

论文

高碳低合金钢中共析渗碳体微观结构的TEM研究

朱晓东;李承基;章守华;邹明;苏世怀

北京科技大学材料科学与工程系;北京,100083;北京科技大学材料科学与工程系;北京,100083;北京科技大学材料科学与工程系;北京,100083;攀枝花钢铁[集团]公司;攀枝花,617067;攀枝花钢铁[集团]公司;攀枝花,617067

摘要: 用透射电镜对几种高碳低合金钢中的共析渗碳体进行了观察发现渗碳体片不是均一的.在共析渗碳体内存在一些取向一致、宽度不等的铁素体亚片层、这些铁素体亚片层可把片状共析渗碳体隔断铁素体亚片层所在平面的指数以 {211} F为多.本文还分析比较了常见的条纹衬度与铁素体亚片层的区别,讨论了共析渗碳体中铁素体亚片层的形成机理

关键词: 珠光体 共析渗碳体 共析铁素体 铁素体亚片层

TEM INVESTIGATION ON MICROSTRUCTURES OF EUTECTOID CEMENTITE IN HIGH CARBON LOW ALLOY STEELS

ZHU Xiaodong;LI Chengji; ZHANG Shouhua (Department of Materials Science and Engineering, USTB, Beijing 100083)ZOU Ming; SU Shihuai (Panzhuhua Iron and Steel [Group] Company, Panzhuhua 617067)

Abstract: The eutectoid cementite in several rail steels has been studied by means of TEM.It was found that the eutectoid cementite lamellae are not of homogeneous structure but contain some ferrite sub-lamellae with different widths and same orientation. The continuity of the eutectoid cementite lamellae was reduced when the ferrite sub-lamellae were incorporated. The planar indices of the ferrite sub-lamellae are found usually close to {211}F.Some contrast fringes observed at the cementite/ferrite interface were analyzed and compared with the sub-lamellae in the eutectoid cementite. The formation mechanism of ferrite sub-lamellae in eutectoid cementite was also discussed.

Keywords: pearlite eutectoid cementite eutectoid ferrite ferrite sub-lamellae

收稿日期 1998-01-18 修回日期 1998-01-18 网络版发布日期

DOI:

基金项目:

国家经贸委重点科技开发项目经费!资助课题KF94-04-01-1-3

通讯作者:

作者简介:

作者Email:

参考文献:

- 1 Mehl R F,Hagel W C. Progress in metal Physics.New Youk: Pergaon Press,1956: 74
- 2 DarkenL S,Fisher R M.In:Zackay V F,Aaronson H I eds.,Decomposition of Austenite by DiffusionalProcesses. New York: Interscience Publishers,1962: 249
- 3 Bramfitt B C,Marder A R.Metallography,1973; 6: 483
- 4 Hackney S A.Shiftlet G J Phase Transformations in Ferrous Alloys, Warrendale:The Metallurgical

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(3529KB)
- ▶ [HTML全文]
- ▶ 参考文献[PDF]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 珠光体
- ▶ 共析渗碳体
- ▶ 共析铁素体
- ▶ 铁素体亚片层

本文作者相关文章

- ▶ 朱晓东
- ▶ 李承基
- ▶ 章守华
- ▶ 邹明
- ▶ 苏世怀

PubMed

- ▶ Article by
- ▶ Article by
- ▶ Article by
- ▶ Article by
- ▶ Article by

Society of AIME.1984: 237

5 黄孝瑛,郭蔽,潘天喜、赵坚,金属学报,1987;23:A200(Huang Xiaoying.Guo Wei、Pan Tianxi, Zhao Jian. Acta Metall Sin,1987: 23:A200)

6 陈世朴,王永瑞,金属电子显微分析 北京:机械工业出版社,1982:89(Chen Shipo,Wang YOngrui.Electron Micro Analysis of Metal. Beijing:Machine Industry Press;1982:89)

7 Han K,Smith G D W.Edmonds D V Metall Mater Trans, 1995: 26A: 1617

8 朱晓东,李承基,章守华,邹明,苏世怀金属学报,1996;32:300(Zhu Xiaodong;Li Chengji,Zhang Shouhua,Zou Ming;Su Shihuai.Acta Metall Sin,1996;32:300)

9 Fridberg J,Hillert M.Acta Metall,1970 18:1253

10 康沫狂,杨思品,管敦惠,钢中贝氏体上海:上海科学技术出版社,1990:110(Kang Mokuang,Yang Sipin,Guan Dunhui Bainite in Steels, Shanghai:Shanghai Science and Technology Press,1990:110)

11 Hillert M.In:Aaronson H I ed,Solid-Solid Phase Transformations,Warrendale:The Metallurgical Society of AIME.1982:789

本刊中的类似文章

1. 孙淑华,熊毅,傅万堂,邢广忠,古原忠,牧正志.共析珠光体钢在冷轧过程中的组织变化[J].金属学报,2005,41(3):267-270

2. 刘沿东,蒋奇武,赵骧,左良,梁志德.拉拔过程中珠光体钢丝帘线的织构分析与模拟[J].金属学报,2002,38(11):1215-1218

3. 杨Wuyue,王洪梅,李龙飞.不同形态第二组织低碳钢的铁素体动态再结晶[J].金属学报,2003,39(7):691-698

4. 闵娜,李伟,金学军,王晓东,杨涛,张驰.时效对冷拔珠光体钢力学性能的影响[J].金属学报,2006,42(10):1009-1013

5. 陈国安,杨王玥.中碳钢过冷奥氏体形变过程的组织演变[J].金属学报,2007,42(1):27-34

6. 黄青松,李龙飞,杨王玥,孙祖庆.共析钢的过冷奥氏体动态相变和组织超细化[J].金属学报,2007,43(7):724-730

7. 宋建宇,赵骧,王守晶,宫明龙,左良.强磁场下奥氏体化温度对Fe-0.12%C合金中铁素体与珠光体形貌的影响[J].金属学报,2008,44(11):1305-1309

8. 朱晓东,李承基,章守华,邹明,苏世怀.Si对过共析锰钢力学性能及晶界组织的影响[J].金属学报,1996,32(11):1130-1138

9. 朱汉兴;蒋家羚;李长春;薛继良.预应变对16MnR钢断裂韧性的影响[J].金属学报,1991,27(1):49-54

10. 邓蓉英;周爱华;蒋怀庆;李春秀;张立卿;孙宇田.裂纹在珠光体钢中的近门槛区扩展[J].金属学报,1989,25(3):63-69