

7 References

7.1 References in chapter 1

- [1] M. Planck, Verhandlungen der deutschen physikalischen Gesellschaft 2, 237 (1900)
- [2] N. Bohr, *Phil. Mag.* **26**, 476 (1913)
- [3] W. Heisenberg, *Zeitschr. Phys.* **33**, 879 (1925)
- [4] M. Born and P. Jordan, *Zeitschr. Phys.* **34**, 858 (1925)
- [5] P.A.M. Dirac, *Proc. Roy. Soc. A* **109**, 642 (1925)
- [6] W. Pauli, *Zeitschr. Phys.* **36**, 336 (1926)
- [7] E. Schrödinger, *Ann. der Phys.* **79**, 361 (1926)
- [8] E. Schrodinger, *Ann. der Phys.* **79**, 734 (1926)
- [9] J. Faye, "Copenhagen Interpretation of Quantum Mechanics", The Stanford Encyclopedia of Philosophy (Summer 2002 Edition), Edward N. Zalta (ed.), URL = <<http://plato.stanford.edu/archives/sum2002/entries/qm-copenhagen/>>
- [10] J. von Neumann, *Mathematische Grundlagen der Quanten-Mechanik*, Springer-Verlag, Berlin, 1932
- [11] National measurement laboratory of the UK,
URL = <<http://www.npl.co.uk/electromagnetic/dclf/voltres/resvolt.html>>
- [12] S. N. Bose, *Zeitschr. Phys.* **26**, 178 (1924); A. Einstein, *Sitzungsber. kgl. Preuss. Akad. Wiss.* **1924**, 261 (1924)
- [13] Th. Sauter, W. Neuhauser, R. Blatt, P.E. Toschek, *Phys. Rev. Lett.* **57**, 1696 (1986)
- [14] C.E. Wieman, E.A. Cornell, *Science* **269**, 198 (1995)
- [15] R.P. Feynman, *Int. J. Theor. Phys.* **21**, 467 (1982)
- [16] D. Deutsch, *Proc. R. Soc. Lond. A* **425**, 73 (1985)
- [17] P. W. Shor, in *Proceedings of the 35th Annual Symposium on Foundations of Computer Science, Santa Fe, NM, 1994*, edited by Shafi Goldwasser (IEEE Computer Society Press, Los Alamitos, CA, 1994), 124 (1994); *SIAM J. Comput.* **26**, 1484 (1997)
- [18] L. Grover, in *Proc. 28th Annual ACM Symposium on the Theory of Computation*, 212, ACM Press, New York (1995)
- [19] C. Monroe, D.M. Meekhof, B.E. King, W.M. Itano, and D.J. Wineland, *Phys. Rev. Lett.* **75**, 4714

- [20] I.L. Chuang, N. Gershenfeld, M. Kubinec, *Phys. Rev. Lett.* **80**, 3408 (1998)
- [21] D.P. DiVincenzo, D. Loss, *Superlattices and Microstructures* **23**, 419 (1998)
- [22] D.P. DiVincenzo, *Fortschr. Phys. – Progress of Physics* **48**, 771 (2000)
- [23] J. Preskill, *Proc. R. Soc. London A* **454**, 385 (1998)
- [24] A. Barenco, C.H. Bennett, R. Cleve, D.P. DiVincenzo, N. Margolus, P. Shor, T. Sleator, J.A. Smolin, H. Weinfurter, *Phys. Rev. A* **52**, 3457 (1995)
- [25] N.A. Gershenfeld, I.L. Chuang, *Science* **275**, 350 (1997)
- [26] Fortschritte der Physik – Progress of Physics **48**, Iss. 9 – 11, WILEY-VCH Verlag Berlin GmbH, Fed. Rep. of Germany (2000)
- [27] J.I. Cirac, P. Zoller, *Phys. Rev. Lett.* **74**, 4091 (1995)
- [28] D. Deutsch, R. Jozsa, *Proc. R. Soc. Lond. A* **439**, 553 (1992)
- [29] S. Gulde, M. Riebe G.P.T. Lancaster, C. Becher, J. Eschner, H. Häffner, F. Schmidt-Kaler, I.L. Chuang, R. Blatt, *Nature* **421**, 48 (2003)
- [30] F. Schmidt-Kaler, H. Häffner, M. Riebe S. Gulde, G.P.T. Lancaster, T. Deuschle, C. Becher, C.F. Roos, J. Eschner, R. Blatt, *Nature* **422**, 408 (2003)
- [31] D. Leibfried, B. DeMarco, V. Meyer, D. Lucas, M. Barrett, J. Britton, W.M. Itano, B. Jelenkovic, C. Langer, T. Rosenband, D.J. Wineland, *Nature* **422**, 412 (2003)
- [32] Ch. Wunderlich, Ch. Balzer, T. Hannemann, F. Mintert, W. Neuhauser, D. Reiß, P.E. Toschek, *J. Phys. B: At. Mol. Opt. Phys.* **36**, 1063 (2003)
- [33] Y. Nakamura, Yu.A. Pashkin, J.S. Tsai, *Nature* **398**, 786 (1999)
- [34] J.E. Mooij, T.P. Orlando, L. Levitov, L. Tian, C. H. van der Wal, S. Lloyd, *Science* **285**, 1036 (1999)
- [35] D. Vion, A. Aassime, A. Cottet, P. Joyez, H. Pothier, C. Urbina, D. Esteve, M.H. Devoret, *Science* **296**, 886 (2002)
- [36] Yu.A. Phashkin, T. Yamamoto, O. Astafiev, Y. Nakamura, D.V. Averin, J.S. Tsai, *Nature* **421**, 823 (2003)
- [37] M.N. Leuenberger, D. Loss, *Physica E* **10**, 452 (2001)
- [38] D.D. Awschalom, *Physica E* **10**, 1 (2001)
- [39] Y. Kato, R.C. Myers, D.C. Driscoll, A.C. Gosard, J. Levy, D.D. Awschalom, *Science* **299**, 1201 (2003)
- [40] R. Hanson, B. Witkamp, L.M.K. Vandersypen, L.H. Willems van Beveren, J.M. Elzerman, L.P. Kouwenhoven, URL = <<http://arxiv.org/abs/cond-mat/0303139>>, submitted to *Phys. Rev. Lett.*

- [41] L.M.K. Vandersypen, M. Steffen, G. Breyta, C.S. Yannoni, M.H. Sherwood, I.L. Chuang, *Nature* **414**, 883 (2001)
- [42] D.G. Cory, M.D. Price, W. Maas, E. Knill, R. Laflamme, W.H. Zurek, T.F. Havel, S. S. Somaroo, *Phys. Rev. Lett.* **81**, 2152 (1998)
- [43] D.G. Cory, A.F. Fahmy, T.F. Havel, *Proc Natl. Acad. Sci. USA* **94**, 1634 (1997)
- [44] E. Knill, I.L. Chuang, R. Laflamme, *Phys. Rev. A* **57**, 3348 (1998)
- [45] N.A. Gershenfeld, I.L. Chuang, *Science* **275**, 350 (1997)
- [46] M.A. Nielsen, I.L. Chuang, *Quantum Computation and Quantum Information*, University Press, Cambridge, United Kingdom (2000)
- [47] J.A. Jones, R.H. Hansen, M. Mosca, *J. Magn. Res.* **135**, 353 (1998)
- [48] D.G. Cory, R. Laflamme, E. Knill, L. Viola, T.F. Havel, N. Boulant, G. Boutis, E. Fortunato, S. Lloyd, S. Martinez, C. Negrevergne, M. Pravia, Y. Sharf, G. Teklemariam, Y.S. Weinstein, W.H. Zurek, *Fortschr. Phys. – Progress of Physics* **48**, 875 (2000)
- [49] M.H. Levitt, R. Freeman, *J. Magn. Res.* **43**, 502 (1981)
- [50] A.J. Shaka, J. Keeler, T. Frenkiel, R. Freeman, *J. Magn. Res.* **52**, 335 (1983)
- [51] A.J. Shaka, P.B. Barker, R. Freeman, *J. Magn. Res.* **64**, 574 (1985)
- [52] A.J. Shaka, C.J. Lee, A. Pines, *J. Magn. Res.* **77**, 274 (1988)
- [53] D.G. Cory, M.D. Price, T.F. Havel, *Physica D* **120**, 82 (1998)
- [54] B.E. Kane, *Nature* **393**, 133 (1998)
- [55] B. Koiller, X. Hu, S. Das Sarma, *Phys. Rev. Lett.* **88**, 027903 (2002)
- [56] S. Warren, *Science* **277**, 1688 (1997)
- [57] J.A. Jones, *Fortschr. Phys. – Progress of Physics* **48**, 909 (2000)
- [58] H.W. Kroto, J.R. Heath, S.C. O'Brian, R.F. Curl, R.E. Smalley, *Nature* **318**, 162 (1985)
- [59] S. Knorr, A. Grupp, M. Mehring, U. Kirbach, A. Bartl, L. Dunsch, *Appl. Phys. A* **66**, 257 (1998)
- [60] W. Harneit, *Phys. Rev. A* **65**, 032322 (2002)
- [61] D. Suter, K. Lim, *Phys. Rev. A* **65**, 052309 (2002)
- [62] J. Twamley, *Phys. Rev. A* **67**, 052318 (2003)
- [63] W. Harneit, C. Meyer, A. Weidinger, D. Suter, J. Twamley, *phys. stat. sol. (b)* **233**, 453 (2002)
- [64] C. Durkan, M.E. Welland, *Appl. Phys. Lett.* **80**, 458 (2002)
- [65] S. Lloyd, *Science* **261**, 1569 (1993)
- [66] S.C. Benjamin, *Phys. Rev. A* **61**, 020301(R) (2000)

7.2 References in chapter 2

- [1] T. Almeida Murphy, T. Pawlik, A. Weidinger, M. Höhne, R. Alcalá, J.-M. Spaeth, *Phys. Rev. Lett.* **77**, 1075 (1996)
- [2] A. Weidinger, B. Piezak, M. Waiblinger, K. Lips, B. Nuber, A. Hirsch, *Electronic Properties of Novel Materials – Progress in Molecular Nanostructures*, eds. H. Kuzmany, J. Fink, M. Mehring, S. Roth, *AIP Conf. Proc.* **422**, 363 (1998)
- [3] A. Grupp, B. Pietzak, M. Waiblinger, T. Almeida Murphy, A. Weidinger, E. Rodunger, *Molecular Nanostructures*, eds. H. Kuzmany, J. Fink, M. Mehring, S. Roth, 224, World Scientific, Singapore (1998)
- [4] J.A. Larsson, J.C. Greer, W. Harneit, and W. Weidinger, *J. Chem. Phys.* **116**, 7849 (2002)
- [5] A. Weidinger, M. Waiblinger, B. Pietzak, T. Almeida Murphy, *Appl. Phys. A: Mater. Sci. Process.* **A66**, 287 (1998)
- [6] N. Weiden, H. Käss, K.-P. Dinse, *J. Phys. Chem. B* **103**, 9826 (1999)
- [7] K. Lips, M. Waiblinger, B. Pietzak, A. Weidinger, *Mol. Materials* **13**, 217 (2000)
- [8] M. Waiblinger, K. Lips, W. Harneit, A. Weidinger, E. Dietel, A. Hirsch, *Phys. Rev. B* **63**, 045421; **64**, 159901(E) (2001)
- [9] B. Goedde, M. Waiblinger, P. Jakes, N. Weiden, K.-P. Dinse, A. Weidinger, *Chem. Phys. Lett.* **334**, 12 (2001)
- [10] E. Dietel, A. Hirsch, B. Pietzak, M. Waiblinger, K. Lips, A. Weidinger, A. Gruss, and K.-P. Dinse, *J. Am. Chem. Soc.* **121**, 2432 (1999)
- [11] J.C. Hummelen, B.W. Knight, F. LePeq, F. Wudl, J. Yao, C.L. Wilkins, *J. Org. Chem.* **60**, 532 (1995)
- [12] S.E. Shaheen, C.J. Brabec, N.S. Sariciftci, F. Padinger, T. Fromherz, J.C. Hummelen, *Appl. Phys. Lett.* **78**, 841 (2001)
- [13] R.D. Johnson, M.S. de Vries, J. Salem, D.S. Bethune, C.S. Yannoni, *Nature* **355**, 239 (1992)
- [14] M. Saunders, H.A. Jiménez-Vázquez, J. Cross, R.J. Poreda, *Science* **259**, 1428 (1993)
- [15] R. Tellgmann, N. Krawez, S.-H. Lin, I. V. Hertel, E.E.B. Campbell, *Nature* **382**, 407 (1996)
- [16] P. Jakes, K.-P. Dinse, C. Meyer, W. Harneit, A. Weidinger, *Phys. Chem. Chem. Phys.* **5**, 4080 (2003)
- [17] B. Pietzak, *Fullerenes as chemical atom traps for nitrogen and phosphorus*, Dissertation Technische Universität Berlin (1998)
- [18] G.S. Jackel, W.H. Nelson, W. Gordy, *Phys. Rev.* **172**, 176 (1968)

- [19] M. Waiblinger, *Untersuchungen der endohedralen Fullerene mit eingeschlossenen Stickstoff- und Phosphor-Atomen*, Dissertation Universität Konstanz (2001)
- [20] T.C. Farrar, E.D. Becker, *Pulse and Fourier Transform NMR – Introduction to Theory and Methods*, Academic Press, Inc., New York 1971
- [21] G.S. Jackel, W.H. Nelson, W. Gordy, *Phys. Rev.* **176**, 453 (1968)
- [22] G. Schatz, A. Weidinger, *Nukleare Festkörperphysik*, Teubner-Verlag, Stuttgart (1992)
- [23] J.A. Larsson and J.C. Greer, *Molecular Physics* **100**, 3475 (2002)
- [24] S. Melchor, J.A. Dobado, J.A. Larsson, J.C. Greer, *J. Am. Chem. Soc.* **125**, 2301 (2003)
- [25] J. Lu, Y. Zhou, X. Zhang and X. Zhao, *Molecular Physics* **99**, 1199 (2001)
- [26] J.J. BelBruno, *Fullerenes, Nanotubes and Carbon Nanostructures* **10**, 23 (2002)

7.3 References in chapter 3

- [1] E.L. Hahn, *Phys. Rev.* **80**, 580 (1950)
- [2] M. Waiblinger, *Untersuchungen der endohedralen Fullerene mit eingeschlossenen Stickstoff- und Phosphor-Atomen*, Dissertation Universität Konstanz (2001)
- [3] S. Knorr, *Elektronenspinresonanz-Untersuchungen zu elektronischen Eigenschaften von Fullerenen und deren Verbindungen*, Dissertation Universität Stuttgart (2002)
- [4] A. Abragam, *Principles of Nuclear Magnetism*, Oxford University Press, New York (1961)
- [5] M. Mehring and V.A. Weberruss, *Object-oriented magnetic resonance*, Academic Press, London (2001)
- [6] S. Knorr, A. Grupp, M. Mehring, M. Waiblinger, and A. Weidinger, *Electronic Properties of Novel Materials-Molecular Nanostructures*, eds. H. Kuzmany, J. Fink, M. Mehring, S. Roth, *AIP Conf. Proc.* **544**, 191 (2000)
- [7] A. Grupp, B. Pietzak, M. Waiblinger, T. Almeida Murphy, A. Weidinger, E. Rodunger, *Molecular Nanostructures*, eds. H. Kuzmany, J. Fink, M. Mehring, S. Roth, 224, World Scientific, Singapore (1998)
- [8] J.A. Larsson, J.C. Greer, W. Harneit, and W. Weidinger, *J. Chem. Phys.* **116**, 7849
- [9] M. Waiblinger, B. Goedde, K. Lips, W. Harneit, P. Jakeš, A. Weidinger, K.-P. Dinse, *AIP Conf. Proc.* **544**, 195 (2000)
- [10] C. Knapp, N. Weiden, H. Käss, K.-P. Dinse, B. Pietzak, M. Waiblinger and A. Weidinger, *Mol. Phys.* **95**, 999 (1998)
- [11] S. Knorr, A. Grupp, M. Mehring, M. Waiblinger, and A. Weidinger, *Electronic Properties of Novel Materials-Molecular Nanostructures*, eds. H. Kuzmany, J. Fink, M. Mehring, S. Roth, *AIP Conf. Proc.* **591**, 105 (2001)

7.4 References in chapter 4

- [1] H.C. Torrey, *Phys. Rev.* **76**, 1059 (1949)
- [2] A. Samoson, E. Lippmaa, *Phys. Rev. B* **28**, 6567 (1983)
- [3] R. Janssen, G.A.H. Tjink, W.S. Veeman, *J. Chem. Phys.* **88**, 518 (1987)
- [4] R. Furrer, F. Fujara, C. Lange, D. Stehlik, H.M. Vieth, W. Vollmann, *Chem. Phys. Letters* **75**, 332 (1980)
- [5] A.V. Astashkin, A. Schweiger, *Chem. Phys. Letters* **174**, 595 (1990)
- [6] J. Isoya, H. Kande, J.R. Norris, J. Tang, M.K. Bowman, *Phys. Rev. B* **41**, 3905 (1990)
- [7] I. Solomon, *Phys. Rev. Letters* **2**, 301 (1959)
- [8] S. Stoll, G. Jeschke, M. Willer, A. Schweiger, *J. Magn. Res.* **130**, 86 (1998)
- [9] K.-P. Dinse, H. Käß, C. Knapp, N. Weiden, *Carbon* **38**, 1635 (2000)
- [10] M. Iwasaki and K. Toriyama, *J. Chem. Phys.* **82**, 5415 (1985)
- [11] A. Abragam, *Principles of Nuclear Magnetism*, Oxford University Press, New York (1961)
- [12] N. Weiden, private communication
- [13] N. Weiden, H. Käss, K.-P. Dinse, *J. Phys. Chem. B* **103**, 9826 (1999)
- [14] J.E. Fischer and P.A. Heiney, *J. Phys. Chem. Solids* **54**, 1725 (1993)
- [15] J. Lu, Y. Zhou, X. Zhang and X. Zhao, *Molecular Physics* **99**, 1199 (2001)
- [16] J.J. BelBruno, *Fullerenes, Nanotubes and Carbon Nanostructures* **10**, 23 (2002)
- [17] J.A. Larsson and J.C. Greer, *Molecular Physics* **100**, 3475 (2002)
- [18] S. Melchor, J.A. Dobado, J.A. Larsson, J.C. Greer, *J. Am. Chem. Soc.* **125**, 2301 (2003)
- [19] C. Knapp, N. Weiden, H. Käss, K.-P. Dinse, B. Pietzak, M. Waiblinger and A. Weidinger, *Mol. Phys.* **95**, 999 (1998)

7.5 References in chapter 5

- [1] S. Lloyd, *Science* **261**, 1569 (1993)
- [2] S.C. Benjamin, *Phys. Rev. A* **61**, 020301(R) (2000)
- [3] U. Reuther, T. Brandmüller, W. Donaubaue, F. Hampel, A. Hirsch, *Chem. Eur. J.* **8**, 2261 (2002)
- [4] A. Hirsch, private communication
- [5] M. Waiblinger, *Untersuchungen der endohedralen Fullerene mit eingeschlossenen Stickstoff- und Phosphor-Atomen*, Dissertation Universität Konstanz (2001)

- [6] B. Pietzak, M. Waiblinger, T. Almeida Murphy, A. Weidinger, M. Höhne, E. Dietel, A. Hirsch, *Chem. Phys. Lett.* **279**, 259 (1997)
- [7] E. Dietel, A. Hirsch, B. Pietzak, M. Waiblinger, K. Lips, A. Weidinger, A. Gruss, and K.-P. Dinse, *J. Am. Chem. Soc.* **121**, 2432 (1999)
- [8] B. Goedde, M. Waiblinger, P. Jakes, N. Weiden, K.-P. Dinse, A. Weidinger, *Chem. Phys. Lett.* **334**, 12 (2001)
- [9] J. Twamley, *Phys. Rev. A* **67**, 052318 (2003)
- [10] H.R. Falle and G.R. Luckhurst, *J. Magn. Reson. (1969-1992)* **3**, 161 (1970)
- [11] J.W. Emsley and J.C. Lindeon, in *NMR spectroscopy Using Liquid Crystal Solvents*, Pergamon Press, Oxford (1975)
- [12] J.I. Spielberg and E. Gelerinter, *Phys. Rev. A* **32**, 3647 (1985)
- [13] N. Weiden, B. Goedde, H. Käss, K.-P. Dinse, and M. Rohrer, *Phys. Rev. Lett.* **85**, 1544 (2000)
- [14] P. Jakes, N. Weiden, R.-A. Eichel, A. Gembus, K.-P. Dinse, C. Meyer, W. Harneit, and A. Weidinger, *J. of Mag. Res.* **156**, 303 (2002)
- [15] P.C. Chow, X. Jiang, G. Reiter, P. Wochner, S.C. Moss, J.D. Axe, J.C. Hanson, R.K. McMullan, R.L. Meng, and C.W. Chu, *Phys. Rev. Lett.* **69**, 2943 (1992)
- [16] J.E. Fischer and P.A. Heiney, *J. Phys. Chem. Solids* **54**, 1725 (1993)
- [17] M. Matus and H. Kuzmany, *Appl Phys. A: Solids Surf.* **A56**, 241 (1993)
- [18] P.H.M. Loosdrecht, P.J.M. van Betum, M.A. Verheijen, and G. Meijer, *Chem. Phys. Lett.* **198**, 587 (1992)
- [19] K.-P. Dinse, H. Käss, C. Knapp, and N. Weiden, *Carbon* **38**, 1635 (2000)
- [20] B. Pietzak, A. Weidinger, K.-P. Dinse, and A. Hirsch, in *Endofullerenes: A New Family of Carbon Clusters*, edited by T. Akasaka and S. Nagase (Kluwer Academic Publishers, Dordrecht, The Netherlands), 13 (2002)
- [21] C. Knapp, K.-P. Dinse, B. Pietzak, M. Waiblinger, and A. Weidinger, *Chem. Phys. Lett.* **272**, 433 (1997)
- [22] P. Jakes, K.-P. Dinse, C. Meyer, W. Harneit, A. Weidinger, *Phys. Chem. Chem. Phys.* **5**, 4080 (2003)
- [23] B. Gödde, *Synthese und Spektroskopie angereicherter stickstoffendohedraler Fullerene*, Dissertation TU Darmstadt (2001)
- [24] E. Knill, I. Chuang, R. Laflamme, *Phys. Rev. A* **57**, 3348 (1998)

7.6 References in chapter 6

- [1] V.L. Ermaov, B.M. Fung, *Phys Rev. A* **66**, 042310 (2002)

-
- [2] T. Chuard, R. Deschenaux, A. Hirsch, H. Schönberger, *Chem. Commun.* No. 9, 2103 (1999)
- [3] M. Sawamura, K. Kawai, Y. Matsuo, K. Kanie, T. Kato, E. Nakamura, *Nature* **419**, 702 (2002)
- [4] Z. Siwy, P. Apel, D. Dobrev, R. Neumann, R. Spohr, C. Trautmann, K. Voss, *Nucl. Instr. and Meth. in Phys. Res. B* **208**, 143 (2003)
- [5] O. Jessensky, F. Müller, U. Gösele, *Appl. Phys. Lett.* **72**, 1173 (1998)
- [6] C. Durkan, M.E. Welland, *Appl. Phys. Lett.* **80**, 458 (2002)
- [7] A.V. Balatsky, Y. Manassen, R. Salem, *Phys. Rev. B* **66**, 195416 (2002)
- [8] K. Wago, D. Botkin, C.S. Yannoni, D. Rugar, *Phys. Rev. B* **57**, 1108 (1998)
- [9] F. Jelezko, C. Tietz, A. Gruber, I. Popa, A. Nizovtsev, S. Kilin, J. Wrachtrup, *Single Molecules* **2**, 255 (2002); J. Wrachtrup, *Phys. Bl.* **56**, 14-15 (2000)
- [10] QIPD-DF ROSES, URL=<http://planck.thphys.may.ie/ROSES/roses_project.htm>