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低碳钢在高温共焦激光扫描显微镜下马氏体相变的原位观察研究

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Study on in-situ observation of martensitic transformation in low carbon steel by high temperature confocal aser scanning microscopy

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摘要 利用高温共焦激光扫描显微镜，对低碳钢进行了马氏体相变的原位动态观察。结果表明，实验用低碳钢在连续冷却过程中形成板条马氏体，Ms点约为373 ℃，Mf点约为300 ℃。板条马氏体主要在退火孪晶处以及奥氏体晶界及其角隅处形核，或者在先形成的板条处形核，再以60°或120°角向奥氏体晶内生长。板条束的形成也有两种类型，一类以先形成的板条为基准逐步形成彼此平行的板条束，另一类则由先形成的板条触发60°或120°方向的板条。最终构成正三角形、平行四边形等几何形状。

关键词： 高温共焦激光扫描显微镜 低碳钢 马氏体相变 原位动态观察

Abstract: The in-situ dynamical observation of martensitic transformation in low carbon steel was carried out by high temperature confocal laser scanning microscopy (CLSM). It was found that lath martensite was formed in experimental low carbon steel in continuous cooling process as the temperature reached about 373 ℃ (Ms). And the transformation stopped at about 300 ℃ (Mf). The lath martensite was mainly nucleated in annealing twin boundaries and austenitic boundaries & corners, or nucleated in previously formed laths and then developed to austenitic crystal at 60° or 120°. Furthermore, there were two types for the formation of lath bundle: one was parallel lath bundle which was gradually formed based on the previously formed laths; the other was laths which finally formed geometrical shapes such as regular triangle and parallelogram after being triggered by the previously-formed laths.

Keywords: high temperature confocal laser scanning microscopy, low carbon steel, martensitic transformation, in-situ dynamical observation

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[1] 毕淑云*，闫丽丽，庞博，王羽.**火焰原子吸收光谱法测定低碳钢中锰铜锌钾**[J]. 冶金分析, 2011,31(7): 65-67

[2] 李小杰;周大庆;胡涛.**超低碳钢的取样和制样方法**[J]. 冶金分析, 2001,21(5): 1-1