



Effect receiving modes, and heat treatment on
the structure and properties of the magnetic
powder of strontium hexaferrite $\text{SrFe}_{12}\text{O}_{19}$
obtained by crystallization of the oxide glass
with additives of Fe-B

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Objective

The aim of this study was to investigate the magnetic properties of hexaferrite powders $\text{SrFe}_{12}\text{O}_{19}$ strontium obtained by crystallization of the oxide glass, with the addition of Fe-B.

To achieve this aim the following tasks:

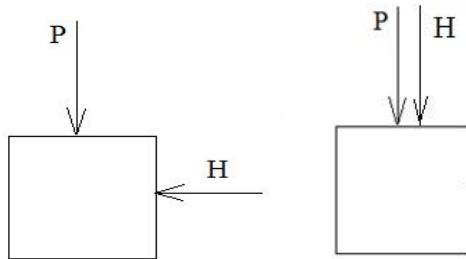
- Preparation of the alloy samples of strontium hexaferrite composition of 95% $\text{SrFe}_{12}\text{O}_{19}$ and 5% Fe-B.
 - Testing methods of heat treatment;
- The study of the magnetic properties of the samples after grinding;

Experimental technique



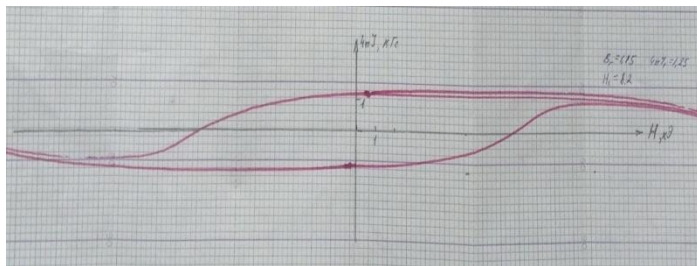
Comminution

SAND planetary mill was used to prepare nanocrystalline powders of strontium hexaferrite with the ability to use up to 4 sealable drums.



Pressing

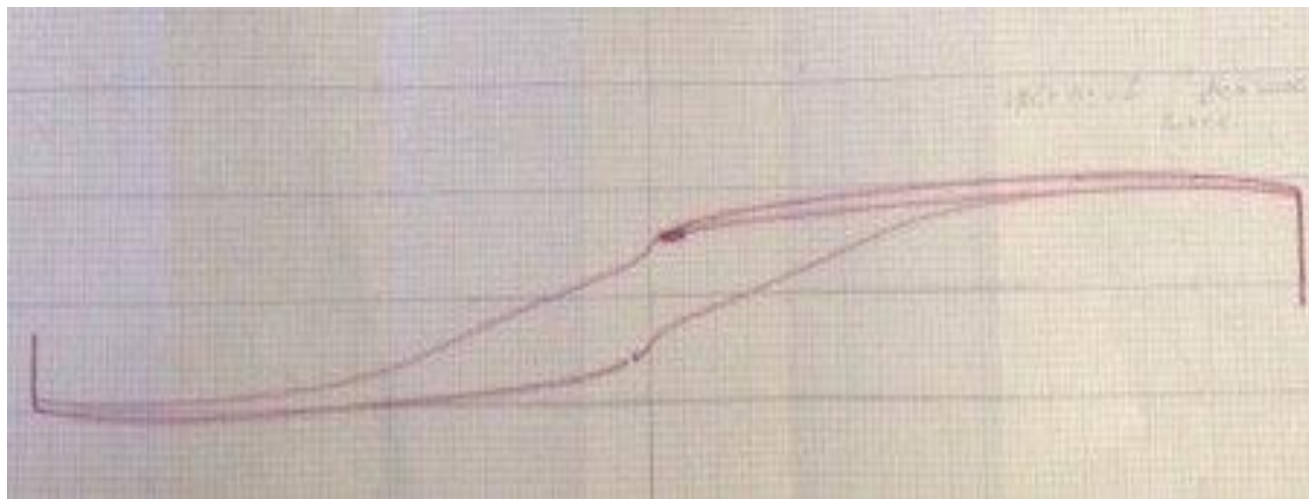
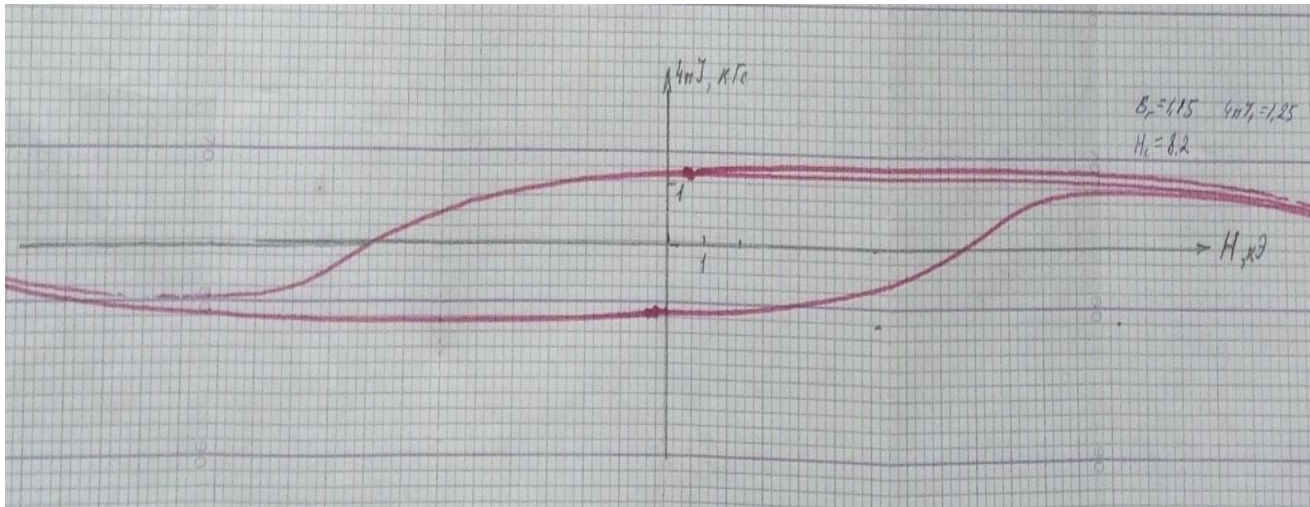
Was conducted on "Hydraulic press" install at 60 kg / cm² (pre-powder in the mold magnetized in a magnetic field).



Measurements of the magnetic properties

Measurement of the hysteresis properties of the samples is carried out at room temperature for gisterezisgrafe using microwebermeter F192.

The hysteresis loop of strontium hexaferrite and strontium hexaferrite with additions of iron boride.



Conclusions.



- Oxide glass crystallization method obtained submicrocrystalline rapidly quenched alloys and amorphous structure.
- It is shown that vitrified grinding in distilled water, compared to grinding in toluene resulted in a slight decrease in the coercive force (from 9 to kilooersted 8,2 kilooersted) and increase residual induction (from 0,75 kilogauss to 1,25 kilogauss, respectively).
- After annealing at presszagotovki 1050 C at 30 min following magnetic properties obtained

Thank you for attention!