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**DESIGNING A ROBOT SPIDER FOR THE NEEDS
OF STI AT THE NATIONAL RESEARCH
NUCLEAR UNIVERSITY MEPhI**

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Robotics is revolutionizing various aspects of our lives. Robots endowed with intelligent capabilities and autonomous functioning are becoming more common in various industries. Spider robots have huge potential. Their superior mobility, obstacle avoidance, and dexterity make them ideal candidates for numerous applications, including reconnaissance, surveillance, repair, and nursing. Understanding robotics is becoming increasingly important in our rapidly evolving technological landscape.

The introduction of robospiders will solve a number of different tasks. First of all, this will allow solving various technical tasks in hard-to-reach and/or dangerous places. This will increase the safety level of research laboratories. The use of such technology will simplify and secure the performance of technical tasks.

In this work, a robot spider was developed, the necessary components were selected, all three circuits and a motion simulation program were developed, and PWM, small product sizes, and lithium-ion batteries were used, which increases reliability, reduces economic costs, and meets the criteria of the technical specification. In addition, the system ensures uninterrupted operation at maximum power for 30 minutes.

REFERENCES

1. M5Stack equipment manufacturer website – Arisona, 2023. – URL: <https://m5stack.com> (date of request 26.08.2024).
2. Robopower design site – Moscow, 2023. – URL: <https://microkontroller.ru> (date of request 17.09.2024).