Objective

The overall objective of the REProMag project is to develop and validate an innovative, resource-efficient manufacturing route (SDS process) for Rare Earth magnets that allows for the economically efficient production of net-shape magnetic parts with complex structures and geometries, while being 100% waste-free along the whole manufacturing chain.

The new Shaping, Debinding and Sintering (SDS) process for Rare Earth magnets is an innovative automated manufacturing route to realise complex 3D- and multilayered parts; resulting in a significant increase in the material efficiency of at least 30% during manufacturing; while at the same time allowing additional geometrical features such as threads, cooling channels, small laminations/segments (e.g. to increase the efficiency of electrical motors) and structural optimisations such as lightweight-structures or the joint-free realisation. As part of the project, the possibility to produce hybrid parts such as an improved moving-coil transducer for headphones, loudspeakers and microphones will be evaluated.
The SDS process allows a new level of sustainability in production, as the energy efficiency along the whole manufacturing chain can be increased by more than 30% when compared to conventional production routes. Moreover, the used raw material is 100% recycled and can be again recycled in the same way at the end of the lifetime of the products. In short, the innovative REProMag SDS process has the potential to manufacture complex structures of high quality and productivity with minimum use of material and energy, resulting in significant economic advantages compared to conventional manufacturing.

The REProMag project is a highly innovative combination of applied research, technology development and integration, resulting in small-scale prototypes and a closely connected demonstration activity clearly showing the technical feasibility of the REProMag SDS processing route in a near to operational environment.

Field of science
/natural sciences/mathematics/pure mathematics/geometry
/social sciences/other social sciences/social sciences interdisciplinary/sustainable development
/engineering and technology/environmental engineering/waste management/energy efficiency
/social sciences/economics and business/economics/production economics/productivity

Programme(s)

Topic(s)

Call for proposal
H2020-FoF-2014

Funding Scheme
RIA - Research and Innovation action

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Activity type
Private for-profit entities
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EU contribution
€ 1 122 375
Participants (14)

FOTEC FORSCHUNGS- UND TECHNOLGIETRANSFER GMBH

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Austria
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