

### 论文摘要

中国有色金属学报

ZHONGGUO YOUSEJINSHUXUEBAO XUEBAO

第19卷 第10期 (总第127期) 2009年10月

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文章编号: 1004-0609(2009)10-1840-08

## 水平连铸-冷轧-退火工艺制备的Cu-Fe-P合金薄带特性

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**摘 要:** 以水平连铸卷坯-冷轧-退火新工艺制备Cu-0.1Fe-0.03P合金成品薄带, 采用拉伸力学性能测试、金相、织构分析和电子显微分析方法研究成品薄带的显微组织结构特征。结果表明, 与传统的热轧-冷轧-退火工艺制备的薄带性能相比, 水平连铸卷坯-冷轧-退火新工艺没有经过热轧, 连铸坯中的缩孔、疏松没有在冷轧过程中实现完全的冶金复合时, 产品表面会出现麻点和起皮现象。极图和ODF织构分析表明, 水平连铸卷坯-冷轧-退火新工艺制备的Cu-0.1Fe-0.03P合金薄带以{110}〈112〉黄铜织构为主, 此外还有较弱的{110}〈100〉高斯织构、{112}〈634〉S织构以及{001}〈100〉立方织构。晶体学织构是薄带出现力学平面各向异性的主要原因。新工艺制备的合金薄带的抗拉强度、电导率和软化温度稍低而伸长率稍高。

**关键字:** Cu-0.1Fe-0.03P合金; 水平连铸卷坯; 薄带; 麻点; 各向异性

## Features of Cu-Fe-P alloy strip prepared by process of horizontal continuous casting-cold rolling-annealing

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**Abstract:** Cu-0.1Fe-0.03P alloy strips were prepared by a new process of horizontal continuous casting-cold rolling-annealing. The microstructures of the strips were studied by tensile test, OM, X-ray diffraction and electron microscopy analysis. The results show that compared with the traditional preparation of hot rolling-cold rolling-annealing process, the process of horizontal continuous casting-cold rolling-annealing has no hot rolling. When the shrinkage and osteoporosis in the continuous casting can not complete the metallurgical complex during the cold-rolling process, the spots and peeling appear on the surface of products. The alloy strips prepared by the new process have slight lower tensile strength, electrical conductivity and soften temperature and higher elongation. Mechanical properties anisotropy exists in the strips prepared by the new process, thus causes the 45° direction crack when stamped.

**Key words:** Cu-0.1Fe-0.03P alloy; horizontal continuous casting volume ingot; strip; spot defect; anisotropy

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