

melting point results in a break-up and spheroidization of the iron rods together with diffusion of iron to the surface and grain boundaries of specimens. The driving force for these processes is a tendency by the system to minimize its interfacial energy. The spheroidizing of iron rods as a means of decreasing the interfacial energy, is aided by the absence of preferred crystallographic orientations. The eutectic is considerably more thermally unstable than both the Al-CuAl₂ and Al-Al₃Ni eutectic possibly because of:

- a) its higher interfacial energy, and
- b) the higher heat treatment temperatures used.

The stability of the eutectic structures was found to be a function of:

- a) time and temperature of heat treatment,
- b) interrod spacings, and
- c) oxygen content of the alloys.

Point a) affects the diffusion characteristics of the system, whereas b) and c) affect the initial interfacial energy of the system.

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REFERENCES

1. R. W. Kraft, D. L. Albright and J. A. Ford: *Trans. TMS-AIME*, 1963, vol. 227, pp. 540-42.
2. L. D. Graham and R. W. Kraft: *Trans. TMS-AIME*, 1966, vol. 236, pp. 92-102.

3. B. J. Bayles, J. A. Ford, and M. J. Salkind: *Trans. TMS-AIME*, 1967, vol. 239, pp. 844-49.
4. M. Salkind, G. Leverant, and F. George: *J. Inst. Metals*, 1967, vol. 95, pp. 349-51.
5. D. Jaffrey: Ph.D. Thesis, Cambridge University, 1968.
6. R. W. Kraft: *Trans. TMS-AIME*, 1961, vol. 221, pp. 704-11.
7. R. W. Kraft: *Trans. TMS-AIME*, 1962, vol. 224, pp. 65-75.
8. R. W. Kraft and D. L. Albright: *Trans. TMS-AIME*, 1962, vol. 224, pp. 1176-84.
9. I. G. Davies and A. Hellawell: *Phil. Mag.*, 1969, vol. 19, pp. 1285-1303.
10. F. D. Lemkey, R. W. Hertzberg, and J. A. Ford: *Trans. TMS-AIME*, 1965, vol. 233, pp. 334-41.
11. W. K. Tice, W. R. Lasko, and F. D. Lemkey: *Am. Soc. Testing Mater., Spec. Tech. Publ. no. 430*, 1968, pp. 239-49.
12. M. Jaffrey, F. George and W. Tice: *Trans. TMS-AIME*, 1969, vol. 245, pp. 2339-45.
13. D. J. S. Cooksey, D. Munson, M. P. Wilkinson, and A. Hellawell: *Phil. Mag.*, 1964, vol. 10, pp. 745-69.
14. D. Jaffrey and G. A. Chadwick: *Trans. TMS-AIME*, 1969, vol. 245, pp. 2435-39.
15. D. Jaffrey and G. A. Chadwick: BHP Melbourne Research Laboratories, Australia, and Cambridge University, England, unpublished research, 1970.
16. S. Marich: Ph.D. Thesis, Wollongong University College, 1969.
17. S. Marich and G. Brinson: *J. Australian Inst. Metals*, 1969, vol. 14, pp. 283-91.
18. D. L. Albright and R. W. Kraft: *Trans. TMS-AIME*, 1966, vol. 236, pp. 998-1003.
19. M. Hansen: *Constitution of Binary Alloys*, p. 704, McGraw-Hill Book Co., London, 1958.
20. D. R. Spalding, R. E. Villagrana, and G. A. Chadwick: *Phil. Mag.*, 1969, vol. 20, pp. 471-88.
21. E. D. Hondros and D. McLean: S.C.I. Monograph No. 28, 1968.
22. W. A. Tiller: *Liquid Metals and Solidification*, pp. 276-318, American Society for Metals, Cleveland, Ohio, 1958.
23. E. P. Whelan and C. W. Haworth: *J. Inst. Metals*, 1964-65, vol. 93, p. 402.
24. D. Jaffrey: BHP Melbourne Research Laboratories, Australia, private communication, 1970.
25. L. H. Van Vlack: *AIME Trans.*, 1951, vol. 191, pp. 251-59.
26. E. D. Hondros: *Proc. Roy. Soc.*, 1965, vol. 286, pp. 479-98.
27. E. D. Hondros: *Acta Met.*, 1968, vol. 16, pp. 1377-80.

Corrections to *Met. Trans.*, 1970, vol. 1

Communication: *Some Aspects of the Annealing Behavior of Indium*, by Cuppam Dasarathy, pp. 1784-86.

Page 1784

Column 1, paragraph 2, line 2, should read: “. . . by 63 pct at liquid nitrogen temperature. The deformed . . .”

The Effect of Carbide and Nitride Additions on the Heterogeneous Nucleation Behavior of Liquid Iron, by Bruce L. Bramfitt, pp. 1987-95.

Page 1990

Column 1, paragraph 4, line 4, should read: “. . . with the [110] Fe || [100] TiC . . .”

Page 1991

Column 1, top line, should read: “. . . In this case the (110) of δ iron . . .”

Page 1993

Appendix, Case 1, first line, should read: “As shown in Fig. 9, the (110) of δ iron . . .”