

## **Annotation**

The diploma project is focused on the analysis and research of non-contact control methods for protective coatings in the manufacturing process of aircraft structural components. The project explores various aspects of this control, including the physical essence of eddy current testing and adhesion as a factor influencing the quality of dielectric coatings control.

Patent information in the field of eddy current testing is analyzed, along with an overview of modern devices used for such control. The project sets a research objective that will be addressed within its scope.

The second section covers the calculation part of the project. An electrical calculation is performed for the "eddy current transducer-object under control" system, including the selection of the eddy current transducer type and signal calculations. The justification of the amplitude measurement method is also provided.

The third section focuses on the selection and calculation of electrical circuits for the defectoscope. The project includes the development of an electrical structural scheme and a description of the device's operation. Additionally, the selection and calculation of elements for the circuit are conducted, including the measurement amplifier, ADC, and bandpass filter.

The diploma project concludes with conclusions for each section, a list of references, and appendices.

Overall, the diploma project is dedicated to the study and investigation of non-contact control methods for protective coatings in the manufacturing process of aircraft structural components. It encompasses the analysis and review of existing methods and devices, the calculation part, and the selection of electrical circuits, providing conclusions for each section.