CONCLUSIONS

1. The influence of the ultrasonic mixing time effect on porosity, structure and phase composition of ceramic Al_2O_3-50%vol.SiO_2 of nanopowders obtained using scanning electron microscopy, X-ray analysis, the method of impregnation fluid and gas sorption methods was investigated.

2. Established that increased time ultrasonic mixing initial powders reduces the porosity and increasing the volumetric shrinkage of nanocomposites, agglomerates due to grinding and mechanical activation of powder.

3. Increased time and increase ultrasonic mixing isothermal holding time lead to a reduction in specific surface mesopores by increasing the specific volume - coalescence of pores. There is a structural change in the increasing curvature radius of volume defects.

4. The use of ultrasonic mixing leads to the appearance of cristobalite in sintered materials at 1200 °C, increasing the time ultrasonic mixing not cause to noticeable changes in the phase composition

5. The best interval investigated in terms of obtaining nanocomposites - is a ultrasonic mixing 30 min and isothermal holding for 10 minutes at a temperature of 1200 °C sintering In this case is a high open porosity - 45% and relatively high surface area - 52 m^2 / g.

6. Established that ultrasound has a greater influence on the formation of micro and mesoporosity than the use of pore forming agent, so for making porous nanocomposites recommended further studies of the effect of the ultrasonic mixing in combination with other technological parameters It is necessary to make a study of the kinetics of sintering in the temperature range 900-1200 °C, and investigate the strength of the material received

7. Determined planned cost of research on the topic "The Structure Formation of Highly Porous Oxide Nanocomposites", which was 76,644.70 UAH.

8. Established that the research carried out in laboratories that are fully compliant with electrical and fire safety.