

Literaturverzeichnis

- [1] X.Z. Wu, B.M. Ocko, E.B. Sirota, S.K. Sinha, M. Deutsch, B.H. Cao, M.W. Kim. Surface tension measurements of surface freezing in liquid normal alkanes. *Science*, 261:1018, 1993.
- [2] O. Gang, B.M. Ocko, X.Z. Wu, E.B. Sirota, M. Deutsch. Surface freezing in hydrated alcohol melts. *Phys. Rev. Lett.*, 80(6):1264, 1998.
- [3] W. Paul, H. Steinwedel. *Z. Naturforsch.*, 8:448, 1953.
- [4] W. Paul. Elektromagnetische Käfige für geladene und neutrale Teilchen. *Phys. B1*, 46(7):227, 1990.
- [5] E.J. Davis, A.K. Ray . Single aerosol particle size and mass measurements using an electrodynamic balance. *J. Colloid and Interface Sci.*, 75(2):566, 1980.
- [6] M. D. Cohen, R. C. Flagan, J. H. Seinfeld. Studies of concentrated electrolyte solutions using the electrodynamic balance. 1. water activities for single-electrolyte solutions. *J. Phys. Chem.*, 91(-):4563–4574, 1987.
- [7] M. D. Cohen, R. C. Flagan, J. H. Seinfeld. Studies of concentrated electrolyte solutions using the electrodynamic balance. 2. water activities for mixed-electrolyte solutions. *J. Phys. Chem.*, 91(-):4575–4582, 1987.
- [8] M. D. Cohen, R. C. Flagan, J. H. Seinfeld. Studies of concentrated electrolyte solutions using the electrodynamic balance. 3. solute nucleation. *J. Phys. Chem.*, 91(-):4583–4590, 1987.
- [9] B. Kraemer, O. Hübner, H. Vortisch, T. Leisner, M. Schwell, E. Ruehl, H. Baumgärtel Homogeneous nucleation rates of supercooled water measured in single levitated microdroplets. *J. Chem. Phys.*, 111(14):6521, 1999.

- [10] P. Stöckel, H. Baumgärtel, H. Vortisch, T. Leisner. Homogeneous nucleation of supercooled liquid water in levitated microdroplets. *J. of Molecular Liquids*, 96-97:153, 2002.
- [11] J. Klein. *Untersuchung von Phasenübergängen an Unterkühlten, Wässrigen MgCl₂-Tropfen in einer Elektromagnetischen Falle*. Doktorarbeit, Fachbereich Chemie, Freie Universität Berlin, 2002.
- [12] H. Vortisch, B. Krämer, I. Weidinger, L. Wöste, T. Leisner, M. Schwell, H. Baumgärtel, E. Rühl. Homogeneous freezing nucleation rates and crystallization dynamics of single levitated sulfuric acid solution droplets. *PCCP*, 2:1407, 2000.
- [13] M. Schwell, H. Baumgärtel, I. Weidinger, B. Krämer, H. Vortisch, T. Leisner, E. Rühl. Uptake dynamics and diffusion of HCl in sulfuric acid solution measured in single levitated microdroplets. *J. Phys. Chem. A*, 104:6726–6732, 2000.
- [14] Stephen Arnold, S. Holler, S. D. Druger Imaging enhanced energy transfer in a levitated aerosol particle *J. Chem. Phys.*, 104(19):7741, 1996.
- [15] H.-B. Lin, D. Eversole, C.D. Merritt, A.J. Campillo. Cavity-modified spontaneous-emission rates in liquid microdroplets. *Phys. Review A*, 45(9):6756, 1992.
- [16] F. Weritz. *Absorptionsspektroskopie an Einzelnen Levitierten Mikropartikeln*. Doktorarbeit, Fachbereich Physik, Freie Universität Berlin, 2001.
- [17] D. Duft, T. Achtzehn, R. Müller, B.A. Huber, T. Leisner. Raleigh jets from levitated microdroplets. *Nature*, 421:128, 2003.
- [18] A. Kneschke. *Differentialgleichungen und Randprobleme*. VEB Verlag Technik, 1962.
- [19] P.H. Dawson. *Quadrupole Mass Spectrometry and its Applications*. Elsevier Scientific Publishing Company, 1976.
- [20] R.F. Wuerker, R.V. Langmuir. *Applied Physics*, 30:342, 1959.

- [21] A. Javaid, G.S.P. Castle, I.I. Inculet, K.A. Shelstad, G.W. Crum. Charging of polar versus nonpolar liquids during brief exposure to ionic currents. *IEEE Trans. on Ind. Appl.*, IA-16(2):292, 1980.
- [22] U. Sievert. *Entwicklung Eines Unipolaren Aerosolaufilters mit Hoher Dynamik Zur Bestimmung der Partikelgrößenverteilung Am Strömenden Aerosol*. Doktorarbeit, Fachbereich Elektrotechnik, Gerhard-Mercator-Universität-Gesamthochschule Duisburg, 1998.
- [23] J. F. Hughes. *Electrostatic Particle Charging: Industrial and Health Care Application*. Research Studies Press LTD., 1997.
- [24] W.F. Schmidt. *Liquid State Electronics of Insulating Liquids*. CRC Press LLC, Boca Raton, Florida, 1997.
- [25] L.V. Lukin, B.S. Yakovlev. Electron photodetachement from O_2 in liquid hydrocarbons. *Chem. Phys. Lett.*, 42:307, 1976.
- [26] U. Sowoda, R.A. Holroyd. Laser photodetachement from O_2^- in non-polar liquids. *J. Chem. Phys.*, 70:3586, 1979.
- [27] A.A. Balakin, B.Z. Kunnarzarov, B.S. Yakovlev. Hydrated ions in nonpolar liquids. 1. oxygen ions in aqueous solutions of tetramethylsilane (auf Russisch). *Khim. Fiz.*, 12:82, 1993.
- [28] P. Stöckel. *Homogene Nukleation in levitierter Tröpfchen aus stark unterkühltem H₂O und D₂O*. Doktorarbeit, Fachbereich Chemie, Freie Universität Berlin, 2001.
- [29] C.L. Aardahl, R. Vehring, R. Weber, G. Schweiger, E.J. Davis, A. Wiedensohler. Electrodynamic trapping of aerocolloidal particles: Experimental and theoretical trapping limits. *J. of Colloidal and Interface Sci.*, 192:228–237, 1997.
- [30] H.O. Baehr, K. Stephan. *Wärme und Stoffübertragung*. Springer, Berlin, 1994.
- [31] J.C. van Miltenberg. Fitting the heat capacity of liquid n-alkanes: New measurements of n-heptadecane and n-octadecane. *Thermochim. Acta*, 343, 2000.

- [32] G. Mie. *Ann. d. Phys.*, 25:377, 1908.
- [33] C. F. Bohren, D. R. Huffmann. *Absorption and Scattering of Light by Small Particles* Wiley Interscience New York, 1983.
- [34] P.W. Barber, R.K. Chang. *Optical Effects Associated with Small Particles*. World Scientific, Singapore, 1988.
- [35] M. Kerker. *The scattering of light*, Academic Press, Oxford, 1969.
- [36] H. Vortisch. *Beobachtung Von Phasenübergängen in Einzeln Levitierten Schwefelsäuretropfen Mittels Raman-Spektroskopie und Elastischer Lichtstreuung*. Doktorarbeit, Fachbereich Physik, Freie Universität Berlin, 2002.
- [37] Bruylants, J. Timmermas. *Physico-Chemical Constants of Pure Organic Compounds*. Elsevier Publishing, New York, 1950.
- [38] R.T. Morrison, R.N. Boyd. *Lehrbuch der Organischen Chemie 2nd Ed.* Verlag Chemie, Weinheim, 1978.
- [39] D. Turnbull, R.L. Cormia. Kinetics of crystal nucleation in some normal alkane liquids. *J. Chem. Phys.*, 34:820, 1961.
- [40] A. Müller, K. Lonsdale. The low-temperature form of $C_{18}H_{38}$. *Acta Cryst.*, 1:129, 1948.
- [41] R.G. Snyder, M. Macroncelli, S.P. Qi, H.L. Strauss. Phase transitions and nonplanar conformers in crystalline n-alkanes. *Science*, 214:188, 1981.
- [42] J. Doucet, I. Denicolo, A. Craievich. X-ray study of the "Rotator" phase of the odd-numbered paraffins $C_{17}H_{36}$, $C_{19}H_{40}$, and $C_{21}H_{44}$. *J. Chem. Phys.*, 75(3):1523, 1981.
- [43] G. Ungar. Structure of rotator phases in n-alkanes. *J. Phys. Chem.*, 87:689–695, 1983.
- [44] B. Ewen, G.R. Strobl, D. Richter. Phase transitions in crystals of chain molecules. *Farad. Diss. Chem. Soc.*, 69:19, 1980.

- [45] A.J. Colussi, M.R. Hoffmann, Y. Tang. Conformational disorder binds n-alkanes into surface monolayers above the normal freezing point. *Langmuir*, 16(12):5213, 2000.
- [46] H. Stegemeyer *Liquid Crystals*. in Topics in Physical Chemistry Steinkopff, Darmstadt, 1994.
- [47] E.B. Sirota, A.B. Herhold. Transient phase-induced nucleation. *Science*, 283:529, 1999.
- [48] D.R. Uhlmann, G. Kritchevsky, R. Straff, G. Scherer. Crystal nucleation in normal alkane liquids. *J. Chem. Phys.*, 62(12):4896, 1975.
- [49] H. Kraack, E.B. Sirota, M. Deutsch. Measurements of homogeneous nucleation in normal-alkanes. *J. Chem. Phys.*, 112(15):6873, 2000.
- [50] A.M. Taggart, F. Voogt, G. Clydesdale, K.J. Roberts. An examination of the nucleation kinetics of n-alkanes in the homologous series $C_{13}H_{28}$ to $C_{32}H_{66}$ and their relationship to structural type, associated with crystallization from stagnant melts. *Langmuir*, 12:5722–5728, 1996.
- [51] R.L. Cormia, F.P. Price, D. Turnbull. Kinetics of crystal nucleation in polyethylene. *J. Chem. Phys.*, 37:1333, 1962.
- [52] J.C. Earnshaw, C.J. Hughes. Surface-induced phase transition in normal alkane fluids. *Phys. Rev. A*, 46(8):R4494, 1992.
- [53] X.Z. Wu, E.B. Sirota, S.K. Sinha, B.M. Ocko, M. Deutsch. Surface crystallization of liquid normal-alkanes. *Phys. Rev. Lett.*, 70(7):958, 1993.
- [54] A.V. Tkachenko, Y. Rabin. Fluctuation-Stabilized Surface Freezing of Chain Molecules. *Phys. Rev. Lett.*, 76(14):2527, 1996.
- [55] H. Kraack, M. Deutsch, E.B. Sirota. N-alkane homogeneous nucleation: Crossover to polymer behavior. *Macromolecules*, 33(16):6174–6184, 2000.
- [56] Pablo G. Debenedetti. *Metastable Liquids*. Princeton University Press, Princeton, New Jersey, 1996.

- [57] A. Laaksonen, V. Talanquer, D.W. Oxtoby. Nucleation: Measurements, Theory, and Atmospheric Applications *Annu. Rev. Phys. Chem.*, 46:489–524, 1995.
- [58] B. Krämer, M. Schwell, O. Hübner, H. Vortisch, T. Leisner, E. Rühl, H. Baumgärtel, L. Wöste. Homogeneous ice nucleation observed in single levitated micro droplets. *Ber. Bunsenges. Phys. Chem.*, 100:1911–1914, 1996.
- [59] R.S. Disselkamp, S.E. Anthony, A.J. Prenni, T.B. Onasch, M.A. Tolbert. Crystallization kinetics of nitric acid dihydrate aerosols. *J. Phys. Chem.*, 100:9127–9137, 1996.
- [60] G. Wedler. *Lehrbuch der Physikalischen Chemie*. VCH, Weinheim, 1985.
- [61] H.R. Pruppacher, J.D. Klett. *Microphysics of Clouds and Precipitation*. Kluwer Academic Publishers, 2nd edition, 1997.
- [62] J. Zeldovich. *Zh. Eksp. Theor. Fiz.*, 12:525, 1942.
- [63] D. Turnbull, J.C. Fischer. Rate of nucleation in condensed systems. *J. Chem. Phys.*, 17:71, 1949.
- [64] A.J. Heymsfield, L.M. Miloshevich. Homogeneous Ice Nucleation and Supercooled Liquid Water in Orographic Wave Clouds. *Journal of the Atmospheric Sciences*, 50:2335, 1993.
- [65] B.P. Luo, Th. Peter, P.J. Crutzen. Maximum supercooling of H_2SO_4 acid aerosol droplets. *Ber. Bunsenges. Phys. Chem.*, 96:334, 1992.
- [66] Th. Koop, B. Luo, U.M. Biermann, P.J. Crutzen, Th. Peter. Freezing of $HNO_3/H_2SO_4/H_2O$ solutions at stratospheric temperatures: Nucleation statistics and experiments. *J. Phys. Chem.*, 101:1117–1133, 1997.
- [67] H. Vortisch. Laboruntersuchungen zum Gefrierverhalten des stratosphärischen Schwefelsäure-aerosols. Diplomarbeit, Fachbereich Physik, Freie Universität Berlin, 1998.
- [68] L.R. Williams, F.S. Long. Viscosity of supercooled sulfuric acid solutions. *J. Phys. Chem.*, 99:3748–3751, 1995.

- [69] M. Avrami. Kinetics of phase change. *J. Phys. Chem.*, 7:1103, 1939.
- [70] M. Avrami. Kinetics of phase change II. *J. Phys. Chem.*, 8:212, 1940.
- [71] M. Avrami. Kinetics of phase change III. *J. Phys. Chem.*, 9:177, 1941.
- [72] T. Wandlowski. *Encyclopedia of Electrochemistry*. VCH Wiley, Weinheim, 2002.
- [73] C. Donner. Zweidimensionale Nukleations- und Wachstumsprozesse in elektrochemischen Systemen. Habilitationsschrift, Fachbereich Chemie, Freie Universität Berlin, 2003.
- [74] N.A. Dubrovich, V.L. Kuz'min, Y.A. Dovgalyuk. Effect of the surface charge of droplets on the nucleation rate of ice. *Izvestiya*, 26:462, 1990.
- [75] C. Buess-Herman. in *Adsorption of Molecules at Metal Electrodes* (Ed. J. Lipowsky, P.N. Ross. VCH, Weinheim, 1992
- [76] M.J. Oliver, P.D. Calvert. Homogeneous nucleation of n-alkanes measured by differential scanning calorimetry. *J. Cryst. Growth*, 30:343–351, 1975.
- [77] R.C. Reid, J.M. Prausnitz, B.E. Poling. *The Properties of Gases and Liquids*. McGraw Hill, Boston, 4th edition, 1987.
- [78] D. Van Velzen, R.L. Cardozo, H. Langenkamp. Liquid viscosity and chemical constitution of organic compounds: A new correlation and a compilation of literature data. *Euratom, Joint Nuclear Research Centre, Ispra Establishment Italy*, page 4735e, 1972.
- [79] B. Wunderlich, T. Arakawa. Polyethylene crystallized from the melt under elevated pressure. *J. Polymer Sci. A*, 2:3697, 1964.
- [80] W.H. Press, S.A. Teukolsky, W.T. Vetterling, B.P. Flannery. *Numerical Recipes in C. The Art of Scientific Computing 2nd. Ed.* Cambridge University Press, Cambridge, 1995.
- [81] C. Donner, St. Kirste, L. Pohlmann, H. Baumgärtel. Inverted current-time transients. A new method for the determination of the potential of maximum adsorption in condensed layers. *Langmuir*, 14(24):6999, 1998.