

Abstract

This master's dissertation consists of 87 pages, 21 illustrations, 24 tables.

In this master's thesis an automatic ultrasonic control system for pipes using LRUT technology was developed.

This topic is relevant today as automation and large volumes of non-destructive testing require systems that can handle this.

The system proposed in this paper consists of modern technologies in UZK. To ensure acoustic constant contact between the object of control and the system, the latest ideas are used. The simulation of the system was carried out using modern software.

Also, development of a potential startup of the project was conducted, and the possibility of the system's exit to the international and domestic markets was considered.

The purpose of the master's thesis is to explore the possibility of using ultrasonic control of large diameter and size pipes.

The developed system can be applied to non-destructive control as a primary or auxiliary. Also, due to the versatility of the algorithms, work with minimal changes can be rebuilt for another way of finding defects in the pipelines.

Keywords: pipeline control, LRUT, PEP, automated NDT.