

ReMat (Recycling & Materialization) for rare earths contained in permanent magnet

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Rare earths are widely used in various industries such as voice coil motors in hard disk drive, magnetic generators for magnetic resonance imaging and electrical motors equipped in future vehicles. They have been stood in the center of issues not only due to the industrial reason, but also the political due to the drastic increase of the instability in prices and criticality. Even though a lot of approaches continue to assure the rare earths, recycling regards as a strong alternative in the aspect of energy consumption and environment. So that convergence in the processes is proposed by these authors, so called REMAT (recycling & Materialization), as shown in Figure below. It means that the materials in-put for recycling move to industry without disposal.

In this investigation, a brief result REMAT process from the rare earth (Nd-Fe-B) magnets will be introduced using a low melting point element. And the comparison in the purity and magnetic property is also shown.

Keywords: Rare earth magnet, Recycling, Materialization, Low melting point element, Selective extraction

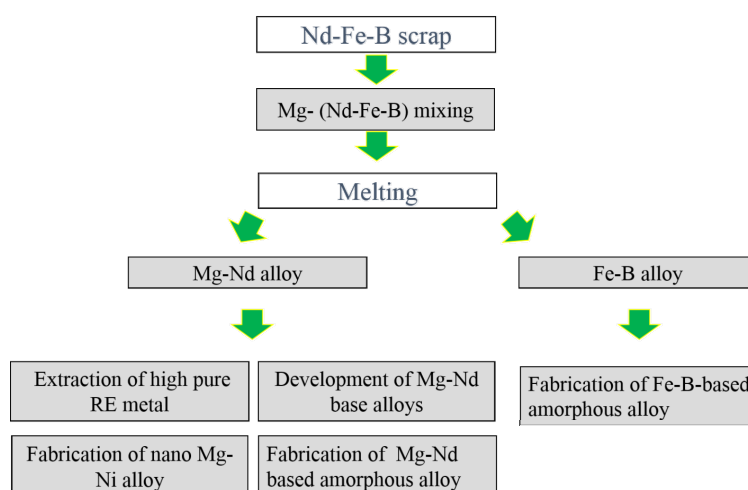


Fig. Flow of REMAT for zero emission