

# Abstract

## Optical eyepiece systems for microdisplays

Number of pages – 77

Number of figures – 29

Number of tables – 25

Number of applications – 0

Number of references – 39

**Topic relevance.** With the development of high technology and widespread use of computers in today's society, it becomes necessary to use high quality information display systems. Recently, microdisplay (MD) projection information display systems have become more widespread as they have several advantages over alternative displays. New technologies of production and improvement of image quality of micro displays are constantly appearing.

This topic of the project is relevant and in demand, as, at present, various companies continue to carry out research on the creation of various compact glasses, to fully state that this task is not possible.

**Research goal** is demonstrating the possibility of automated parametric synthesis of optical eyepiece systems for micro displays.

### **Research objective:**

1. Analyze the known methods of local and global optimization and choose the most effective among them for the further use in the process of parametric synthesis of optical eyepiece systems for microdisplays.
2. Investigate the feasibility of a method of automated design of optical eyepiece systems for micro displays.
3. Perform an experimental verification of the proposed approach by calculating specific optical lens systems for microdisplays.

**Object of research** is the lens eyepiece for a microdisplay.

**Subject of research** is development of eyepiece systems for microdisplays in an automated way.

**Keywords:** eyepiece, microdisplay, OLED, optical system, optimization, parametric synthesis.