



脉冲磁场退火对取向硅钢磁性能的影响

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Effect of Pulse Magnetic Field Annealing on Magnetic Properties of Grain-Oriented Silicon Steel

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摘要

通过对取向硅钢进行脉冲磁场退火实验,发现在相同的退火时间(6.0 min)内,低于1 T的脉冲磁场可以在一定程度上提高取向硅钢的磁感(B₈),而高于1 T的脉冲磁场则会使取向硅钢的磁性能急剧恶化.同时发现,脉冲直流电加热方式会使取向硅钢的磁性能恶化.研究表明,脉冲磁场退火有望成为一种调控材料微观结构的有效手段.

关键词: [取向硅钢](#); [脉冲磁场](#); [退火](#); [磁性能](#)

Abstract:

We have carried out experiments of annealing by pulse magnetic field. The results show that a pulse magnetic field with intensity lower than 1 T can promote magnetic induction density (B₈) of grain-oriented silicon steel, while the magnetic properties deteriorate sharply when intensity is higher than 1 T. It has also been found that heating by using pulse direct current can cause the magnetic properties to deteriorate, in contrast to the traditional heating using resistance furnace. Our research shows that pulse magnetic field annealing may become an effective method to modify material structures.

Keywords: [grain-oriented silicon steel](#); [pulse magnetic field](#); [annealing](#); [magnetic property](#)

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