

Title (en)

Manufacturing process of a soft magnetic iron based alloy component with nanocrystalline structure

Title (de)

Herstellungsverfahren für eine auf Eisen basierende weichmagnetische Komponente mit nanokristalliner Struktur

Title (fr)

Procédé de fabrication d'un composant magnétique en alliage magnétique doux à base de fer ayant une structure nanocristalline

Publication

**EP 0848397 B1 20020918 (FR)**

Application

**EP 97402667 A 19971107**

Priority

FR 9615197 A 19961211

Abstract (en)

[origin: EP0848397A1] The production of a magnetic component from a nanocrystalline iron based soft magnetic alloy of composition (in at. %)  $\geq 60$  % Fe, 0.1-3 % Cu, 0-25 % B, 0-30 (preferably  $\leq 14$ ) % Si, 0.1-30 % one or more of Nb, W, Ta, Zr, high-frequency, Ti and Mo and balance impurities, the sum of Si + B being 5-30 %, involves producing a toroidal preform by winding an amorphous strip of the alloy around a mandrel and carrying out one or more crystallisation anneal processes at 500-600 degrees C for 0.1-10 hrs. to form nanocrystals. The novelty comprises carrying out a relaxation heat treatment at below the crystallisation start temperature prior to crystallisation annealing.

IPC 1-7

**H01F 41/02**; **H01F 1/153**

IPC 8 full level

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