

论文

气体雾化贮氢电极合金MI(Ni,Co,Mn,Ti)₅的活化性能

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摘要: 研究了感应熔炼后随炉冷却和经不同处理的气体雾化贮氢电极合金MI(Ni,Co,Mn,Ti)₅的电化学活化特性. 结果表明, 氢化前后合金内能的变化是影响活化性能的原因. 因表面覆盖氧化膜或任何其它原因所引起的附加内能越大, 或氢化时氢原子进入四面体或八面体间隙位置所引起的应变能越大, 活化越困难.

关键词: 贮氢电极合金 超声气体雾化 电化学活化

ACTIVATION OF HYDROGEN-STORAGE ELECTRODE ALLOY MI(Ni,Co,Mn,Ti)₅ PRODUCED BY GAS ATOMIZATION

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Abstract: The electrochemical activation behaviours of the hydrogenstorage electrode alloys MI (Ni,Co,Mn,Ti)₅ produced by induction melting and then furnace cooling (FC) or Ar-gas atomizing (AGA) have been studied by comparing the activation of AGA electrodes aged at room temperature for 4 months with that of FC electrode. It is found that the surface oxide is only a minor factor to affect the activation, while the magnitude of internal energy change in the alloy before and after hydrogenation is the controlling factor. The increases in the internal energy of the alloy, caused by oxide and the H-atoms entering tetrahedral or octahedral sites during hydrogenation, make the activation difficult. Correspondent: (ZHOU Yu, postdoctor, Department of Chemistry, Peking University, Beijing 100871)

Keywords: hydrogen-storage electrode alloy ultrasonic gas atomization electrochemical activation

收稿日期 1996-08-18 修回日期 1996-08-18 网络版发布日期

DOI:

基金项目:

通讯作者:

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参考文献:

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