

## Univ. Prof. Dr. Markus Arndt

### Personal Information

Birth	14.09.1965, Unkel/Rh. (Germany)
Nationality	Germany
Marital status	Married, 2 children
WWW	<a href="http://www.quantumnano.at">www.quantumnano.at</a>
EMAIL	<a href="mailto:markus.arndt@univie.ac.at">markus.arndt@univie.ac.at</a>

### Career development

since 2008	Full Professor of Quantum Nanophysics at University of Vienna,
2004 - 2008	Professor of Quantum Nanophysics at University of Vienna,
2002	Docent / Ao. Univ. Prof. at University of Vienna (Habilitation)
1999 - 2002	Universitätsassistent at University of Vienna, with Anton Zeilinger.
1997 - 1998	Postdoc at University of Innsbruck, with Anton Zeilinger.
1995 - 1997	Postdoc at Ecole Normale Supérieure, Paris with Jean Dalibard
1994 - 1995	Postdoc at MPQ, Garching, with A. R. Weis and T. W. Hänsch
1991 - 1994	PhD (LMU, Munich) at MPQ, Garching: with A. R. Weis and T. W. Hänsch
1990 - 1991	Diploma Work at LMU Munich, with Herbert Walther

### Professional activities

7/2020 – 9/2022	Scientific Director, Vienna Doctoral School in Physics
10/2018 – 9/2022	Vice Dean, Faculty of Physics, University of Vienna
1/2020-12/2022	Coordinator, EU STREP SuperMaMa
Since 9/2016	Speaker, Erwin Schrödinger Center for Quantum Science & Technology ESQ Austria
3/2016 – 6/2020	Speaker, Vienna Doctoral School in Physics
3/2013-2/2016	Coordinator, EU STREP NANOQUESTFIT
2013 - 2015	PI & Founding member, Research Platform QuNaBioS
10/2012-9/2014	Dean, Faculty of Physics, University of Vienna
1/2007-9/2012	Speaker, Quantum optics, Q-nanophysics and Q-information
2006 - 2013	Speaker, Vienna FWF Graduate Program Complex Quantum Systems
2007 - 2011	Coordinator, ESF network: Molecule Interferometry & Metrology MIME
2008 - 2013	Member, Steering Committee to the ESF Casimir Network

## Awards, Distinctions & Research Prizes

2019	Robert-Wichard-Pohl Prize, German Physical Society, DPG
2018	Fetzer Pioneer Award, Fetzer Foundation
2014	Outstanding Referee for the journals of the American Physical Society (APS)
2013	Prize for Natural and Technical Sciences, City of Vienna
2012	ERC Advanced Grant, European Research Council
2008	Wittgenstein Prize, Ministry for Science and Research, BMWF & FWF
2006	Science Communication Award (3 <sup>rd</sup> ), Austrian Science Fund, FWF
2001	START Prize, Ministry of Education, Science & Culture & FWF
2000	Fritz-Kohlrausch Prize, Austrian Physical Society, ÖPG
2000	Erich-Schmid-Prize, Austrian Acad. of Sciences, ÖAW, with G. Springholz

## 5 Distinguished fellowships and memberships

Since 2014	Corresponding Member, Austrian Academy of Sciences (ÖAW)
2008-2013	Member JungeKurie, Austrian Academy of Sciences (ÖAW)
1996-1997	DFG research fellowship
1995-1996	Feodor-Lynen fellowship, Alexander von Humboldt foundation
1986-1991	Fellowship, Studienstiftung des deutschen Volkes

## Research Interests

- **Universal matter-wave interferometry**  
with atoms, clusters, tailored molecules, biomolecules and nanoparticles.
- **Quantum physics at the interface to the classical world:**  
decoherence and interferometric tests of wave function collapse.
- **Quantum physics at the interface to chemistry:**  
Quantum nanorulers to measure electric, magnetic, optical and structural properties of molecules.
- **Quantum physics at the interface to biology:**  
Matter-wave experiments with vitamins, antibiotics and polypeptides.
- **Quantum physics at the interface to mass spectrometry technologies**  
Quantum nanowire detectors for biomolecular beams
- **Quantum physics at the interface to optomechanics:**  
Optical cooling of dielectric nanospheres in high-finesse microcavities as well as rotational cooling

## A) Publications listed in the Science Citation Index

1. C. Brand, F. Kialka, S. Troyer, C. Knobloch, K. Simonovic, B.A. Stickler, K. Hornberger, M. Arndt, *Bragg diffraction of large organic molecules*  
**Phys. Rev. Lett.** (2020), DOI: 10.1103/PhysRevLett.125.033604  
[Editor's Suggestion](#)
2. Y.Y. Fein, A. Shayeghi, F. Kialka, P. Geyer, S. Gerlich, M. Arndt, *Quantum-assisted diamagnetic deflection of molecules*  
**Phys. Chem. Chem. Phys.** (2020), DOI: 10.1039/d0cp02211j  
[PCCP Hot Paper](#)
3. J. Schätti, V. Köhler, M. Mayor, Y.Y. Fein, P. Geyer, L. Mairhofer, S. Gerlich, M. Arndt, *Matter-wave interference and deflection of tripeptides decorated with fluorinated alkyl chains*  
**J Mass Spectrom.** (2020), DOI:10.1002/jms.4514
4. A. Shayeghi, P. Rieser, G. Richter, U. Sezer, J.H. Rodewald, P. Geyer, T.J. Martinez, M. Arndt, *Matter-wave interference of a native polypeptide*  
**Nature Comm.**, **11, 144** (2020), DOI: 10.1038/s41467-020-15280-2
5. C. Brand, K. Simonovic, F. Kialka, S. Troyer, P., Geyer, M. Arndt, *A fiber-based beam profiler for high-power laser beams in confined spaces and ultra-high vacuum*  
**Optics Express** (2020), DOI: 10.1364/OE.387650
6. Y. Y. Fein, F. Kialka, P. Geyer, S. Gerlich, M. Arndt, *Coriolis compensation via gravity in a matter-wave interferometer*  
**New Journal of Physics** (2020), DOI:10.1088/1367-2630/ab73c5
7. Y. Y. Fein, A. Shayeghi, L. Mairhofer, F. Kialka, P. Rieser, P. Geyer, S. Gerlich, M. Arndt, *Quantum-Assisted Measurement of Atomic Diamagnetism*  
**Phys. Review X** **10, 011014**(2020), DOI: 10.1103/PhysRevX.10.011014
8. Y. Y. Fein, P. Geyer, F. Kialka, S. Gerlich, M. Arndt, *Improved accuracy fullerene polarizability measurements in a long-baseline matter-wave interferometer*  
**Phys. Rev. Res.** **1, 033158** (2019), DOI: 10.1103/PhysRevResearch.1.033158
9. Y. Y. Fein, P. Greyer, P. Zwick, F. Kialka, S. Pedalino, M. Mayor, S. Gerlich and M. Arndt, *Quantum Superposition of Molecules Beyond 25kDa,*  
**Nature Physics** (2019), DOI:10.1038/s41567-019-0663-9
10. J. Schätti, M. Kriegleder, M. Debiossac, M. Kerschbaum, P. Geyer, M. Mayor, M. Arndt, V. Köhler, *Neutralization of insulin by photocleavage under high vacuum,*  
**Chem. Commun.** (2019), DOI: 10.1039/c9cc05712a
11. G. Wachter, S. Kuhn, S. Minniberger, C. Salter, P. Asenbaum, J. Millen, M. Schneider, J. Schalko, U. Schmid, A. Felgner, D. Hüser, M. Arndt, M. Trupke, *Silicon microcavity arrays with open access and a finesse of half a million,*

**Light: Science & Applications 8:37, 1-7 (2019)**, DOI: 10.1038/s41377-019-0145-y

12. C. Brand, M. Debiossac, T. Susi, F. Aguillon, J. Kotakoski, P. Roncin, M. Arndt  
*Coherent diffraction of hydrogen through the 246 pm lattice of graphene*  
**New J. Phys. (2019)**, DOI: 10.1088/1367-2630/ab05ed
13. F. Kiafka, B. Stickler, K. Hornberger, Y.Y. Fein, P. Geyer, L. Mairhofer, S. Gerlich, M. Arndt,  
*Concepts for long-baseline high-mass matter-wave interferometry*  
**Phys. Scr. 94 (2019)**, DOI: 10.1088/1402-4896/aaf243
14. J. Schätti, P. Rieser, U. Sezer, G. Richter, P. Geyer, G. G. Rondina, D. Häussinger, M. Mayor, A. Shayeghi, V. Köhler, M. Arndt  
*Pushing the mass limit for intact launch and photoionization of large neutral biopolymers*  
**Commun. Chem. 1, 93 (2018)**, DOI: 10.1038/s42004-018-0095-y
15. B. A. Stickler, B. Papendell, S. Kuhn, B. Schriniski, J. Millen, M. Arndt, K. Hornberger  
*Probing macroscopic quantum superpositions with nanorotors*  
**New J. Phys. 20, 122001 (2018)**, DOI: 10.1088/1367-2630/aaece4
16. C. Brand, B.A. Stickler, C. Knobloch, A. Shayeghi, K. Hornberger and M. Arndt  
*Conformer-selection by matter-wave interference*  
**Phys. Rev. Lett. 121, 173002 (2018)**, DOI: 10.1103/PhysRevLett.121.173002
17. L. Mairhofer, S. Eibenberger, A. Shayeghi and M. Arndt  
*A quantum ruler for magnetic deflectometry*  
**Entropy 20, 516 (2018)**, DOI: 10.3390/e20070516
18. M. Debiossac, J. Schätti, M. Kriegleder, P. Geyer, A. Shayeghi, M. Mayor, M. Arndt. and V. Köhler  
*Tailored photocleavable peptides: Fragmentation and neutralization pathways in high vacuum*  
**Phys. Chem. Chem. Phys. 20, 11412--11417 (2018)**, DOI: 10.1039/c8cp01058g
19. J. Rodewald, N. Dörre, A. Grimaldi, P. Geyer, L. Felix, M. Mayor, A. Shayeghi and M. Arndt  
*Isotope-selective high-order interferometry with large organic molecules in free fall*  
**New J. Phys. 20, 033016 (2018)**, DOI: 10.1088/1367-2630/aaade2
20. S. Kuhn, G. Wachter, F. Wieser, J. Millen, M. Schneider, J. Schalko, U. Schmid, M. Trupke and M. Arndt  
*Nanoparticle detection in an open-access silicon microcavity*  
**Appl. Phys. Lett. 111, 253107 (2017)**, DOI: 10.1063/1.5008492  
**Editor's Pick**
21. S. Kuhn, B. A. Stickler, A. Kosloff, F. Patolsky, K. Hornberger, M. Arndt and J. Millen  
*Optically driven ultra-stable nanomechanical rotor*  
**Nature Comm. 8 (1) (2017)**, DOI: 10.1038/s41467-017-01902-9  
**Highlighted by Phys.Org**
22. J. P. Cotter, C. Brand, C. Knobloch, Y. Lilach, O. Cheshnovsky and M. Arndt  
*In search of multipath interference using large molecules*  
**Science Adv. 3, e1602478 (2017)**, DOI: 10.1126/sciadv.1602478

Highlighted in PhysicsWorld, PhysOrg

23. L. Mairhofer, S. Eibenberger, J. P. Cotter, M. Romirer, A. Shayeghi and M. Arndt  
*Quantum-assisted metrology of neutral vitamins in the gas-phase*  
**Angew. Chem. Int. Ed.** **56, 6 (2017)**, DOI: 10.1002/ange.201704916  
German Version: **Angew. Chem.** **129,7 (2017)**, DOI: 10.1002/ange.201704916  
Highlighted in Chemistry Views, HealthMediciNet, ProPhysik
24. L. Gallego, U. Sezer, M. Arndt and M. Mayor  
*Long-pulse laser launch and ionization of tailored large neutral silver nanoparticles with atomic mass assignment*  
**Nanoscale** **9, 9175-9180 (2017)**; DOI: 10.1039/c7nr03297n
25. J. Schätti, U. Sezer, S. Pedalino, J. P. Cotter, M. Arndt\*, M. Mayor and V. Köhler\*  
*Tailoring the volatility and stability of oligopeptides*  
**J. Mass Spectrom.** **52, 550-556(2017)**, DOI: 10.1002/jms.3959
26. J. Rodewald, P. Haslinger, N. Dörre, B.A. Stickler, A. Shayeghi, K. Hornberger and M. Arndt  
*New avenues for matter-wave-enhanced spectroscopy,*  
**Appl. Phys. B** **123,3 (2017)**, DOI 10.1007/s00340-016-6573-y
27. U. Sezer, P. Geyer, M. Kriegleder, M. Debiossac, A. Shayeghi, M. Arndt, F. Lukas and M. Mayor  
*Selective photodissociation of tailored molecular tags as a tool for quantum optics,*  
**Beilstein J. Nanotechnol.** **8, 325-333 (2017)**, DOI 10.3762/bjnano.8.35
28. S. Kuhn, A. Kosloff, B. A. Stickler, F. Patolsky, K. Hornberger, M. Arndt, and J. Millen  
*Full Rotational Control of Levitated Silicon Nanorods*  
**Optica** **4, 356-360 (2017)**, DOI: doi.org/10.1364/OPTICA.4.000356
29. C. Knobloch, B. A. Stickler, C. Brand, M. Sclafani, Y. Lilach, T. Juffmann, O. Cheshnovsky, K. Hornberger and M. Arndt  
*On the role of the electric dipole moment in the diffraction of biomolecules at nanomechanical gratings*  
**Prog. Phys., 1-8 (2016)**, DOI: 10.1002/prop.201600025
30. B. A. Stickler, S. Nimmrichter, L. Martinetz, S. Kuhn, M. Arndt and K. Hornberger  
*Ro-Translational Cavity Cooling of Dielectric Rods and Disks*  
**Phys. Rev. A** **94, 033818, (2016)**, DOI: 10.1103/PhysRevA.94.033818
31. P. Geyer, U. Sezer, J. Rodewald, L. Mairhofer, N. Dörre, P. Haslinger, S. Eibenberger, C. Brand and M. Arndt  
*Perspectives for Quantum Interference with Biomolecules and Biomolecular Clusters*  
**Phys. Scr.** **91, 063007-063019 (2016)**, DOI: 10.1088/0031-8949/91/6/063007
32. W.P. Schleich, et al.  
*Quantum technology: from research to application*  
**Appl. Phys. B** **122, 1-31 (2016)**, DOI: 10.1007/s00340-016-6353-8

33. C. Brand, M. Sclafani, C. Knobloch, Y. Lilach, T. Juffmann, J. Kotakoski, C. Mangler, A. Winter, A. Turchanin, J. Meyer, O. Cheshnovsky and M. Arndt  
*An atomically thin matter-wave beam splitter*  
**Nature Nanotechnology****10**, 845 - 848 (2015), DOI: 10.1038/nnano.2015.179  
[Nature Nano: News & Views by P. Treutlein](#)  
[Highlighted by Physics World](#)
34. Markus Arndt and Christian Brand,  
*Interference of atomic clocks*,  
**Science** **349**, 1168-1169 (2015), DOI: 10.1126/science.aad0683
35. C. Brand, J. Fiedler, T. Juffmann, M. Sclafani, C. Knobloch, S. Scheel, Y. Lilach, O. Cheshnovsky and M. Arndt,  
*A Green's function approach to modeling molecular diffraction in the limit of ultra-thin gratings*  
**Ann. Phys.** **527**, 580–591 (2015), DOI: 10.1002/andp.201500214
36. M. Tomandl, T. Mieling, C. Losert-Valiente Kroon, M. Hopf and M. Arndt  
*Simulated Interactive Research Experiments as Educational Tools for Advanced Science*  
**Scientific Reports** **5**, 14108 (2015), DOI: 10.1038/srep14108  
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37. S. Kuhn, P. Asenbaum, A. Kosloff, M. Sclafani, B. A. Stickler, S. Nimmrichter, K. Hornberger, O. Cheshnovsky, F. Patolsky and M. Arndt  
*Cavity-assisted manipulation of freely rotating silicon nanorods in high vacuum*  
**Nano Letters** **15**, 5604–5608 (2015), DOI: 10.1021/acs.nanolett.5b02302
38. J. Kotakoski, C. Brand, Y. Lilach, O. Cheshnovsky, C. Mangler, M. Arndt and J. C. Meyer  
*Towards two-dimensional all-carbon heterostructures via ion beam patterning of single-layer graphene*  
**Nano Letters** (2015), DOI: 10.1021/acs.nanolett.5b02063
39. J. P. Cotter, S. Eibenberger, L. Mairhofer, X. Cheng, P. Asenbaum, M. Arndt;  
K. Walter, S. Nimmrichter and K. Hornberger  
*Coherence in the presence of absorption and heating in a molecule interferometer*  
**Nature Communications** **6**, 7336 (2015), DOI: 10.1038/ncomms8336
40. U. Sezer, L. Wörner, J. Horak, L. Felix, J. Tüxen, C. Götz, A. Vaziri, M. Mayor and M. Arndt  
*Laser-induced acoustic desorption of natural and functionalized biochromophores*  
**Anal. Chem.** **87**, 5614–5619 (2015), DOI: 10.1021/acs.analchem.5b00601
41. U. Sezer, P. Schmid, L. Felix, M. Mayor and M. Arndt  
*Stability of high-mass molecular libraries: the role of the oligoporphyrin core*  
**J. Mass Spectrom.** **50**, 235-239 (2015), DOI: 10.1002/jms.3526
42. J. Espigulé-Pons, C. Götz, A. Vaziri and M. Arndt  
*Physical Constraints for the Stoneham Model for Light-Dependent Magnetoreception*  
**arXiv:1412.7369 (2014)**

43. N. Dörre, P. Haslinger, J. Rodewald, P. Geyer and M. Arndt,  
*A refined model for Talbot-Lau matter-wave optics with pulsed photo-depletion gratings*  
**JOSA B** **32**, 114–120 (2015), DOI: 10.1364/JOSAB.32.000114
44. N. Dörre, J. Rodewald, P. Geyer, B. von Issendorff, P. Haslinger and M. Arndt  
*Photofragmentation beam splitters for matter-wave interferometry*  
**Phys. Rev. Lett.** **113**, 233001 (2014), DOI: 10.1103/PhysRevLett.113.233001  
[Editor's Choice & Viewpoint in Physics 7, 122 \(2014\) by Gil Summy](#)
45. C. Emary, J. P. Cotter and M. Arndt  
*Testing macroscopic realism through high-mass interferometry.*  
**Phys. Rev. A** **90**,042114-1 (2014), DOI: 10.1103/PhysRevA.90.042114
46. L. Felix, U. Sezer, M. Arndt and M. Mayor,  
*Synthesis of Highly Fluoroalkyl-Functionalized Oligoporphyrin Systems,*  
**Eur. J. Org. Chem.**6884–6895 (2014),DOI: 10.1002/ejoc.201402816  
[Wiley Hot Topics in Fluorine Chemistry](#)
47. S. Eibenberger, X. Cheng, J. P. Cotter and M. Arndt  
*Absolute absorption cross sections from photon recoil in a matter-wave interferometer*  
**Phys. Rev. Lett.** **112**, 250402 (2014), DOI: 10.1103/PhysRevLett.112.250402
48. M. Arndt  
*De Broglie's meter stick: Making measurements with matter waves.*  
**Phys. Today** **67**, 30-36, (2014), DOI: 10.1063/PT.3.2381
49. M. Arndt and K. Hornberger  
*Insight review: Testing the limits of quantum mechanical superpositions*  
**Nature Physics**10, 271-277 (2014), DOI: 10.1038/nphys2863
50. M. Tomandl, C. M. Losert-Valiente Kroon, M. Hopf and M. Arndt  
*Interaktive Forschungssimulationen*  
**Praxis der Naturwissenschaften** **8**,31 - 36 (2013)
51. P. Asenbaum, S. Kuhn, S. Nimmrichter, U. Sezer and M. Arndt  
*Cavity cooling of free silicon nanoparticles in high vacuum*  
**Nature Communications** **4**, 2743 (2013), DOI: 10.1038/ncomms3743
52. T. Juffmann, H. Ulbricht and M. Arndt  
*Experimental methods of molecular matter-wave optics*  
**Rep. Progr. Phys.**76, 086402 (2013), DOI: 10.1088/0034-4885/76/8/086402
53. S. Eibenberger, S. Gerlich, M. Arndt, M. Mayor and J. Tüxen,  
*Matter-wave interference with particles selected from a molecular library with masses exceeding 10 000 amu*  
**Phys. Chem. Chem. Phys.** **15**, 14696 (2013), DOI: 10.1039/C3CP51500A
54. M. Sclafani, T. J. Juffmann, C., Knobloch, and M. Arndt  
*Quantum coherent propagation of complex molecules through the frustule of the alga*

*Amphipleura pellucida*,

**New Journal of Physics** **15**, 083004 (2013), DOI: 10.1088/1367-2630/15/8/083004

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55. P. Schmid, F. Stöhr, M. Arndt, J. Tüxen and M. Mayor  
*Single-Photon Ionization of Organic Molecules*  
**J. Am. Soc. Mass Spectrom.** **24**, 602-8 (2013), DOI: 10.1007/s13361-012-0551-3
  
56. M. Arndt  
*Viewpoint: Free-Falling Interferometry*  
**Physics** **6**, 23 (2013), DOI: 10.1103/Physics.6.23
  
57. P. Haslinger, N. Dörre, P. Geyer, J. Rodewald, S. Nimmrichter and M. Arndt  
*A universal matter-wave interferometer with optical ionization gratings in the time domain*  
**Nature Physics** **9**, 144–148 (2013), DOI: 10.1038/nphys2542  
[News & Views, Nature Physics](#) by A. Cronin & W. Holmgren
  
58. M. Arndt, A. Ekers, W. von Klitzing and H. Ulbricht  
*Focus on modern frontiers of matter wave optics and interferometry, Editorial*  
**New J. Phys.** **14**, 125006 (2012), DOI: 10.1088/1367-2630/14/12/125006
  
59. T. Juffmann, A. Milic, M. Müllneritsch, P. Asenbaum, A. Tsukernik, J. Tüxen, M. Mayor, O. Cheshnovsky and M. Arndt  
*Real-time single-molecule imaging of quantum interference*  
**Nature Nanotechnology** **7**, 297 - 300 (2012), DOI:10.1038/nnano.2012.34  
[News & Views of Nature Nanotechnology](#), by B. Z. Zhao & W. Schöllkopf  
[Cover page of Nature Nanotechnology May 2012](#)  
[Chosen 2016 by Nature Nanotechnology to be among the best science pictures in 10 years of the Nature Nanotechnology](#)
  
60. M. Sclafani, M. Marksteiner, F. McLennan Keir, A. Korneev, A. Semenov, G. Gol'tsman and M. Arndt  
*Characterization of a superconducting nanowire detector for low energy ions*  
**Nanotechnology** **23**, 065501 (2012), DOI: 10.1088/0957-4484/23/6/065501  
[Featured as IOP Labtalk](#)
  
61. K. Hornberger, S. Gerlich, S. Nimmrichter, P. Haslinger and M. Arndt  
*Colloquium: Quantum interference with clusters and molecules*  
**Rev. Mod. Phys.** **84**, 157-173 (2012), DOI: 10.1103/RevModPhys.84.157  
[Highlighted in Nature Physics](#) by M. Buchanan, Feb. 2012
  
62. T. Juffmann, S. Nimmrichter, M. Arndt, H. Gleiter and K. Hornberger  
*New prospects for de Broglie interferometry: Grating diffraction in the far-field and Poisson's spot in the near-field*  
**Found.Phys.** **42**, 98-110 (2012), DOI: 10.1007/s10701-010-920-5
  
63. P. Asenbaum and M. Arndt  
*Cavity stabilization using the weak intrinsic birefringence of dielectric mirrors*



**Optics Letters** **36**, 3720-3722 (2011), DOI: 10.1364/OL.36.003720

64. J. Tüxen, S. Eibenberger, S. Gerlich, M. Arndt, M. Mayor  
*Highly Fluorous Porphyrins as Model Compounds for Molecule Interferometry*  
**Eur. J. Org. Chem.** **25**, 4823–4833 (2011), DOI: 10.1002/ejoc.201100638  
[Featured by Chemistry Views](#)
65. S. Nimmrichter, P. Haslinger, K. Hornberger and M. Arndt  
*Concept of an ionizing time-domain matter-wave interferometer*  
**New J. Phys.** **13**, 075002 (2011), DOI: 10.1088/1367-2630/13/7/075002
66. M. Arndt  
*Coherence from spontaneity*  
**Nature Physics** **7**, 375–376 (2011), DOI: 10.1038/nphys1987
67. S. Nimmrichter, K. Hornberger, P. Haslinger and M. Arndt  
*Testing spontaneous localization theories with matter-wave interferometry*  
**Phys. Rev. A** **83**, 043621 (2011), DOI: 10.1103/PhysRevA.83.043621  
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68. S. Eibenberger, S. Gerlich, M. Arndt, J. Tüxen and M. Mayor  
*Electric moments in molecule interferometry*  
**New J. Phys.** **13** 043033 (2011); DOI: 10.1088/1367-2630/13/4/043033  
[Featured as IOP Select May 2011](#)
69. S. Gerlich, S. Eibenberger, M. Tomandl, S. Nimmrichter, K. Hornberger, P. J. Fagan, J. Tüxen, M. Mayor and M. Arndt,  
*Quantum interference of large organic molecules*  
**Nature Communications** **2**, 263 (2011), April 5<sup>th</sup> 2011, DOI: 10.1038/ncomms1263  
[Featured by Nature Communications April 5<sup>th</sup> 2011](#), [Highlight by Nature April 5<sup>th</sup> 2011](#)  
[TOP100 Science Stories in Discover Magazine 2/2012](#)
70. T. Juffmann, S. Nimmrichter, M. Arndt, H. Gleiter and K. Hornberger  
*New prospects for de Broglie interferometry: Grating diffraction in the far-field and Poisson's spot in the near-field*  
**Found. Phys.** **42**, 98–110 (2012), DOI: 10.1007/s10701-010-9520-5
71. S. Nimmrichter, K. Hammerer, P. Asenbaum, H. Ritsch and M. Arndt  
*Master equation for the motion of a polarizable particle in a multimode cavity*  
**New J. Phys.** **12**, 083003 (2010); DOI:10.1088/1367-2630/12/8/083003
72. A. Dreas, M. Müllneritsch, T. Juffmann, C. Cioffi, M. Arndt and M. Mayor  
*Immobilization of Zinc Porphyrin Complexes on Pyridine-Functionalized Glass Surfaces*  
**Langmuir** **26**(13), 10822–10826 (2010), DOI:10.1021/la100638u
73. J. Tüxen, S. Gerlich, S. Eibenberger, M. Arndt and M. Mayor  
*Quantum interference distinguishes between constitutional isomers*  
**Chem. Commun.** **46**, Issue **23**, pp. 4145-4147 (2010), DOI: 10.1039/c0cc00125b

74. M. Gring, S. Gerlich, S. Eibenberger, S. Nimmrichter, T. Berrada, M. Arndt, H. Ulbricht, K. Hornberger, M. Müri, M. Mayor, M. Boeckmann and N. Doltsinis  
*Influence of conformational molecular dynamics on matter wave interferometry*  
**Phys. Rev. A** **81**, 031604(R) (2010), DOI: 10.1103/PhysRevA.81.031604  
*APS: Selected for the Virtual Journal of Atomic Quantum Fluids 2, Issue 4 (2010)*
75. T. Juffmann, S. Truppe, P. Geyer, S. Deachapunya, H. Ulbricht and M. Arndt  
*Wave and Particle in Molecular Interference Lithography*  
**Phys. Rev. Lett.** **103**, 263601 (2009), DOI: 10.1103/PhysRevLett.103.263601  
**PRL: Editor's Suggestions**  
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