

Title (en)  
IRON-BASED ALLOY AND PROCESS FOR PRODUCING THE SAME

Title (de)  
EISENLEGIERUNG UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)  
ALLIAGE À BASE DE FER ET SON PROCÉDÉ DE FABRICATION

Publication  
**EP 2055797 A1 20090506 (EN)**

Application  
**EP 07792874 A 20070822**

Priority  
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Abstract (en)  
It is an object of the present invention to provide a ferromagnetic Fe-based alloy having a large reversible strain obtained by application and removal of a magnetic field gradient. The Fe-based alloy contains one or two or more types selected from Al: 0.01 to 11%, Si: 0.01 to 7% and Cr: 0.01 to 26%, or Al: 0.01 to 11%, Si: 0.01 to 7%, Cr: 0.01 to 26% and Ni: 35 to 50%. A twin crystal interface is introduced by working the Fe-based alloy at a working rate: 10% or more. An area ratio of the twin crystal interface to a crystal grain boundary is 0.2 or more. One or two or more types of Ti: 0.01 to 5%, V: 0.01 to 10%, Mn: 0.01 to 5%, Co: 0.01 to 30%, Ni: 0.01 to 10%, Cu: 0.01 to 5%, Zr: 0.01 to 5%, Nb: 0.01 to 5%, Mo: 0.01 to 5%, Hf: 0.01 to 5%, Ta: 0.01 to 5%, W: 0.01 to 5%, B: 0.001 to 1%, C: 0.001 to 1%, P: 0.001 to 1% and S: 0.001 to 1% may be added to the Fe-based alloy if needed.

IPC 8 full level  
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Cited by  
US2014345752A1; CN103310936A; DE102014010600A1; CN102505097A; CN110720130A; CN108292549A; DE102017216461A1;  
US2015368765A1; US10113219B2; US11492686B2; WO2018213556A1; WO2018083035A1; US11352679B2

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AL BA HR MK RS

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