I would like to tell about my research work. The topic of my research work is the creation of a software module for modeling the effective properties of ceramic composites.

First of all, I would like to say that the composite material is a multicomponent system with high strength and elastic properties. Because of these properties, composite materials are widely used in various industries, such as shipbuilding, aircraft construction and rocket engineering. Thus, modeling the properties of composite materials is an important task that will allow the development of this field of science.

And now we turn to my research work. My research work is associated with the modeling of ceramic composites. The main purpose of my work is the numerical simulation of a ceramic composite of aluminum oxide with carbon nanotubes (Al2O3 – CNT). The work consists of three important stages:

* Creation of a 3D model of the geometry of the material under study (At this stage, the material will be presented in a simple geometric 3D model)
* Calculation of the strength, deformation and elastic properties of the composite (At this stage, a computational module will be programmed, which uses the laws of continuum mechanics to calculate the properties). As input data, the periodicity cell will act, and the output data will be the strength and elastic properties of the ceramic composite. Also It should be added in this connection that the computing module will be developed in C ++
* Analysis and optimization of the results

In this semester, I created the 3D model of the geometry of the material and now I'm doing the 2nd stage of my research work. I create a software module that will simulate the strength and elastic properties of the composite. I think that this module will be developed during this summer.

The supervisor of my work is Professor, Doctor of Technical Sciences, Koltsova Eleonora Moiseevna.

In conclusion, I would like to say that I like my research work and I will continue to carry out this work.