

## Summary

In this project an eddy current flaw detector for determining the material conductivity was designed. The introduction substantiates the relevance of the development.

In the first section the analytical review is carried out in which the following are considered: electromagnetic characteristics of substances, inductors, methods of electromagnetic structuroscopy, and features of the controlled object and properties of its material (steel) are considered.

In the second section, the calculation of the eddy current transducer is performed. The design parameters of the transducer are selected, the output signals, the limit value of the coil overheating current, the depth of penetration of eddy currents, etc. are calculated.

In the third section the electric structural scheme of the device was developed, with its work description. Elements of the electrical circuit diagram were selected, described and calculated. The program code of the microcontroller is made.

The diploma project consists of an explanatory note of 63 pages, includes 20 illustrations, 1 table, 3 schemes, 10 references, 2 attachments, 35 formulas.