Application No.

PI1 Name:

**A Waveguide Imaging Method Based on Reflective Periscope Design**

**Scientific abstract**

A periscope is an optical device, the function of which is to allow sighting of objects that are not in the direct line of sight of the observer’s eye/screen/detector. The concept behind the periscope is tilting the optical axis by breaking the rays of light with a mirror or prism so that the image is obtained in the desired location.

The periscope has a variety of uses, many of which belong to the military realm. For example, observing from submarines above the sea level surface, looking at the war zone from inside a tank, directing light into hidden places, and more.

In this application, the researchers review a new development based on the waveguide concept and ray directing methods by utilizing a tube with light-reflective walls. This allows us to build a periscope that does not use lenses and is significantly small-dimensioned with respect to a standard periscope. The authors also review a number of applications suitable for the reflection periscope.