-wave metrology as a complementary tool for mass spectrometry. <i>Angewandte Chemie - International Edition</i> , <b>2008</b> , 47, 6195-8	16.4	40
56	Materiewelleninterferometrie ergnzt die Massenspektrometrie. <i>Angewandte Chemie</i> , <b>2008</b> , 120, 6290-6393	3.3	4
55	Slow beams of massive molecules. <i>European Physical Journal D</i> , <b>2008</b> , 46, 307-313	1.3	33
54	On the prospects of interferometry and deflectometry for characterizing large molecules. <i>European Physical Journal: Special Topics</i> , <b>2008</b> , 159, 1-9	2.3	1
53	Thermal and electrical properties of porphyrin derivatives and their relevance for molecule interferometry. <i>Journal of Chemical Physics</i> , <b>2007</b> , 126, 164304	3.9	15
52	A Kapitza-Dirac-Talbot-Lau interferometer for highly polarizable molecules. <i>Nature Physics</i> , <b>2007</b> , 3, 711-715	16.2	156
51	UV-VIS absorption spectroscopy of large molecules for applications in matter wave interferometry. <i>Laser Physics</i> , <b>2007</b> , 17, 583-589	1.2	9
50	Optical polarizabilities of large molecules measured in near-field interferometry. <i>Applied Physics B: Lasers and Optics</i> , <b>2007</b> , 89, 469-473	1.9	25

49	Polarizability measurements of a molecule via a near-field matter-wave interferometer. <i>Physical Review A</i> , <b>2007</b> , 76,	2.6	62
48	Cold beams of biomolecules for quantum optics. <i>Acta Physica Hungarica A Heavy Ion Physics</i> , <b>2006</b> , 26, 87-94		6
47	Wann wird ein Quantenobjekt klassisch? Interferenzexperimente mit molekularen Quantenwellen. <i>Physik in Unserer Zeit</i> , <b>2006</b> , 37, 24-29	0.1	4
46	Exploration of gold nanoparticle beams for matter wave interferometry. <i>Optics Communications</i> , <b>2006</b> , 264, 326-332	2	20
45	Fluorescence of surface adsorbed dyes: investigation of a new detector for molecule interferometry. <i>Journal of Physics: Conference Series</i> , <b>2005</b> , 19, 125-133	0.3	1
44	A scalable optical detection scheme for matter wave interferometry. <i>New Journal of Physics</i> , <b>2005</b> , 7, 224-224	2.9	3
43	Probing the limits of the quantum world. <i>Physics World</i> , <b>2005</b> , 18, 35-40	0.5	36
42	Influence of molecular temperature on the coherence of fullerenes in a near-field interferometer. <i>Physical Review A</i> , <b>2005</b> , 71,	2.6	25
41	Interferometry with large molecules: exploration of coherence, decoherence and novel beam methods. <i>Brazilian Journal of Physics</i> , <b>2005</b> , 35,	1.2	7
40	Sublimation enthalpy of dye molecules measured using fluorescence. <i>Journal of Chemical Physics</i> , <b>2004</b> , 121, 6935-40	3.9	10
39	Theory of decoherence in a matter wave Talbot-Lau interferometer. <i>Physical Review A</i> , <b>2004</b> , 70,	2.6	83
38	Decoherence of matter waves by thermal emission of radiation. <i>Nature</i> , <b>2004</b> , 427, 711-4	50.4	224
37	Heisenberg's Uncertainty and Matter Wave Interferometry with Large Molecules <b>2004</b> , 35-52		
36	Organic Molecules and Decoherence Experiments in a Molecule Interferometer <b>2004</b> , 1-10		
35	Concepts for near-field interferometers with large molecules. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , <b>2003</b> , 5, S82-S89		50
34	Quantum interference experiments with large molecules. <i>American Journal of Physics</i> , <b>2003</b> , 71, 319-325	0.7	134
33	Collisional decoherence observed in matter wave interferometry. <i>Physical Review Letters</i> , <b>2003</b> , 90, 160404	0.4	187
32	Decoherence in a Talbot-Lau interferometer: the influence of molecular scattering. <i>Applied Physics B: Lasers and Optics</i> , <b>2003</b> , 77, 781-787	1.9	61



31	Wave nature of biomolecules and fluorofullerenes. <i>Physical Review Letters</i> , <b>2003</b> , 91, 090408	7.4	163
30	Experimental verification of the Heisenberg uncertainty principle for fullerene molecules. <i>Physical Review A</i> , <b>2002</b> , 65,	2.6	41
29	Matter-wave interferometer for large molecules. <i>Physical Review Letters</i> , <b>2002</b> , 88, 100404	7.4	232
28	Interferometry with Macromolecules: Quantum Paradigms Tested in the Mesoscopic World <b>2002</b> , 333-350		6
27	High contrast interference with C and C. <i>Comptes Rendus Physique</i> , <b>2001</b> , 2, 581-585		3
26	Magneto-optical effects with cold lithium atoms. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , <b>2001</b> , 34, 2527-2536	1.3	25
25	Diffraction of complex molecules by structures made of light. <i>Physical Review Letters</i> , <b>2001</b> , 87, 160401	7.4	82
24	Freie Elektronen an sichtbarem Licht gebeugt: Nach 70 Jahren wurde der Kapitza-Dirac-Effekt eindeutig nachgewiesen. <i>Physik Journal</i> , <b>2001</b> , 57, 20-20		
23	Experimental challenges in fullerene interferometry. <i>Journal of Modern Optics</i> , <b>2000</b> , 47, 2811-2821	1.1	39
22	Wo ist die Grenze der Quantenwelt?: Selbst hei Molekle aus 70 Atomen haben mitunter Welleneigenschaften. <i>Physik Journal</i> , <b>2000</b> , 56, 69-71		9
21	Wave-particle duality of C(60) molecules. <i>Nature</i> , <b>1999</b> , 401, 680-2	50.4	787
20	Towards Coherent Matter Wave Optics with Macromolecules <b>1999</b> , 221-223		2
19	Interferometry and Dissipative Optics with Atoms. <i>Acta Physica Polonica A</i> , <b>1998</b> , 93, 197-209	0.6	4
18	Observation of a Zero-Energy Resonance in Cs-Cs Collisions. <i>Physical Review Letters</i> , <b>1997</b> , 79, 625-628	7.4	101
17	Dissipative atom optics. <i>Journal of Modern Optics</i> , <b>1997</b> , 44, 1827-1836	1.1	1
16	Atomic Wave Diffraction and Interference Using Temporal Slits. <i>Physical Review Letters</i> , <b>1996</b> , 77, 4-7	7.4	183
15	Atom optics in the time domain. <i>Physical Review A</i> , <b>1996</b> , 53, 3369-3378	2.6	40
14	Elementary Sisyphus process close to a dielectric surface. <i>Physical Review A</i> , <b>1996</b> , 54, 4292-4298	2.6	38

13	Spin physics in solid helium: Experimental results and applications. <i>European Physical Journal B</i> , <b>1995</b> , 98, 359-362	1.2	14
12	Pressure shift of atomic resonance lines in liquid and solid helium. <i>European Physical Journal B</i> , <b>1995</b> , 98, 371-376	1.2	43
11	Implantation and spectroscopy of metal atoms in solid helium. <i>European Physical Journal B</i> , <b>1995</b> , 98, 377-381	1.2	36
10	Multiple time scales in the microwave ionization of Rydberg atoms. <i>Physical Review Letters</i> , <b>1995</b> , 75, 3818-3821	7.4	35
9	From coherent to noise-induced microwave ionization of Rydberg atoms. <i>Physical Review A</i> , <b>1995</b> , 51, 4862-4876	2.6	21
8	Long electronic spin relaxation times of Cs atoms in solid 4He. <i>Physical Review Letters</i> , <b>1995</b> , 74, 1359-1362	4.2	45
7	The Hyperfine Structure of Cs Atoms in the b.c.c. Phase of Solid 4 He. <i>Europhysics Letters</i> , <b>1995</b> , 30, 233-237	2.3	15
6	Optical spectroscopy of atoms trapped in solid helium. <i>Physical Review B</i> , <b>1994</b> , 49, 3645-3647	3.3	56
5	Microwave ionization of Rb Rydberg atoms: Frequency dependence. <i>Physical Review A</i> , <b>1994</b> , 49, 3831-3841	2.4	6
4	Pressure shift and broadening of the resonance line of barium atoms in liquid helium. <i>Physical Review B</i> , <b>1994</b> , 50, 6296-6302	3.3	66
3	Can paramagnetic atoms in superfluid helium be used to search for permanent electric dipole moments?. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , <b>1993</b> , 174, 298-303	2.3	44
2	Experimental study of quantum and classical limits in microwave ionization of rubidium Rydberg atoms. <i>Physical Review Letters</i> , <b>1991</b> , 67, 2435-2438	7.4	81
1	Experimental challenges in fullerene interferometry		6