

## **ANNOTATION**

### **ASSESSING PAPER FILTERING WITH FOURIER FILTRATION**

Page count – 106 pages;

Figures – 32 figures;

Tables – 27 tables

Sources used – 25;

**Relevance.** In the dissertation we have analyzed the problem of determining the solvency of banknotes in Ukraine and determined that it is possible to automate the stage of determining the deterioration of banknotes to speed up this process.

It was proposed the automation system to detect the deterioration of paper money.

On the example of typical devices is the task of objectively assessing dirt using the optical density of denominations.

Therefore, it is important to develop a device that allows you to automate and expedite the checking of paper for contamination by simultaneously scanning

the front and back sides of the banknote with subsequent digital image processing

and sorting by degree of contamination.

#### **Aiming of thesis:**

1. Analyzing the processes of paper money. Review of legislation and foreign analogues.

2. Development of the detector design by the type of tablet scanner.

3. Fourier-based software development.

4. Development of a startup project.

**Object of study:** paper contamination that requires control, such as banknotes.

**Subject of study:** the control of wear and tear (contamination parameter) of paper money by Fourier optics.

**Key words:** paper wear, banknote, benchmark, Fourier filtering.