ABSTRACT

This master's dissertation consists of an introduction, 4 chapters, conclusions, list of references and appendices. The total volume of the work was 130 pages, contains 64 illustrations and 24 tables. Processed 54 sources of literature.

As a result of work on the master's dissertation the functional scheme and optical tract of thermal imaging system with multispectral image fusion were developed, 3 full-fledged programs were designed and the neural network was trained. A startup project was also developed to analyze the possible commercial use of the designed system.

The main function of the designed system should be mass control of body temperature of people in places of accumulation, to detect fever - the main symptom of an infectious disease. The events of the last year have shown us the urgency of this problem.

Keywords: thermal imagers, image fusion, thermal control, non-destructive testing, machine learning, automation, temperature screening, two-channel optical system, image processing, c#, control of infectious diseases.