

# Prof. Dr. Jörg Wrachtrup

Universität Stuttgart

Fakultät Physik

3<sup>rd</sup> Physical Institute

Pfaffenwaldring 57

70569 Stuttgart

Germany

Email: wrachtrup@physik.uni-stuttgart.de

Web: http://www.pi3.uni-stuttgart.de

Phone: +49 711 685 65278

Born on December 27, 1961 in Herford (Germany)



## Scientific Career

Since 2000      Professor of physics at the 3. Physical Institute at the University of Stuttgart

1998              Habilitation degree, TU Chemnitz

1994 - 1999      Research Associate at the Institute of Physics of the TU Chemnitz

1994              Ph.D. degree at the Free University Berlin

1993              Research stay at the CNRS in Bordeaux

1990 - 1994      Research Associate at the FU Berlin

1983 - 1990      Physics studies at the physics department of the Free University Berlin

## Scholarships, Awards and Faculty Functions

2016              Zeiss Research Award

2014              Max-Planck Research Award 2014

2014              Bruker Prize of the Royal Society of Chemistry

2012              Gottfried Wilhelm Leibniz Prize 2012

2011              ERC Grant for Advanced Investigators

2010              Max Planck Fellow at the Max Planck Institute of Solid State Research, Stuttgart

2008              Excellence Chair, ENS Cachan (Paris)

2005              Stepanov Award, Belorussian Academy of Science

2002 - 2008      Vice dean of the faculty of physics

1996              Gustav-Hertz-Preis of the German Physical Society (DPG)

1995              Ernst-Reuter-Preis of the FU Berlin

## Ten most important publications

\* Publications jointly together with UoA-researchers involved within this IRTG

§ Publications jointly together with USTUTT-researchers involved within this IRTG

### A) Published in publication outlets with scientific quality assurance and book publications:

1. Shi, F.; Zhang, Q.; Wang, P.F.; Sun, H.B.; Ju, C.Y.; Reinhard, F.; Chen, H.W.; Wrachtrup, J.; Du, J.F.: Single-protein spin resonance spectroscopy under ambient conditions. *Science* 347(6226), p. 1135-1138, 2015
2. Waldherr, G.; Wang, Y.; Zaiser, S.; Jamali, M.; Schulte-Herbrüggen, T.; Abbe, H.; Ohshima, T.; Isoya, J.; Du, J.F.; Neumann, P.; Wrachtrup, J.: Quantum error correction in a solid-state hybrid spin register. *Nature*, 506, 204-207, 2014.
3. Siyushev, P.; Stein, G.; Wrachtrup, J.; Gerhardt I.: Molecular Photons interfaced with alkali atoms. *Nature*, 509, p. 66-70, 2014.
4. Dolde, F.; Jakobi, I.; Naydenov, B.; Zhao, N.; Pezzagna, S.; Trautmann, C.; Meijer, J.; Neumann, P.; Jelezko, F.; Wrachtrup, J.: Room-temperature entanglement between single defect spins in diamond. *Nature Physics* 9, p. 139-143, 2013.
5. Staudacher, T.; Shi, F.; Pezzagna, S.; Meijer, J.; Du, J.; Meriles, C.A.; Reinhard, F.; Wrachtrup, J.: Nuclear Magnetic Resonance Spectroscopy on a (5-Nanometer)<sup>3</sup> Sample. *Science*, 339(6119), p. 516-563, 2013.
6. Neumann, P.; Beck, J.; Steiner, M.; Rempp, F.; Fedder, H.; Hemmer, P.R.; Wrachtrup, J.; Jelezko, F.: Single-Shot Readout of a Single Nuclear Spin. *Science* 329(5991), p. 542-544, 2010.
7. Balasubramanian, G.; Chan, I.Y.; Kolesov, R.; Al-Hmoud, M.; Tisler, J.; Shin, C.; Kim, C.; Wojcik, A.; Hemmer, P.R.; Krueger, A.; Hanke, T.; Leitenstorfer, A.; Bratschitsch, R.; Jelezko, F.; Wrachtrup, J.: Nanoscale imaging magnetometry with diamond spins under ambient conditions. *Nature* 455, p. 648-651, 2008.
8. Neumann, P.; Mizuochi, N.; Rempp, F.; Hemmer, P.R.; Watanabe, H.; Yamasaki, S.; Jacques, V.; Gaebel, T.; Jelezko, F.; Wrachtrup, J.: Multipartite entanglement among single spins in diamond. *Science*, 320(5881), p. 1326-1329, 2008.
9. Balasubramanian, G.; Neumann, P.; Twitchen, D.; Markham, M.; Kolesov, R.; Mizuochi, N.; Isoya, J.; Achard, J.; Beck, J.; Tissler, J.; Jacques, V.; Hemmer, P.R.; Jelezko, F.; Wrachtrup, J.: Ultralong spin coherence time in isotopically engineered diamond. *Nature Materials* 8, p. 383-387, 2009.
10. Childress, L.; Dutt, M.V.G.; Taylor, J. M.; Zibrov, A. S.; Jelezko, F.; Wrachtrup, J.; Hemmer, P. R.; Lukin, M. D.: Coherent dynamics of coupled electron and nuclear spin qubits in diamond. *Science*, 314(5797), p. 281-285, 2006.

### B) Other publications

### C) Patents

Supervised graduate students since graduation year 2011

No.	Last Name, First Name	Degree	Title of the dissertation	Duration of thesis
1	Stöhr, Rainer	Dr. rer. nat.	Light-matter interaction in graphene	2008 - 2012
2	Neumann, Philipp	Dr. rer. nat.	Towards a room temperature solid state quantum processor - the nitrogen-vacancy center in diamond	2008 - 2012
3	Rempp, Florian	PhD	Decoherence properties of the NV-center in diamond	2008-2012
4	Nothaft, Matthias	PhD	Elektrolumineszenz einzelner Moleküle in organischen Leuchtdioden.	2009-2013
5	Steinert, Steffen	Dr. rer. nat.	Widefield Magneto-Optical Imaging	2009 - 2013
6	Tisler, Julia	Dr. rer. nat.	Nitrogen-vacancy center in diamond as sensor for Fluorescence Resonance Energy Transfer	2010 - 2014
7	Grotz, Bernhard	Dr. rer. nat.	Coupling Single NV Centers to External Degrees of Freedom	2010 - 2014
8	Staudacher, Tobias	Dr. rer. nat.	Nuclear Magnetic Resonance on single molecules	2011-2015

Most important research grants since 2011

No.	Research Project	Funding Period	Name(s) of the principal investigator(s)	Funding source and reference number
1	ERC "SQUTEC"	2012 - 2017	Wrachtrup, J.	EU
2	DFG Research Group "Diamond"	2010 - 2013	Wrachtrup, J.	DFG
3	SFB TRR21	2006 - 2014	Pfau, T. Wrachtrup, J.	DFG
4	EU Project DIADEMS	2013 - 2017	Thales, Wrachtrup, J.	EU
5	BMBF Project "Q.Com"	2014 - 2017	Wrachtrup, J.	BMBF