

Zero Waste Magnet-Grade Powder Recovery from e-Waste

The overarching goal of the proposed project is to develop a novel recycling process for transforming waste/discarded neo magnets to usable magnets that can be directly put back into the service chain.

The specific objective is to commercialize the new inexpensive and zero waste generating manufacturing process, hitherto unavailable domestically, for the rare earth permanent magnet industry.

Currently, the US is importing these magnets from foreign soils and the developed process will be able to mitigate the foreign dependency on a very critical commodity, used for keeping our nation safe and maintaining our country's critical infrastructures.

The novelty of the process lies in selectively hydriding the magnet phase without chemically altering the metallic surface coatings.

Another novelty of the process is to be able to prepare magnet-grade powders that can be directly used for the refabrication of the neo magnets.

The new and novel manufacturing process can prove to be a game changer in the clean energy sector.