

In the eighteenth century there was a rapid development of industry, which caused an increase in people's quality of life and thus a huge increase in energy demand. Until the second half of the 20th century, only a few considered the long-term consequences of increasing global consumption - pollution of the atmosphere, soil and water, as well as the gradual depletion of natural resources. We live in times when environmental pollution is at its peak and the greenhouse effect is beginning to be felt more and more. Therefore, it is our responsibility to find alternative ways of obtaining energy, the so-called green energy. Solar energy is a huge renewable resource, and with the appropriate levels of cost and efficiency could provide the required level of energy without carbon dioxide emissions. The photovoltaics is a very important industry branch where, in addition to ecological benefits, it also has economic and social benefits. To achieve global carbon-free energy production, photovoltaics is looking for high-performance, cheap, non-toxic and stable alternatives to already known solar absorbers. This project is keen on this issue. We will be looking for new cheap absorbers in which the energy conversion is relatively insensitive to imperfections, such as point defect, dislocation, stacking faults, grain boundaries, and surfaces. The main goal of this project is to grow selected absorbers and study their optoelectronic properties. It is intended that these absorbers will show a tendency to tolerance for defects and therefore will be used to develop new generation photovoltaic devices and solar cells.