

OPINION

by assoc. prof. Simeon Penchev Iliev,

University of Ruse „Angel Kanchev“

on the dissertation for the educational and scientific degree

„Doctor“

**Topic: "STUDYING THE INFLUENCE OF FUEL TYPE ON THE WORKING
PROCESS OF A DIESEL ENGINE"**

Author: eng. Velichka Rosenova Georgieva

Science field: 5. Technical sciences

Professional field: 5.5. Transport, shipping and aviation

The opinion was prepared in accordance with Order N 273/08/05.2025 of the Rector of the Technical University-Varna.

1. Relevance of the problem developed in the dissertation

The transport sector is one of the most complex and important for the development of the world economy. It is strongly linked to new trends in science and technological innovations. A large part of the innovations is related to reducing pollution from road transport.

With increasing environmental requirements and the need for a sustainable energy policy, biofuels are attracting increasing interest as an alternative source of energy for internal combustion engines. In conditions of increased pollution as a result of harmful emissions in exhaust gases and the depletion of oil resources, biodiesel fuel and other types of renewable fuels are considered as an opportunity to reduce harmful emissions and dependence on fossil fuels.

In this regard, the presented dissertation examines the processes and benefits of a diesel engine operating on diesel fuel and mixtures with biodiesel fuel, which is a prerequisite for reducing harmful emissions into the environment.

Considering the above, I believe that the topic of the dissertation is relevant.

2. Contributions of the dissertation work

The dissertation work reveals scientific-applied and applied contributions. Scientific contributions are not revealed.

Scientific and applied contributions

5 scientific and applied contributions are presented.

Applied contributions

2 scientific and applied contributions are presented.

In general, I accept the conclusions and contributions made.

3. Opinions, critical notes and recommendations for dissertations

I have the following comments on the work:

1. In places, the measurement units used are not in the SI system.
2. The legend of the indicator diagrams is in very small font and is difficult to read.

The gaps and inaccuracies mentioned here and other discovered in the dissertation do not reduce its significance. It meets the requirements for presenting a doctoral dissertation and an abstract under the ZRASRB.

CONCLUSION

The appropriate study of the literary sources on the problem, with the appropriately chosen mathematical model, the presented scientific-applied and applied contributions and the publications made show an increase in the professional training of the doctoral student and opportunities for future independent and team research. The results of the work on the dissertation work have been presented in 5 reports at scientific conferences.

I accept that the presented materials comply with the Law on the Development of the Academic Staff, the Regulations for its implementation and the Procedural Rules of the Technical University of Varna. Therefore, I give a positive assessment of the work on the dissertation of eng. Velichka Rosenova Georgieva and propose that he be awarded the ONS "doctor" in the field of higher education 5. Technical sciences, professional field 5.5. Transport, shipping and aviation.

07.06.2025

Ruse

Prepared:

/assoc. prof. Simeon Iliev/