

The project aims to analyze the causes of the high susceptibility of iron-aluminum sinters for plastic deformation. The materials of this group are commonly regarded as brittle. However, sinters obtained under special conditions in the Department of Advanced Materials and Technologies characterized by significant deformation and high compressive strength. These properties are clearly related to the internal structure of the obtained sinters. Therefore, the project was planned deformed sinters subjected to a complete study. Starting from the micro-hardness measurement, the microstructure observations and phase composition to advanced research in the atomic scale (an analysis of vacancies by Doppler broadening, X-ray analysis lattice parameter and transmission electron microscopy analysis). The results will help to explain the reasons for such behavior received sinters.