

Title (en)
METHOD FOR PRODUCING MAGNETS USING POWDER METALLURGY

Title (de)
VERFAHREN ZUR HERSTELLUNG VON MAGNETEN MIT PULVERMETALLURGIE

Title (fr)
PROCÉDÉ POUR LA FABRICATION PULVIMÉTALLURGIQUE D'AIMANTS

Publication
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Application
EP 14876586 A 20141229

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Abstract (en)
[origin: EP3093857A1] The invention relates to a novel method for producing magnets (especially applicable to the production of magnets containing rare earths). The novelty of the method lies in its use of a type of electrical consolidation (such as so-called electrical resistance sintering, ERS, or so-called electrical discharge consolidation, EDC, but not necessarily one of these) as a substitute for the conventional cold pressing and sintering method which is usually used. The method according to the invention achieves: (1) combining the compacting/sintering steps, significantly cutting the duration thereof and reducing the magnitude of the working pressures; (2) implementing the steps of magnetic aligning, pressing/sintering, heat treatment and magnetising in the same matrix; and (3) rendering superfluous the use of protective atmospheres during the sintering process.

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Citation (search report)
• [A] US 5382303 A 19950117 - ANDERSON RICHARD L [US], et al
• [IA] US 2012181476 A1 20120719 - OZEKI IZUMI [JP], et al
• [A] US 2013266473 A1 20131010 - WANG YUCONG [US]
• [A] WO 2012159096 A2 20121122 - UNIV CALIFORNIA [US], et al
• See references of WO 2015101682A1

Cited by
EP3862110A1; CN106098325A; CN115502401A

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