

Leaching and Recovery of Nd from Spent NdFeB magnet

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Currently, large amounts of spent NdFeB magnet manufacture are stockpiled owing to the lack of a cost-effective processing method. Because of the growing new market for individual rare-earth metals such as Nd and owing to the likely continuing increase in demand for permanent magnets, scrap treatment will undoubtedly become an important alternative materials source. Development of a viable method to process NdFeB scarp will aid manufacturers economically and reduce the necessity of consuming rare-earth materials.

The present work studied the separation of Nd and Fe using double-salt precipitation method by the addition of sodium sulfate to leach liquor. Optimized condition for separation of Nd and Fe was pH of 2, the addition amount of sodium sulfate of 2Molar weight and the temperature of 50°C. In this condition, the recovery rate of Nd was above 99%. The chemical structure of Nd precipitate was $\text{NaNd}(\text{SO}_4)_2 \cdot \text{H}_2\text{O}$. More detailed will be discussed in the presentation.