

## ABSTRACT

The work contains: 126 pages, 26 pictures, 39 tables, 27 references to a literature data.

The object of the research are waste of metallurgic and abrasive production, ore of Poburg occurrence. Aim of the work is an investigation of regularity of reduction and enrichment of the complex oxides of the Poburg occurrence ore and waste of metallurgic and abrasive production, to determine possibility of obtainment a ligature for making self-fluxing alloys based on Ferrum using a production waste.

Methods of research and outfit: investigation of granulometric contents of charge used the "ROTAP" device with standart set of sieves. Determining the chemical contents of elements in materials have been done using the "EXEPRT 3L" element content analyser.

The X-ray structure analysis have been investigated with the RIGAKU Ultima IV device(Japan). Reduction of charge oxides have been done by many reductors with different temperatures and different properties. The reduction have been conducted in a muffle furnace. In quality of reductor there was used Hydrogen, Carbon and also there was conducted combine reduction with Carbon and Hydrogen. There was used the enrichment method using dry magnet separation. Magnet field was created by magnet systems of permanent magnets.

In the work there have been studied the influence of granulometric contents of the input charge, reduction temperature and reductor type on reduction degree and ore enrichment processes using magnet separation. Fe-Ni alloys got in the work have been used in quality of ligature as a Nickel source for smelting of self-fluxing alloys. The alloys was smelted in resistance furnace with graphite heater with 1600C temperature in a atmosphere of argon, also have been done the measurement of microhardness and durability of the alloy.

Keywords: CHARGE, PRODUCTION WASTE, SELF-FLUXING ALLOYS, HYDROGEN AND CARBON REDUCTION, CHEMICAL AND PHASE ANALYSIS, MAGNET SEPARATION.