

Title (en)

METHOD FOR PRODUCING R-T-B BASED RARE EARTH ELEMENT PERMANENT MAGNET

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES SELTENERDELEMENT-PERMANENTMAGNETEN AUF R-T-B-BASIS

Title (fr)

METHODE DE PRODUCTION D'UN AIMANT PERMANENT A ELEMENTS DES TERRES RARES EN ALLIAGE DE R-T-B

Publication

EP 1460651 B1 20070221 (EN)

Application

EP 03748613 A 20030930

Priority

- JP 0312492 W 20030930
- JP 2002287033 A 20020930
- JP 2003092890 A 20030328

Abstract (en)

[origin: EP1460651A1] A method for manufacturing an R-T-B system rare earth permanent magnet that is a sintered body comprising a main phase consisting of an R₂T₁₄B phase (wherein R represents one or more rare earth elements (providing that the rare earth elements include Y), and T represents one or more transition metal elements essentially containing Fe, or Fe and Co), and a grain boundary phase containing a higher amount of R than the above main phase, wherein a product that is rich in Zr exists in the above R₂T₁₄B phase, the above manufacturing method comprising the steps of: preparing an R-T-B alloy containing as a main component the R₂T₁₄B phase and also containing Zr, and an R-T alloy containing R and T as main components, wherein the amount of R is higher than that of the above R-T-B alloy; obtaining a mixture of the R-T-B alloy powder and the R-T alloy powder; preparing a compacted body with a certain form from the above mixture; and sintering the above compacted body, wherein, in the above sintering step, the above product is generated in the above R₂T₁₄B phase. <IMAGE>

IPC 8 full level

C22C 1/04 (2006.01); **C22C 33/02** (2006.01); **H01F 1/047** (2006.01); **H01F 1/053** (2006.01); **H01F 1/055** (2006.01); **H01F 1/057** (2006.01); **H01F 41/02** (2006.01)

CPC (source: EP)

C22C 33/0228 (2013.01); **C22C 33/0278** (2013.01); **C22C 38/005** (2013.01); **C22C 38/06** (2013.01); **C22C 38/14** (2013.01); **H01F 1/0557** (2013.01); **H01F 1/0577** (2013.01); **H01F 41/0253** (2013.01); **B22F 2998/10** (2013.01); **C22C 2202/02** (2013.01)

Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

EP 1460651 A1 20040922; **EP 1460651 A4 20050323**; **EP 1460651 B1 20070221**; CN 100334662 C 20070829; CN 1295713 C 20070117; CN 1572005 A 20050126; CN 1572006 A 20050126; DE 60311960 D1 20070405; DE 60311960 T2 20071031; DE 60317460 D1 20071227; DE 60317460 T2 20080918; EP 1460650 A1 20040922; EP 1460650 A4 20050330; EP 1460650 B1 20071114; JP 4076178 B2 20080416; JP 4076179 B2 20080416; JP WO2004029999 A1 20060126; JP WO2004030000 A1 20060126; WO 2004029999 A1 20040408; WO 2004030000 A1 20040408

DOCDB simple family (application)

EP 03748613 A 20030930; CN 03801313 A 20030930; CN 03801314 A 20030930; DE 60311960 T 20030930; DE 60317460 T 20030930; EP 03748612 A 20030930; JP 0312491 W 20030930; JP 0312492 W 20030930; JP 2004539583 A 20030930; JP 2004539584 A 20030930