

## **Perspectives of eco-efficiency improving equipment and technology of ground transport**

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### **Abstract**

© 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved. The article addresses the problem of ensuring the ecological efficiency of innovative developments at the stages of the life cycle of ground transport and its infrastructure. Transport, in particular ground one, is one of the three main sources of environmental pollution. Industrial production and operation of vehicles covers the production, operation, repair and disposal processes that contribute the most to the gross emissions of harmful and toxic products, and also generates significant amounts of waste. To ensure the effectiveness of developments with the best combination of criteria for technical excellence, cost indicators and minimization of harmful and toxic emissions in the implementation of innovation, an experimental method for determining energy use indicators with the registration of the most important parameters is proposed. To automate the testing process, a stand with a hardware-software measuring and computing system was created that provides measurement, recording and processing of parameters of technological processes and equipment. The test results are saved in a graphical and tabular form, which is convenient for their analysis. Examples of the successful use of the developed method and the stand for the implementation of some innovative developments are presented. Based on the analysis of the results of bench tests, with minimal costs and time, the necessary adjustments to design decisions and the implementation of resource-saving, environmentally efficient technologies and equipment were made. A promising direction of using the proposed work is that along with the control of energy and process parameters, it becomes possible to include in the measurement equipment a set of devices that monitor the parameters of pollutant emissions. In this case, the test process will be documented, since the registration of all parameters is time-related.

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### **Keywords**

Efficiency, Environment, Ground transportation, Information-measuring system, Resource-saving

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