

论文

不同热处理条件下双相钢的磨损腐蚀

刘景军,林玉珍,雍兴跃等

北京化工大学 北京 100029

摘要:

采用失重法、极化曲线法对不同热处理条件下双相钢在流动的3.5% NaCl中性盐水中的磨损腐蚀规律及机理进行了探讨.结果表明,随着流速的增大,不同热处理的双相钢腐蚀速度均增大,并存在一个使腐蚀速度急剧上升的临界流速值;流速相同时,经1050℃固溶后500℃2 h时效强化的双相钢耐蚀性最好.双相钢的腐蚀主要受阳极的自钝化控制.

关键词: 双相钢 3.5% NaCl中性盐水 磨损腐蚀 机理

EROSION CORROSION OF DUPLEX STAINLESS STEEL WITH DIFFERENT HEAT TREATMENTS IN FLOWING 3.5% NaCl SOLUTION

JingjunLiu

Abstract:

Influence of heat treatments on the erosion corrosion behavior of 0Cr25Ni6Mo3CuN duplex stainless steel was investigated in flowing 3.5% NaCl solution by using methods of weight loss and polarization curves. The experimental results showed that the corrosion rates increase with increasing flowing velocity, and there is a critical flow velocity above which the corrosion rates are speeded up abruptly and the duplex stainless steels suffered from serious erosion corrosion. However, the erosion corrosion resistance can be improved by proper heat treatments. It was found that the corrosion rate of duplex stainless steel annealed at 1050°C and aged for 2hr at 500°C was the lowest among the heat treated ones. Further study indicated that erosion corrosion of duplex stainless steels is mainly controlled by passivation process in the anode.

Keywords: duplex stainless steel flowing 3.5% NaCl solution erosion corrosion mechanism [HK]

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通讯作者: 刘景军 Email: Liujingjun@mail.buct.edu.cn

作者简介:

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