

YAMAGUCHI LAB.

[Extractive Metallurgy and Resource Recovery]

Integrated Research Center for Sustainable Energy and Materials

Recycling of Resources and Materials

<http://susmat.iis.u-tokyo.ac.jp/japanese/members.html#yamaguchi>

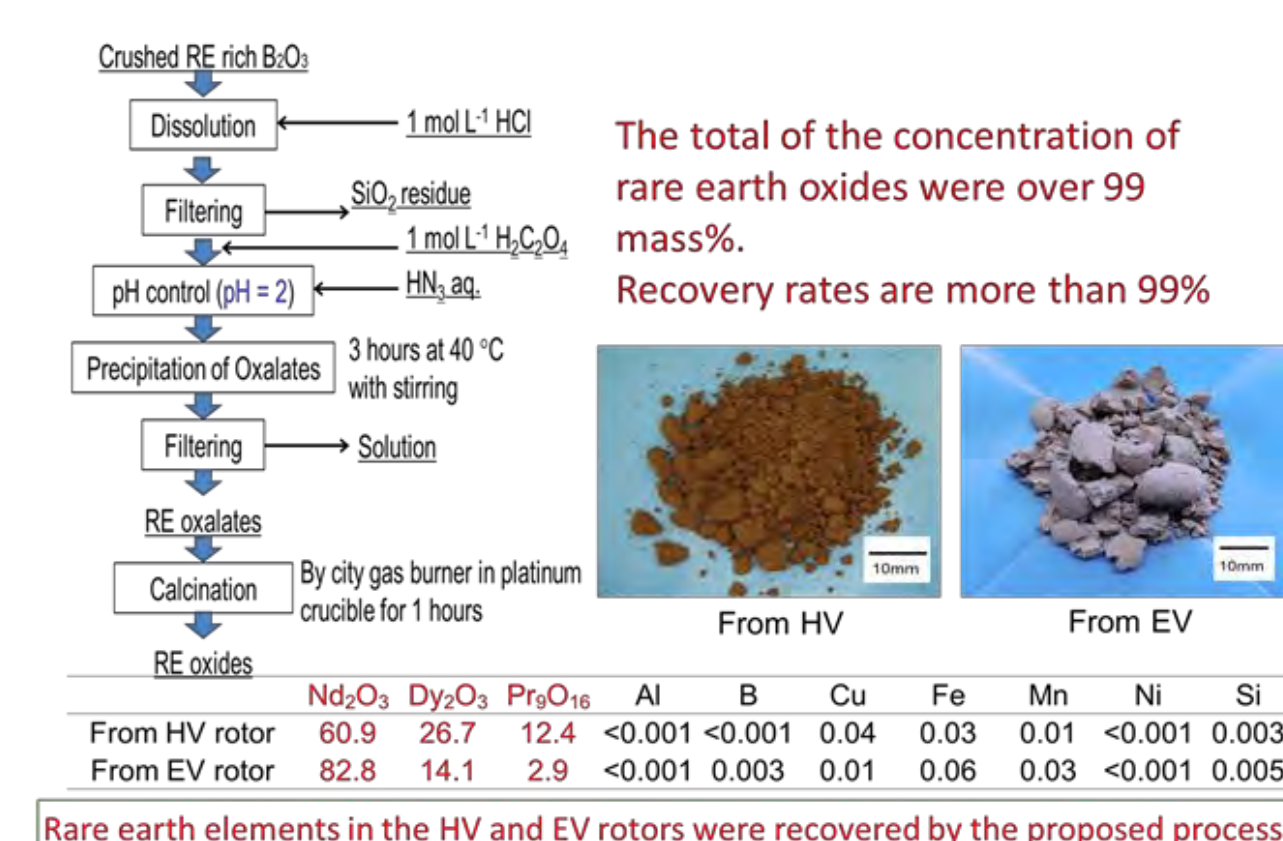
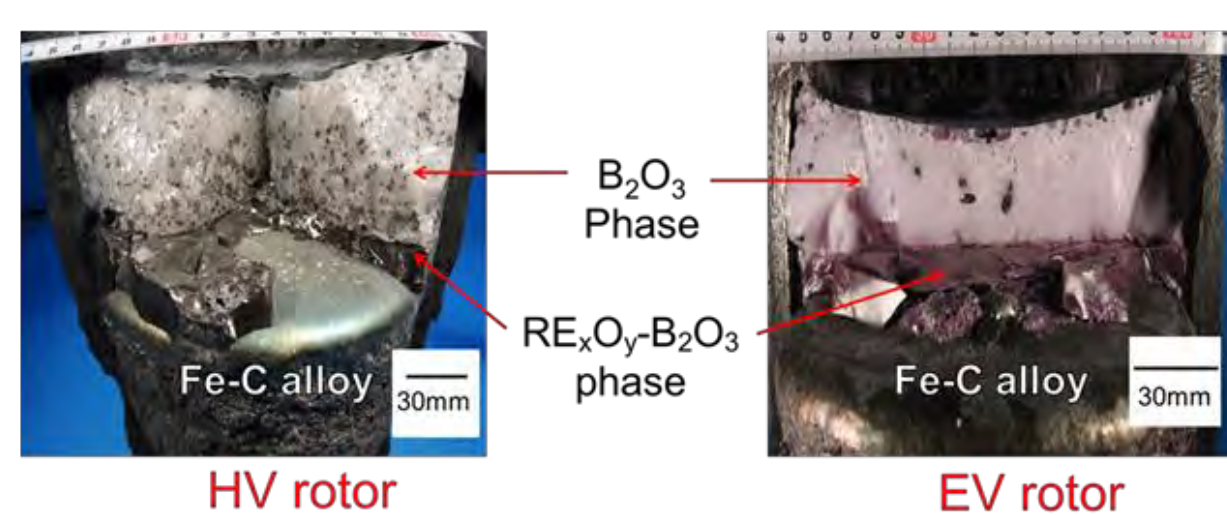
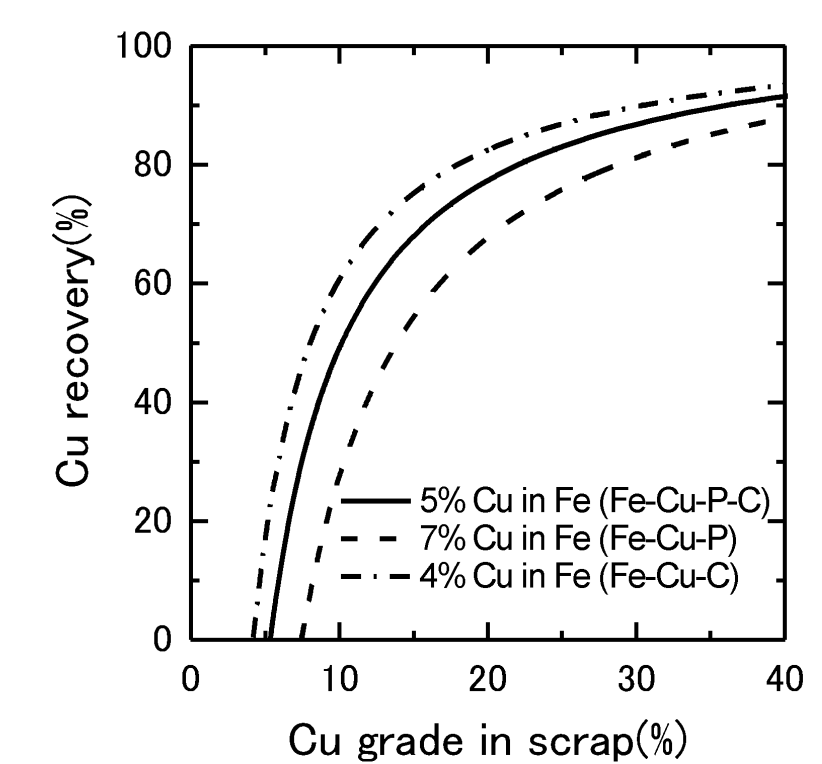
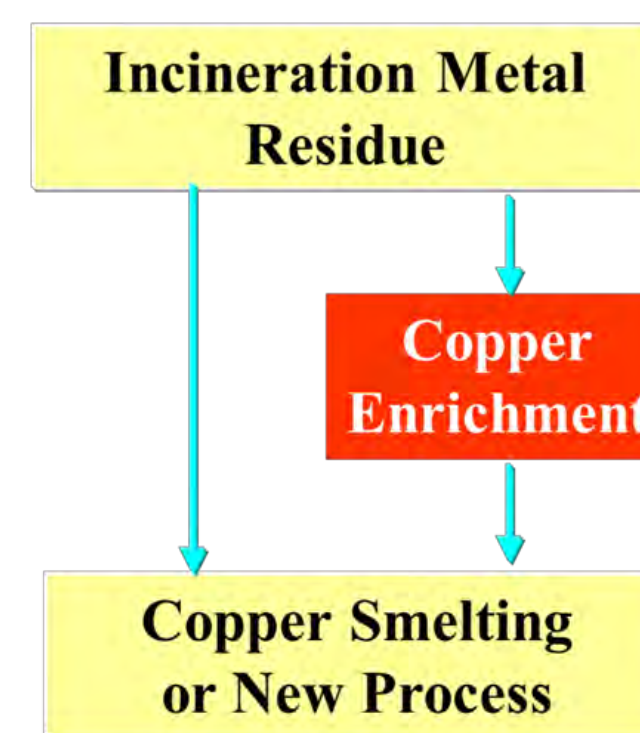
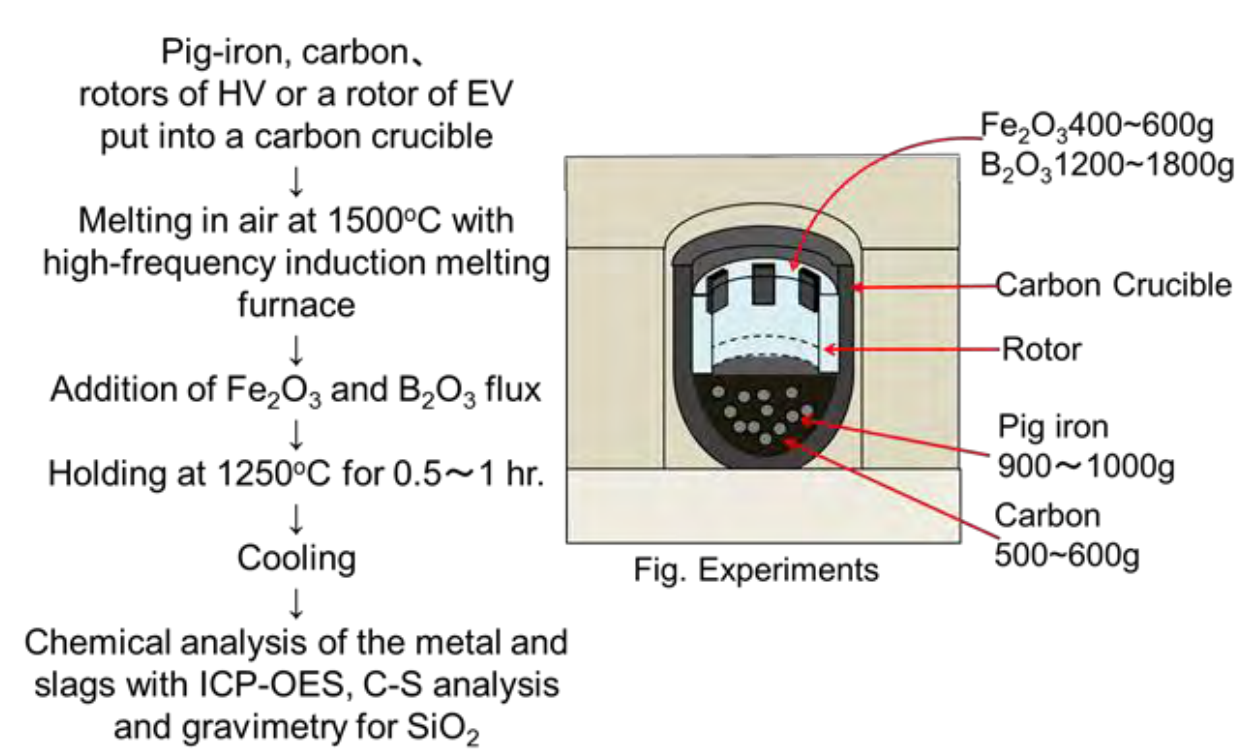
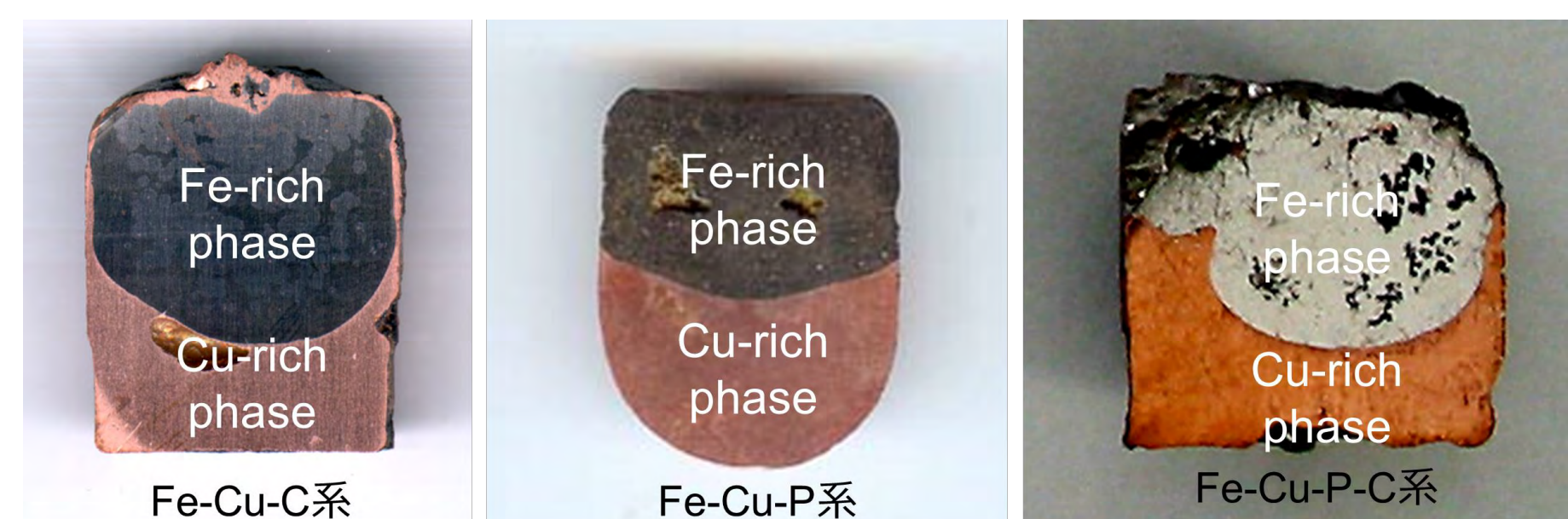
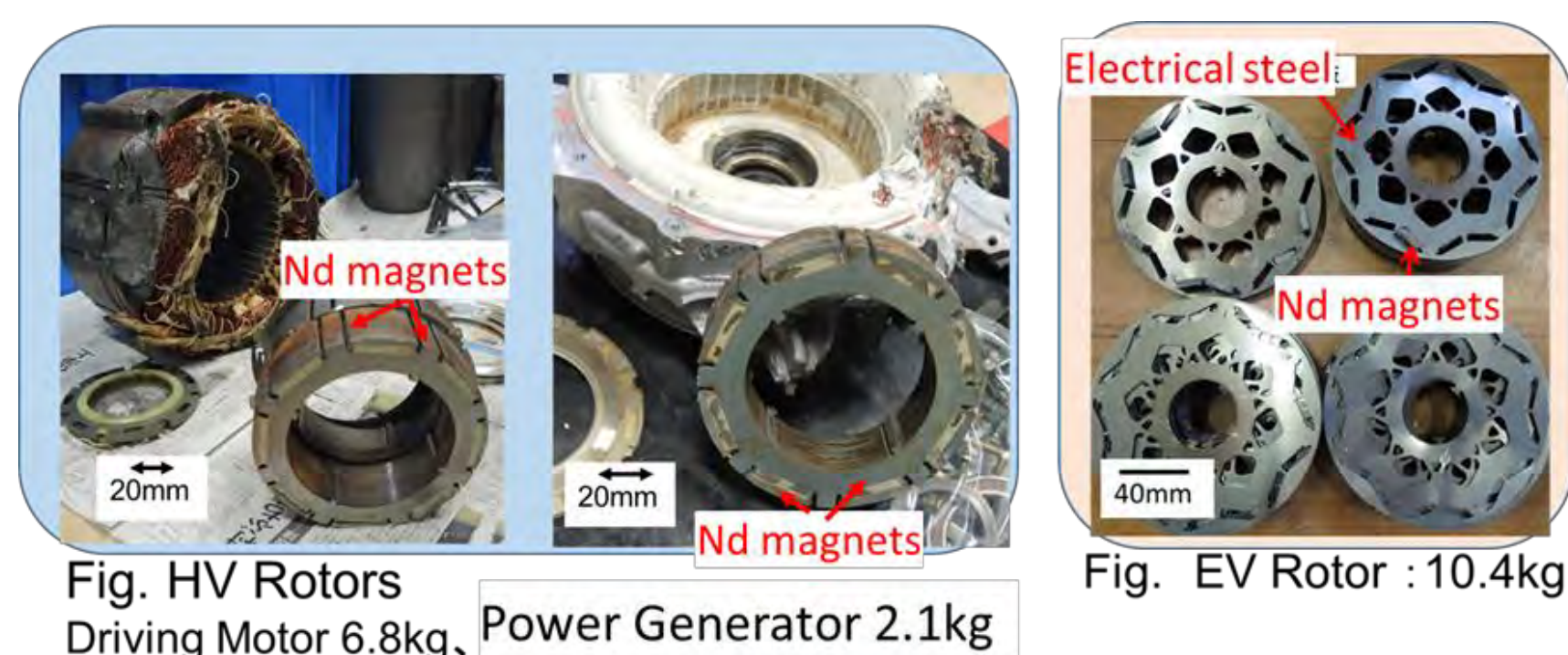
Extractive Metallurgy of Non-Ferrous Metals

Recovery Process of Rare Metals in Non-Ferrous Extractive Metallurgy

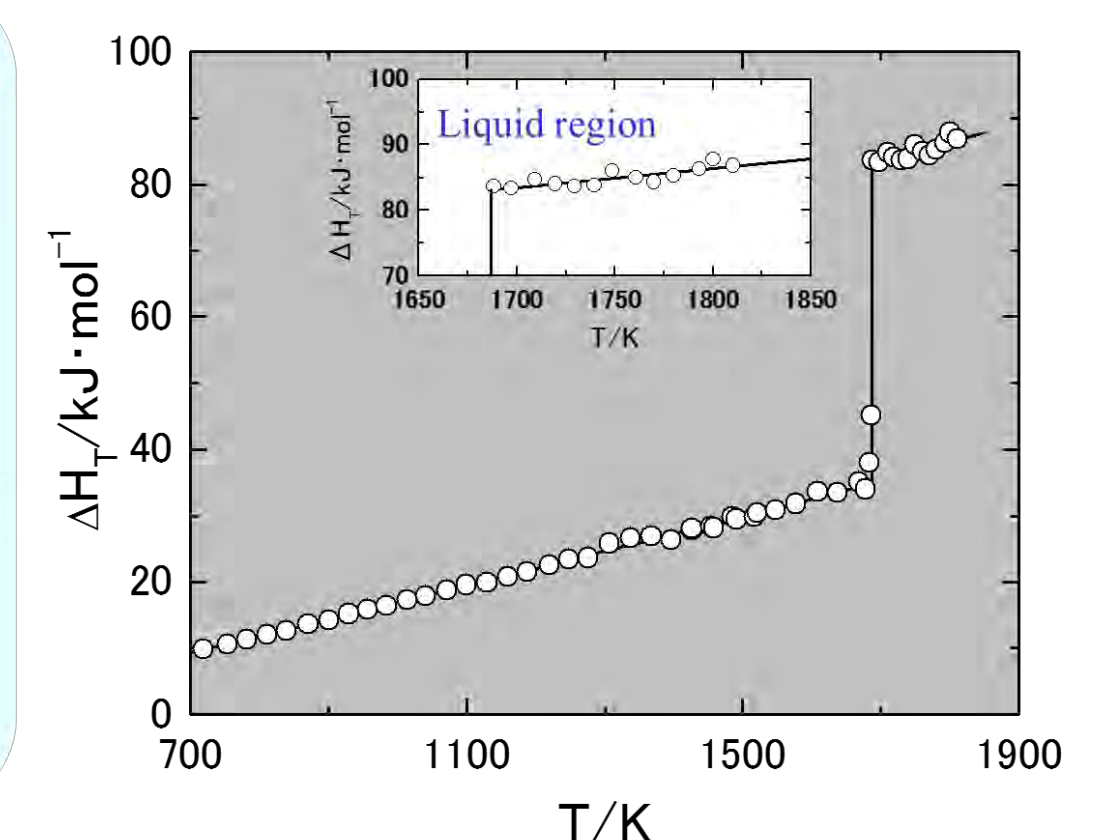
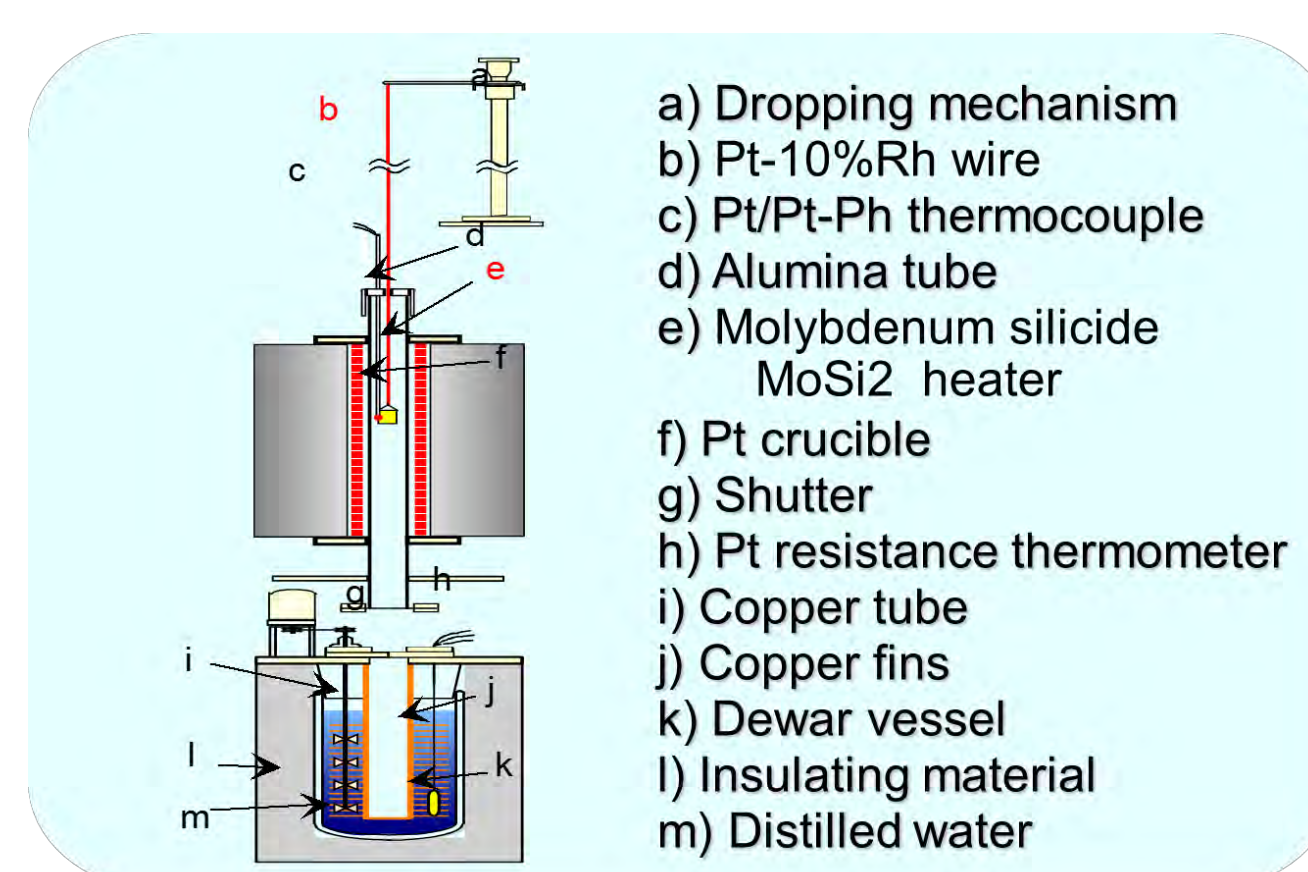
In non-ferrous smelting process the base metals of copper, lead and zinc as well as rare metals are produced from secondary materials such as scrap metals, alloys and residues. The valuable metals that result from the refining process provide the raw materials for a wide range of application possibilities in various fields.

We suggest a new and effective recovery process of rare metals in the non-ferrous extractive metallurgy.

- ◆ Recovery of rare earth elements from magnet scrap by using B_2O_3 flux.
- ◆ Copper enrichment based on liquid phase separations.
- ◆ High temperature calorimetry.



Copper enrichment based on liquid phase separations.



The recovery of the rare earth elements from HV and EV rotors

High temperature heat content measurement of silicon by drop calorimeter