ABSTRACT

Master's dissertation: 112 pages, 26 figures, 28 tables, 10 Annexes, and 56 references.

Research goal and objectives: increasing the efficiency of the management system of a biosimilar robot for the purposes of NRK in the conditions of Industry 4.0.

Object of research: is biosimilar /biomimetic robots.

Subject of research: Control systems of a biosimilar/biomimetic robot

Scientific contribution: the concept of " biosimilar " and the features of their use in Non-Destructive Testing (NDT) are defined; the types of biosimilar robots are summarized; the features of the biosimilar robot control system are revealed; the main areas of improvement of the biosimilar robot management system are proposed; construction and modeling of a biosimilar robot was carried out; a start-up project has been developed.

Scientific novelty of the obtained results

For the first time, the definition of the concept of a biosimilar robot is given.

The management system of a biosimilar robot based on the use of Industry 4.0 achievements has been improved.

Provisions regarding the use of biosimilar robots in non-destructive testing were further developed.

Practical value of obtained results: Increasing the efficiency of the biosimilar robot management system leads to expanding the possibilities of their use both in the NDT and in other areas.

Publications: The main directions of improvement of the control system of biosimilar robots in Non-Destructive Testing in the conditions of Industry 4.0 // Kuranda A.V., Kyrychuk Yu.V. - Proceedings of the XIX All-Ukrainian scientific and practical conference of students, postgraduates and young scientists "Efficiency and automation of engineering solutions in instrument construction", December 20-21, 2023 - K.: PBF, KPI named after Igor Sikorsky. - 2023. - 480 p. (p. 185 – 188)

keywords: ARTIFICIAL INTELLIGENCE, BIOSIMILAR ROBOT, CONTROL SYSTEM, INDUSTRY 4.0, NON-DESTRUCTIVE TESTING, SENSOR.