

ABSTRACT

The work contains 97 pages, 30 figures, 13 tables, 35 references to the literature data.

The aim is to study the influence of dispersion powder TiH_2 to seal during pressing and sintering.

Research methods:

- a) preparation of powders;
- b) determination of powder;
- a) formation of titanium hydride powder;
- d) electron beam sintering;
- f) study the microstructure.

Object of study - titanium hydride.

The work carried out experimental study of the effect of dispersion powder TiH_2 to seal during pressing and sintering.

Established that the degree of compaction of powders of titanium hydride mainly affect grain size. Moreover, with increasing degree of dispersion powder compaction slightly reduced, which explains the increase in the fair value of internal friction between particles of powder and external - friction between the surface and compacts matrix mold. Increasing polydispersity powder mixture leads to a dense stacking them while pressing and getting the most dense compacts with the same values of compaction pressure.

The influence of temperature and particle size distribution of titanium hydride powder on the structure and residual porosity sintered compacts. And in the smallest fractions observed most seal.

Keywords: **TITANIUM HYDRIDE, PRESSING, SINTERING, PARTICLE SIZE DISTRIBUTION, DISPERSION POWDERS, ELECTRON BEAM SINTERING**