ABSTRACT

The work contains 86 pages, 24 pictures, 16 tables, 46 references to the literature data.

The aim is to study the influence of process parameters for getting composite-titanium matrix composites with desired physical and mechanical properties.

Research methods:

- preparation of powders;
- determination of powder;
- plasma spraying;
- study the microstructure;
- determining the phase composition atomized powder.

Object of study is titanium hydride of 5.3 wt. % Titanium diboride.

The work carried out experimental study of the effect of time assignment for assignment titanium hydride and titanium hydride mixture of 5.3 wt. % Titanium diboride.

The technological scheme for obtaining composite powders based additive to those technologies.

Due to the fact that they have a great affinity for oxygen, was a special protective chamber for spraying powder in argon eveloped to install spray .

Determined that spray a jet of plasma in argon enviroment provides a composite powders with minimal oxidation and spherical powder, where comproside powders meet the requirements of 3-D printing.

Keywords: TITANIUM HYDRIDE, DIBORIDE OF TITANIUM, GRINDING, PARTICLE SIZE DISTRIBUTION, DISPERSION POWDER, SPRAY, 3-D PRINT, TITANIUM MATRIX COMPOSITES