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GENERATING CONTROL ACTIONS ALGORITHM FOR A CLOSED CONTROL SYSTEM OF A SMALL ELECTRIC VEHICLE CHARGER

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Введение. The development of an algorithm for a closed control system for a small electric vehicle charger is essential for improving the efficiency, safety, and reliability of the charging process, extending the battery's lifespan, and making electric vehicles a more practical and attractive alternative to conventional vehicles. There are several reasons to create such an approach. An algorithm can regulate the charging process to optimize the charging time and reduce energy losses, making it more efficient and cost-effective. The algorithm can prevent overheating, overcharging, and short circuits, ensuring the safety of the charging process. The algorithm can protect the battery from being damaged by regulating the charging current, voltage, and temperature, which can extend its lifespan and improve its performance.

Основная часть. This report highlights the development of an algorithm for a closed control system for a small electric vehicle charger. The report begins by describing the structure and principle of operation of the charger, and a control system model is created that considers the feedback implemented in the physical system. The primary objective of the algorithm is to generate settings for the primary battery charging modes based on the battery assembly parameters and environmental conditions.

The algorithm developed is focused on providing a wide range of charge current regulation, which is adaptable for use with the most commonly used battery cells. The report presents the simulation modeling results of the system using the developed algorithm and an assessment of its effectiveness.

Furthermore, the report describes the possibilities of further improvement of the developed algorithm and its applications. The developed algorithm can be further improved by incorporating advanced artificial intelligence techniques, such as machine learning and deep learning, to enhance the accuracy and efficiency of the control system. Additionally, the application of the algorithm can be extended to other types of electric vehicles, making it an important tool for charging systems in the future.

Выводы. In conclusion, the development of the algorithm for a closed control system for a small electric vehicle charger is a significant achievement in the field of electric vehicle technology. The algorithm's wide range of charge current regulation and adaptability to the most commonly used battery cells make it an essential tool for charging systems in the future. The report's findings demonstrate the effectiveness of the developed algorithm, and its possibilities for further improvement and application provide a promising outlook for the future of electric vehicle technology.

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