

Title (en)

MAGNETOSTRICTIVE POWDER COMPOSITE AND METHODS FOR THE MANUFACTURE THEREOF.

Title (de)

MAGNETOSTRIKTIVES PULVERKOMPOSIT UND VERFAHREN ZU DESSEN HERSTELLUNG.

Title (fr)

COMPLEXE DE POUDRE MAGNETOSTRICTIVE ET PROCEDES DE FABRICATION.

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Application

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Abstract (en)

[origin: WO9220829A1] Magnetostrictive powder composite and method for the manufacturing of the magnetostrictive powder composite. The powder composite according to the invention is preferably used as a magnetostrictive element in sound projectors and vibration generators, transducers, actuators and in linear motors. The powder composite consists of magnetostrictive powder grains with chemical composition (RE)_xT_{1-x}, where RE represents one or a mixture of several rare earth metals, T represents Fe, Ni, Co or Mn or a mixture of these metals and x represents atomic fraction assuming a value between 0 and 1, whereby the grains are held together by a binder. The powder composite is formed in such a way that it exhibits a homogeneous magnetic flux, has a good strength and can be made with a built-in precompression. It can be equipped with coolant channels and/or with coil loops. The powder composite is produced by pressing together the magnetostrictive powder grains and the binder in order to plastically deform the grains, either completely or partially, which causes the magnetic domains in the grains to align perpendicularly to the applied compression pressure. In an alternative mode of execution according to the invention isostatic pressing is used.

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