

References

- 1 BENTLEY, A. P., and von MOLTKE, T., IMMRI Report No. 25, 30th October 2001, not published.
- 2 STUMPF, W., "Grain size modelling of a low carbon steel during hot rolling in a Compact Strip Production (CSP) plant using the Hot Charge Route", The Journal of The South African Institute of Mining and Metallurgy, 2003, Vol. 103, pp. 617-631.
- 3 MUOJEKWA, C. A., JIN, D. Q., SAMARASEKERA, I. V., and BRIMCOMBE, J. K., "Thermomechanical History of Steel Strip during Hot Rolling-A Comparison of Conventional Cold Charge Rolling and Hot Charge Rolling of Thin Slabs", 37th MWSP Conference Proceedings, ISS, 1996, Vol. XXXIII, pp. 617-631.
- 4 STUMPF, W. E., "Hot work modelling of two equivalent low carbon strip steels produced respectively by the Cold Charge Route and by Hot Charge Route" to be published.
- 5 BARDES, B. P., ed. Properties and Selection: Iron and Steels, Metals Handbook Ninth Edition, Vol. 1, (1978), pp.153.
- 6 BLICKWEDE, D. J., Trans. A.S.M., Vol. 61, (1968), pp. 653.
- 7 DUCKWORTH, W. E. and BAIRD, J. D., J. Iron Steel Inst., Vol. 207, (1969), pp. 861.
- 8 MEYZAUD, Y. and PARNIERE, P., Mémoires Scientifiques Rev. Mét., Vol. 71, (1974), pp. 423.
- 9 ZOLOTEREVSKY, N. Y., PLETENEV, V.P. and TITOVETS, Y. F., "Analysis of aluminium nitride precipitation proceeding concurrently with recrystallisation in low carbon steel",

References

- Modelling and Simulation Materials Science Engineering, Vol. 6, (1998), pp. 383 – 391.
- 10 HUTCHINSON, W. B., "Development and control of annealing texture in low carbon steels", International metals Review, Vol. 29, No. 1, (1984), pp.25 - 41.
- 11 WILSON, F. G. and GLADMAN, T., International Materials Review, Vol. 33, (1988) pp. 221.
- 12 ESHELBY, J. D., Proc. Roy. Soc., Vol. A241, (1957), pp. 376; Prog. in Solid Mechanics, Vol. 2, (1961), pp. 89.
- 13 RUSSELL, K. C., in "Phase Transformations", ASM, (1970), pp. 219
- 14 DIETER, G. E., "Mechanical Metallurgy", New York, McGraw Hill Book Co., (1976).
- 15 NABARRO, F. R. N., Proc. Roy. Soc., Vol. A175, (1940), pp. 519
- 16 LeGOUES, F. K., AARONSON, H. I. and LE, Y. W., Acta Met. Vol. 32, (1984), pp. 1854
- 17 LeGOUES, F. K., AARONSON, H. I. and LE, Y. W., Acta Met. Vol. 32, (1984), pp. 1857
- 18 LeGOUES, F. K., AARONSON, H. I. and LE, Y. W. and FIX, G. J., Proc. Inter. Conf. on "Solid-solid Phase Transformations" Ed. AARONSON et al, Met Soc. AIME, Warrendale PA, (1983), pp. 427.
- 19 MATTHEWS, J. W., "Dislocations in Solids", Ed. NABARRO, F. R. N., Publ. North-Holland Co., Amsterdam, (1979), pp. 463.
- 20 SHIFLET, G. J., materials Science and Engineering, Vol. 81, (1986), pp. 61.

References

- 21 LARCHÉ, F. C., "Dislocations in Solids", Ed. NABARRO, F. R. N., Publ. North-Holland Co., Amsterdam, (1978), pp. 135; and in "Solid State Phenomena", Vol. 35 – 36, (1994), pp. 173.
- 22 CAHN, J. W., Acta Met. Vol. 5, (1957), pp. 169.
- 23 LYUBOC, B. Ya and SOLV'YEV, V. A., Fizika, Metall. Vol. 19, (1965), pp. 333.
- 24 DOLLINS, C. C., Acta Met. Vol. 18, (1970), pp. 1209.
- 25 BARNETT, D. M., Scripta Met., Vol. 5, (1971), pp. 261.
- 26 AARONSON, H. I. and LeGOUES, F. K., Met Trans. Vol. 23A, (1992), pp. 1915.
- 27 TURNBULL, D., J. Chem. Vol. 20 (1952), pp. 411, ibidi, 1956, Solid State Physics, Vol. 3 (Academic Press, New York) pp. 282.
- 28 LOTHE, J., and POUND, G. M., J. Phys. Vol. 36, (1962) pp. 2080.
- 29 WERT, C. A. and ZENER, C., Journal of Applied Physics, Vol. 21, (1950) pp. 5 and Journal Phys. Chem. Solids Vol. 6, (1958), pp. 335.
- 30 LIFSHITZ, I, M. and SLYOSOV, V.V., Journal of Phys. Chem. Solids, Vol. 19, (1961), pp. 35.
- 31 WAGNER, C., Zeitschrift für Elektrochem., Vol. 65, (1961), pp. 581.
- 32 HILLERT, M, Jernkorntorets Ann. Vol. 141, (1957), pp. 757.
- 33 AARON, H. B. and KOTLER, G., "Second Phase Dissolution", Metallurgical Transactions, Vol. 2, (1971), pp. 393 – 408.
- 34 WHELAN, M. J., Metal Science Journal, Vol. 3, (1969), pp. 95.

References

- 35 JEFFREY, G. A. and WU. V. Y., *Acta Crystallography*, Vol. 16, (1963), pp. 559 – 566.
- 36 HANSEN, M. and ANDERKO, "Constitution of Binary Alloys", 2nd edition, (1958), pp. 116, New York, McGraw-Hill.
- 37 KANG, Y., HAO, Y., JIE, F., WANG, K. and WANG, Z., "Morphology and precipitation kinetics of AlN in hot strip low carbon steel produced by compact strip production", *Materials Science and Engineering A351* (2003), pp. 265 – 271.
- 38 SENNOUR, M. and ESNOUF, C., "Contribution of advanced microscopy techniques to nano-precipitates characterization: case of AlN precipitation in low carbon steels", *Acta Materialia*, Vol. 51, No. 4, (2003), pp. 943 – 957.
- 39 WEVER, F., KOCH, K., ILSCHNER-GENCH, C. and ROHDE, H.: *Forsch. Wirts. Nordrhein-Westfalen*, Vol. 409, (1957) pp. 1 – 6.
- 40 NISHIZAWA, T. "Thermodynamics of microstructure control by particle dispersion" *ISIJ International*, Vol. 40, (2000), pp. 1269 – 1274.
- 41 DARKEN, L. S., SMITH, R.P., and FILER, E. W., *Trans. AIME*, Vol. 191, (1951) pp. 1174.
- 42 LESLIE, W. C., RICKETT, R. L., DOTSON, C. L., and WATSON C. S., *Trans. ASM*, Vol. 46, (1954) pp. 1470 – 1497.
- 43 SHIMOSE, T. and NARITA, K., *Tetsu-to-Hagané* (J. Iron Steel Institute of Japan), 1954, Vol. 40, pp. 242 – 243.
- 44 KONIG, P., SCHOLZ, W. and ULMER, H., *Arch. Eisenhüttenwes.*, Vol. 32, 8, (1961), pp. 541 – 550.

References

- 45 ERASMUS, L. A., J. Iron Steel Inst., 202, (1964), pp. 32 – 41.
- 46 GALDMAN, T. and PICKERING, F. B., J. Iron Steel Inst., Vol. 205 (1967) pp. 635 – 664.
- 47 MARYHOFER, M., Berg. Hüttenmänn Monatsh., vol. 120 (7), (1975), pp. 312 – 321 (BISI 13768).
- 48 HONER, K. E. and BALIKTAY, S.: in Proc. 44th Int. Foundry Cong. Florence, (1977) Paper 11, (BISI 26033).
- 49 CHENG, L. M., : PhD. Thesis, University of British Columbia, Vancouver, (1999).
- 50 YU, H., KANG, Y. L., DONG, H. B., LIU, D. L. and FU, J., Acta Metallurgica Sinica 15, (2002) pp. 375.
- 51 HILLERT, M and JONSSON, S., “An assessment of the Al-Fe-N system”, Metallurgical Transactions A, Vol. 23A, (1992), pp. 3141 – 3149.
- 52 USHIODA, H., SUZUKI, H. G., KOMATSU, H. and ESAKA, K., “Influence of sulphur on AlN precipitation during cooling after solidification and resulting hot shortness in low carbon steel”, Nihon Kinzoku Gakkai shi, J. Japan Inst. Metals, Vol. 59, No. 4 (1995), pp. 373 – 380.
- 53 BEEGHLY, H. F., Anal. Chem., Vol. 21, No. 12, (1949) pp. 1513 – 1519.
- 54 VIGNES, A., PHILEBERT, J., BADIA, M. and LAVASSEUR, J., Proc. 2nd Natl. Conf. Microprobe Analysis, Boston, 1967, Paper 20.
- 55 FAST, J. D., Interaction of Metals and Gases, London, Publ. MacMillan New York, (1976), pp. 221.

References

- 56 KOZESCHNIK, E.: PhD. Thesis, Technical University Graz, Graz, (1997).
- 57 DUTTA, B., VALDERS, E. J. and SELLARS, C. M., *Acta Metall. Mater.* Vol. 40, (1992) pp. 653.
- 58 DUTTA, B., PALMIERE, E. J. and SELLARS, C. M., *Acta Mater.* Vol. 49, (2001) pp. 785.
- 59 TULING, A. S. and BANKS, K. M., "A TEM study of precipitation of AlN during roughing of low carbon-boron steel" IMMRI, University of Pretoria, not published.
- 60 ENGL, B. and DREWES, E. J., *Technology of Continuously Annealed Cold Rolled Sheet Steel*, PRADHAN, R., ed. "On the roll of solute nitrogen on short time annealing of sheets", *Proc. Symp.*, The Metallurgy Society of AIME, Michigan, (1984), pp. 123 – 138.
- 61 KIESSLING, R. and LANGE, N., ISI Publication No. 100 (1966).
- 62 MEHMED, F and HARALDSEN, H, *Das magnetische Verhalten der allotropen modifikationen des mangan(II)-sulfids*, *Z. anorg. Chem.* Vol. 235, (1938), pp. 193 – 200.
- 63 BAKER, T. J. and CHARLES, J. A., *JISI*, (1972) pp. 210, 702.
- 64 OIKAWA, K., OHUCHI, Y. and ISHIDA, K., "Effect of Ti and Al addition on the distribution of MnS inclusion in steel during solidification" *THERMEC'97, Inter. Conf. Thermomechanical Processing of Steels and Other Materials*, Vol. 1, Ed. CHANDRA, T. and SAKAI, T., pp. 859.
- 65 TURKDOGAN, E. T., IGNOTOWICZ, S and PEARSON, J., *JISI*, Vol. 180, (1955), pp. 349 – 354.

References

- 66 LESLIE, W. C., RICKETT, R. L., DOTSON, C. L., and WATSON C. S., *Trans. ASM*, Vol. 46, (1954) pp. 1470 – 1497.
- 67 GARBARZ, B., MARCISZ, J. and WAJTAS, J., “TEM analysis of fine sulphides dissolution and precipitation in steel” *Materials Chemistry and Physics*, Vol. 81 (2003) pp. 486 – 489.
- 68 FRAWLEY, L. D., PRIESTNER, R. and HODGSON, P. D., “Effect of Sulphur in Thin Slab Direct rolled Mild Steel”, *THERMEC’97, Inter. Conf. Thermomechanical Processing of Steels and Other Materials*, Vol. 1, Ed. CHANDRA, T. and SAKAI, T., pp. 2,169 – 2,175.
- 69 CHENG, W. C., JAW, J. H. and WANG, C. J., “A study of aluminium nitride in a Fe-Mn-Al-C alloy” *Acta Materialia*, Vol. 51, (2004), pp. 279 – 283.
- 70 MASSARDIER, V., VORON, L., ESNOUF, C. and MERLIN, J., “Identification of the nitrides formed during the annealing of low carbon low-aluminium steel”, *Journal of Material Science*, Vol. 36, (2001), pp. 1363 – 1371.
- 71 YU, H., KANG, Y., ZHAO, Z. and SUN, H., “Morphology and precipitation kinetics of MnS in low carbon steel during thin slab continuous casting process”, *Journal of Iron and Steel Research International*, Vol. 13 No. 5, (2006) pp. 30 – 36.
- 72 MADARIAGA, I. and GUTIERREZ, I., “Acicular ferrite microstructures and mechanical properties in a medium carbon forging steel”, *Material Science Forum*, Vols. 284 – 286, (1998), pp. 419 – 426.
- 73 BRAMFITT, B. L., *Met. Transactions*, Vol. 1, (1970), pp. 1987 – 1995.

References

- 74 LIU, Z, KABAYASHI, Y. and NAGAI, K., "Crystallography and precipitation kinetics of copper sulphide in strip casting low carbon steel", *ISIJ International*, Vol. 44, (2004), pp. 1560 – 1567.
- 75 TITCHENER, A. L. and BEVER, M. B., *Prog. Met. Phys.* Vol. 7, (1958) pp. 247.
- 76 BEVER, M. B., HOLT, D. L. and TITCHENER, A. L., *Pror. in Material Science*, Vol. 17, (1973), pp. 1.
- 77 HAESSNER, F., Ed. *Recrystallisation of Metallic Materials*, 2nd edition, Publ. Reider-Verlag, Stuttgart, (1978).
- 78 DOHERTY, R. D., HUGHES, D. A., HUMPHREYS, F. Y., JONAS, J. J., JUNSEN, D. J., KASSNER, M. E., KING, W. E., McNELLEY, T. R., McQUEEN, H. J. and ROLLETT, A. D., "Current issues in recrystallisation: a review", *Materials Science and Engineering A238*, (1997), pp. 219 – 274.
- 79 CLAREBROUGH, L. M, HARGREAVES, M. E. and LORETTO, M. H., *Proc. Roy. Soc. A232* (1955) pp. 252.
- 80 EGGLESTON, R. R., *J. Appl. Phys.* Vol. 23 (1952) pp. 1400.
- 81 LUTTS, A. H. and BECK, P. A., *Trans. AIME*, Vol. 200, (1954) pp. 257.
- 82 DROUARD, R., WASHBURN, J. and PARKER, E. R., *Trans. AIME*, Vol. 197 (1953) pp. 1226.
- 83 KUHLMANN, D., *Z. Phys.* Vol. 24, (1948) pp. 468.
- 84 LI, J. C. M., in *Recrystallisation, Grain Growth and Textures*, ed. MORGOLIN, ASM, Metals Park, Ohio, (1966) pp. 45.
- 85 KOLMOGOROV, A. N., *Akad. Nauk. SSSR, IZV. Ser. Mat.*, Vol. 1, (1937), pp. 335.

References

- 86 JOHNSON, W. A., and MEHL, R. F., Trans., AIME, Vol. 135, (1939), pp. 416.
- 87 AVRAMI, M., J. Chem. Phys. Vol. 7, (1939), pp. 103; *ibid*, Vol. 8, (1940), pp. 212; *ibid*, Vol. 9, (1941), pp. 177.
- 88 VANDERMEER, R. A. and GORDON, P., in Recovery and Recrystallisation of Metals, ed. HIMMEL, L., Interscience, New York, (1963) pp. 211.
- 89 PRICE, C. W., "Use of the Kolmogorov-Johnson-Mehl-Avrami kinetics in the recrystallisation of metals and crystallisation of metallic glasses", Acta Metall. Mater. Vol. 38, No. 5, (1990) pp. 727 – 738.
- 90 FURU, T., MARTHINSEN, K. and NES, E., "Modelling recrystallisation," Materials Science and Technology, Vol. 6, (1990) pp. 1093 – 1102.
- 91 BURKE, J. E. and TURNBULL, D., Prog. Met. Phys. Vol. 3, (1952) pp. 220.
- 92 LESLIE, W. C., MICHALAK, J. T and AUL, F. W., "Iron and its dilute solutions," Ed Spencer et al, Publ. Interscience NY (1963) pp. 119.
- 93 HUMPHREYS, F. J., "Nucleation in Recrystallisation," Materials Science Forum, Vols. 467 – 470 (2004) pp. 107 – 116.
- 94 BAILEY, J. E., Phil. Mag. Vol. 5 (1960) pp. 833.
- 95 CAHN, R. W., in: Recrystallisation, Grain Growth and Textures, ed. Margolin, H. ASM, Metals Park, Ohio, (1966) pp. 99.
- 96 CHARMERS, B., Principles of Solidification, John Wiley and Sons, New York, (1964) pp.20.

References

- 97 BYRNE, J. G., "Recovery, Recrystallisation and Grain Growth", Publ. McMillan NY (1965) pp.74.
- 98 GOTTSTEIN, G. and SHVINDLERMAN, L. S., Scripta Metall. 27, (1992) pp. 1515.
- 99 BECK, P. A. and SPERRY. P. R., Journ. Appl. Physics: Vol. 21_(1950) pp. 150.
- 100 BAILEY, J. E. and HIRSCH, P. B., Proc. Roy. Soc. A267 (1962) pp. 11.
- 101 BECK, P. A., Adv Physics: Vol. 3 (1954) pp. 245.
- 102 LI, J. C. M., Journal of Applied Physics, Vol. 33, (1962), pp. 2968.
- 103 HU, H., Recovery and Recrystallisation of Metals, AIME, HIMMEL, L., ed. (1962), pp. 311.
- 104 WALTER, J. L. and KOCH, E. F., Acta Met. Vol. 11, (1963), pp. 923.
- 105 WALTER, J. L. and KOCH, E. F., Acta Met. Vol. 11, (1963), pp. 999.
- 106 SMITH, C. J. E. and DILLAMORE, I. L., Metal Science, Vol. 4 (1970) pp. 161.
- 107 ANDERSON, W. A., and MEHL, R. F., Trans. AIME, Vol. 161, (1945), pp. 140.
- 108 HUTCHINSON, B., JOHNSON, S. and HYDE, L., Scripta Met., Vol. 23, (1989), pp. 671.
- 109 KÖSTER, U., "Recrystallisation involving the second phase", Metal Science, Vol. 8, (1974), pp. 151 – 160.
- 110 HORNBOGEN, E. and KÖSTER, U., "Recrystallisation of Metallic Materials", Ed. HASSNER, F., Publ. Reider Verlag, Stuttgart, (1978), pp. 159 (Review).

References

- 111 KÖSTER, U. and HORNBOGEN, E., Z. f. Metallkunde, Vol. 59, (1968), pp. 792.
- 112 KREYE, H. and HORNBOGEN, E., Praktische Metallograpie, Vol. 9, (1970), pp. 349.
- 113 ZENER, C. and quoted in GLEITER, H. and CHALMERS, B., "High Angle Grain Boundaries", Publ. Pergamon Press, Oxford, (1972).
- 114 DIMITROV, O., FRAMAGEAU, R and DIMITROV, C, "Recrystallisation of Metallic Materials" Ed. HAESSNER, F, Publ. Riederer Verlag, Stuttgart (1971) pp. 183.
- 115 FROIS, C. and DIMITROV, O., Ann. Chim. Paris, Vol. 1 (1966) pp. 113.
- 116 LESLIE, W. C., MICHALAK, J. J. KEH, A. S. and SOBER, J., Trans ASM Vol. 58 (1965) pp. 672.
- 117 STÜWE, H. P., PADILHA, A. F. and SILICIANO, F., Matls. Science and Eng. A333 (2002) pp. 361.
- 118 GOODENOW, R. H., "Recrystallisation and grain structure in rimmed and Al-killed low carbon steels" Trans. ASM, Vol. 59, (1966), pp. 804 – 823.
- 119 JOLLEY, W. and WITMER, D. A., in "Recovery, Recrystallisation and Grain Growth Structures in Iron and Steel" Metals Handbook, 8th Ed. Metallography, Structures and Phase Diagrams, pp. 225 – 228.
- 120 BAIRD, J. D. and ARROWSMITH, J. M., "Recrystallisation behaviour of some high-purity irons", J. Iron and Steel Inst., March 1966, pp. 240 -247.
- 121 MICHALAK, J. T. and SCHOONE, R. D., "Recrystallisation and texture development in a low carbon, Al-killed steel" Tran.

References

- Metallurgy Society of AIME, Vol. 242, (1968), pp. 1149 – 1160.
- 122 USHIODA, K., SUZUKI, T., ASANO, H and TEZUKA, M., “Influence of Mn content and precipitates on recrystallisation texture formation in cold rolled sheet steels”, 37th MWSP Conf. Proc., ISS, Vol. XXXIII, (1996) pp. 897 – 905.
- 123 OGAWA, R., FUKUTUSKA, T. and YAGI, Y., “Precipitation behaviour of AlN in cold worked high purity Fe-Al-N alloy”, Trans. Iron and Steel Inst. Japan, Vol. 12, (1972), pp. 291 – 297.
- 124 KOZESCHNIK, E., PLETENEV, V., ZOLOTOREVSKY, N. and BUCHMAYR, B., “Aluminium Nitride Precipitation and Texture Development in Batch-Annealed Bake-Hardened Steel” Metallurgical and Materials Transaction A, Vol. 30A, (1999) pp. 1663 – 1673.
- 125 BAIRD, J. D., “Strain aging of steel – a critical review”, Iron & Steel, (May, 1963) pp. 186 – 192.
- 126 MORRISON, W. B., “Nitrogen in the steel product”, Ironmaking and Steelmaking, Vol. 16, No. 2, (1989) pp. 123 – 128.
- 127 MOULD, P. R.: in “Metallurgy of continuous annealed sheet steel”, (ed. BRAMFITT, B. L. and MANGONON, P. L.), (1982), pp. 3 – 33, Warrendale, PA, Metallurgical Society of AIME.
- 128 SNOEK, J. L., Physica, s’Grav. 8 (1941) pp. 711
- 129 LESLIE, W. C., “The Physical Metallurgy of Steels”, (1981) pp. 73.

References

- 130 BLATT, F. J., SHROEDER, P. A., FOILES, C. L. and GREIG, D. Thermoelectric Power of Metals, Publ. Plenum Press, New York and London.
- 131 BLATT, F. J., Proc. Phys. Soc., (1964), 83, pp. 1065.
- 132 BORRELLY, R., MERLE, P. and ADENIS, D., Light Met., (1989) pp. 703 – 712.
- 133 ROBERTS, R. and CRISP, R. S., Phil. Mag., (1977), Vol. 36, pp. 81- 89.
- 134 RAYNE, J. A. and CHANDRASEKHAR, B. S. "Elastic Constants of Iron from 4.2 to 300 K" Physical Rev. Vol. 122, No. 6 (1961), pp. 1714 – 1716.
- 135 NORDHEIM, L. and GORTER, C. J. (1935) Physica 2, 383.
- 136 BORRELLY, R. and BENKIRAT, D., Acta Metall., Vol. 33, No. 5, (1985), pp. 855 – 866.
- 137 BARRACLOUGH, D. R. and SELLARS, C. M., Metal Science, Vol. 13, (1979) pp. 257 – 267.
- 138 CLAREBROUGH, L. M., HARGREAVES, M. E. and LORETTO, M. H., Proc. Roy. Soc., A232 (1955) pp.252.
- 139 LUTTS, A. H. and BECK, P. A., Trans. AIME, Vol. 200, (1954), pp. 257.
- 140 MAGEE, K., MUKUNTHAN, K. and HAWBOLT, E. B., "The application of isothermal recrystallisation kinetics to continuous heating process", Recrystallisation '90, (ed. CHANDRA, T.), The Minerals, Metals & Materials Society, 1990.
- 141 HILLIARD, J. E., "Measurement of Volume in Volume", Quantitative Microscopy, DeHoff, R. T. and Rhines, F. N, eds. Publ. McGraw-Hill, (1968), pp. 45 – 76.

References

- 142 HAEßNER, F. and SCHÖNBORN, K. H., "Untersuchung der rekristallisationskinetik in hochverformtem Kupfer und Silber mit Hilfer isothermer und an-isothermer kalorischer messungen", Z. Metallkde., Vol. 76 (1985), pp. 198 -207.
- 143 HAEßNER, F., "The study of recrystallisation by calorimetric methods", Recrystallisation'90, CHANDRA, T., ed. The Minerals, Metals & Materials Society, (1990), pp. 511 – 516.
- 144 BRAHMI, A. and BORRELLY, R., "Study of aluminium nitride precipitation in pure alloy by thermoelectric power measurements", Acta Mater. Vol. 45, No. 5, (1997), pp. 1889 - 1897.
- 145 FAST, J. D. and VERRIJP, M. B., J. Iron Steel Inst., 180 (1955) pp. 337
- 146 MERLIN, J., MERLE, P., GARNIER, S., BOUZEKRI, M. and SOLER, M., "Experimental Determination of the carbon solubility limit in ferritic steels", Metallurgical and Materials Transactions A, Vol. 33A, (2004), pp. 1655 – 1161.
- 147 BORRELLY, R. and BENKIRAT, D., Acta Metall. Vol. 33, (1985), pp. 855 – 866.
- 148 BIRON, I. BORRELLY, R., DELANUAE, P. and THOMAS, P. J., "Application of the thermoelectric power measurements to control aluminium nitride precipitation in low carbon steels", Mém. Sci. Rev. Mét., Vol. 11, (1991), pp. 725 – 733.
- 149 GERMAZ, M., ARYOUNI, M. and MOSSER, A., Surf. Sci. Lett., Vol. 227, No. 1-2, (1990), pp. L109 – L111.
- 150 OGAWA, R., FUKUTSUKA, T. and YAGI, Y., Trans. ISIJ, Vol. 12, (1972), pp. 291.

References

- 151 HOWE, J. M., Interfaces in Materials: atomic structure, thermodynamics and kinetics of solid-vapour, solid-liquid and solid-solid interfaces, John Wiley & Sons, Inc., New York, (1997), pp. 378.
- 152 WAGNER J. M. and BECHSTEDT, F., "Properties of strained GaN and AlN: *Ab initio* studies", Physical Review B 66, 115202, (2002), pp. 1 – 20.
- 153 WYCOFF, R. W. G., International Tables for Crystallography, Kynock Press, Birmingham, (1952-1962).
- 154 CHRISTIAN, J. W., in "Phase Transformation", Physical Metallurgy, CAHN, R. W., Ed. Publ. North-Holland Co., Amsterdam-London, (1970), pp. 486
- 155 MATHIESEN, H., in "Computer simulation of microstructural evolution", ASM Symp. Toronto, Canada, Oct. (1985), pp. 189 – 199, Warrendale, PA, Metallurgical Society of AIME.
- 156 MESSENGER, C and DIMITROV, O., Comptes Rendus, Acad., Sc., Vol. 251, (1960), pp. 88.
- 157 GLADMAN, T., The Physical Metallurgy of Microalloyed Steels, Institute of Materials, London, (2002), pp. 312.
- 158 FURUHARA, T., YAMAGUCHI, K., SUGITA, N. MIYAMOTO, G. and MAKI, T., ISIJ Int., Vol. 43(2003) pp. 1630.
- 159 SHIMAZU, T., CHIKUMA, K., SAKAI, T. and TANINO, M.: Tetsu-to-Hagane, Vol. 70, (1984) S568.
- 160 LIU, Z., KOBAYASHI, Y. and NAGAI, K., "Crystallography and precipitation kinetics of copper sulphide in strip casting low carbon steels", ISIJ Inter., Vol. 44, (2004), pp. 1560 – 1567.

References

- 161 BAIRD, J. D. and ARROWSMITH, J. M., "Recrystallisation behaviour of some high-purity irons", *J. Iron and Steel Inst.*, (1966), pp. 240 – 247.
- 162 DE SOUZA, T. O. and BUONO, V. T. L., "Optimization of the strain aging resistance in aluminium killed steels produced by continuous annealing", *Materials Science and Engineering A354*, (2003), pp. 212 – 216.
- 163 MIZUI, N. and OKAMOTO, A., *Proc. Conf. on Development in the Annealing of Sheet Steels*, Cincinnati, OH, (1992), The Minerals, Metals and Materials Society, Warrendale, PA, (199), pp. 247 – 259.
- 164 CORTI, C. W., COTTERILL, P. and FITZPARTICK, G., *Int. Met. Rev.*, Vol. 19, (1974), pp. 77 – 88.
- 165 HUMPHREYS, F. J. and HEATHERLY, M., "Recrystallisation and related annealing phenomena", Elsevier Science, Oxford, UK, (1995).
- 166 CHAN, H. M. and HUMPHREYS, F. J., *Acta Metall.*, Vol. 32, (1984), pp. 235.
- 167 LESLIE, W. C., MICHALAK, J. T. and AUL, F. W., "Iron and its dilute solutions", Ed. SPENCER, C. N. et al, *Publ. Inetrscience NY*, (1963), pp. 119.

Appendix

Item	Approximate analysis [wt%], N in ppm							Method	Temperature range [°C]	Log[Al][N]	Ref.
	C	Si	Mn	Cr	Ni	Al	N				
A	0.1	0.01	0.4			0.144		Sieverts: 5-65h	1050 - 1350	$1.95 - \frac{7400}{T}$	41
B	0.05	0.008	0.35	0.02	0.03	0.02-0.08	5-88	Beeghly	810 - 1260	$1.03 - \frac{6770}{T}$	42
C	Fe-Al-N							Beeghly	800 - 1300	$1.79 - \frac{7184}{T}$	43
D	0.2	0.5	1.5			0.05	240	Beeghly	900 - 1350	$1.8 - \frac{7750}{T}$	44
E	0.2	0.15	0.5	0.02	0.02	0-0.084	0-60	Beeghly	900 - 1200	$0.75 - \frac{6180}{T}$	45
F	0.17	0.2	0.4	1	3.4	0-0.216	70	Beeghly	900 - 1200	$0.309 - \frac{6015}{T}$	45
G	0.1	0.24	0.8			0.023-0.15	40-140	Beeghly	950 - 1350	$1.48 - \frac{7500}{T}$	46
H	0.06		0.24			0.035-0.137	60	Beeghly	800 - 1250	$2.4(wt\%Al) + 0.18 - \frac{5675}{T}$	47
K	Pure Fe					0.02-0.05	50-200	Beeghly	850 - 1350	$3.577 - \frac{10020}{T}$	48
L	0.4	0.45	0.8	1.3	1.5	0.03-0.04	250	Beeghly	850 - 1300	$3.079 - \frac{9295}{T}$	48
M								Thermodynamic data		$4.5989 - \frac{11568}{T}$	49
N								Thermodynamic data		$6.4 - \frac{14356}{T}$	50
O								Thermodynamic data		$4.382 - \frac{11085}{T}$	51
P	0.036-0.039		0.30			0.052-0.065	37-41	Beeghly	900 - 1350	$1.21 - \frac{6690}{T}$	52