

## ANNOTATION

*The issue* of the diploma project is research and improvement of automated systems of stabilization of weapons of light armored vehicles in order to increase their accuracy and efficiency. The researched stabilization systems are based on a precision sensitive element that uses piezoelectric properties according to its operating principle. A piezoelectric accelerometer is a device that will become a fundamental element of the studied stabilization systems.

In the course of the implementation, an overview of the existing automated stabilization systems, an overview of the principle of operation of sensitive piezoelectric elements, their main types of construction and installation, as well as an overview of the properties of the main known piezoelectric materials was carried out.

On the basis of the considered material, the design of the own version of the accelerometer was carried out, its three-dimensional model was modeled and the study of external influences to which it could be subjected in the Solidworks CAD software environment was carried out.

The calculation of the main characteristics of the sensitive element was carried out, the selection of materials for the implementation of the design elements of the piezoelectric accelerometer was carried out, and the methods of mounting the sensitive element to the measured surface were considered and selected.

Consideration of the main mathematical dependencies between the obtained characteristics of the designed PA proves the increased sensitivity of the PA, which is the goal of this development.

**Keywords:** light armored vehicle, combat module, sensitive element, piezoelectric effect, piezoelectric accelerometer, Solidworks modeling, vibration analysis.