

STATEMENT

on a procedure for academic position "Associate Professor" in
Professional domain: **5.5 „Transport, shipping and aviation“**
Subject: **„Test and control of the transport equipment“**,
procedure released in the State Journal № 31/19.04.2022
with candidate Ass. Prof. PhD Eng. Veselin Todorov Mihaylov

Statement written by: **Assoc. Prof. PhD Eng. Plamen Borisov Punov**, TU-Sofia

1. General characteristics of the candidate's scientific and applied activities

Mr. Veselin Mihaylov defended his PhD thesis at TU-Varna on 13.05.2016 entitled: Research on noise emissions of automotive diesel engines within Scientific domain: „Internal combustion engines “. In this procedure he presents 35 scientific articles as 10 of them have been published in databases Scopus and WoS and they are considered as a habilitation thesis entitled: Base approaches for engine and transport machinery testing. Three of the other 25 scientific papers are also referenced in Scopus while the others are published in the reviewed proceedings. There are seven citation presented as all of them are referenced in Scopus or WoS. The main scientific contributions of the candidate are determination of the fuel injectors characteristics for gasoline, diesel and gas engines, acoustic and vibration of ICEs, implementation of alternative fuels (biogas, methane and etc.) and diesel fuel treated by nanoparticles as well as some researches related to crankshaft dynamics. An important part of the candidate's activities is related to development and modernization of test benches. Mr. Veselin Mihaylov has been participated in 19 scientific projects while two of the were funded by National Scientific Fund.

Considering the main requirements of the Regulations on the terms and conditions for holding academic positions at the Technical University of Varna, all of them are respected.

2. Assessment the candidate's teaching activities.

The candidate has been nominated as Assistant Professor and Senior Assistant Professor at the department "Transport machinery and technologies" of TU-Varna for the periods from 11.2008 to 02.2017 and from 02.2017 to now, respectively. He is the main teacher at following courses in the specialties "Transport machinery and technologies", "Transport machinery maintenance and exploitation", "Agricultural machinery and technologies" and "Automotive engineering": Internal combustion engines, Transport machinery diagnostics, ICE testing, Transport machinery testing and diagnostics, Automotive ICE, CAD in transport machinery and etc. In the last three academic years he conducted 506 classes.

Additionally, Mr. Veselin Mihaylov has been participated in several internships at Politechnic of Leiria, Wroclaw University of Technology, Kostantin Brankusi University of Targu Jiu and Tokai University. He was a supervisor on 17 graduation theses and 4 projects with students involved in them. He is involved in the department modernization.

3. Main scientific and applied contributions

The scientific papers of the candidate, according to the reference presented by him, are divided into four thematic directions: Research of fuel supply parameters in internal combustion engines, Noise and vibration environmental characteristics of internal combustion engines and transport equipment, Factors affecting the engine operating cycle (fuel additives, alternative fuels and etc.) and General scientific researches. Nine scientific and applied contributions are indicated in the reference. I accept the proposed contributions in the original form but I consider that contributions 3, 6 and 9 are applied contributions. Contributions 1 and 8 can be attributed to the group of Proving by new means essential new aspects of already existing scientific fields, problems, theories, hypotheses. Contributions 2 to 7 and 9, I attribute to the Creation of new classifications, methods, constructions and technologies. All presented citations of the candidate's scientific papers are in publications referenced and indexed in the world databases, and one of the citations is in the SAE proceedings. I accept all the contributions as the candidate personal work.

4. Impact of the contributions to the science and practice

I consider the contributions to be significant for science and practice, since problems related to fuel injection, mixture formation, the use of additives and alternative fuels are at the heart of improving the environmental performance of internal combustion engines. The application of the proposed systems and methods would allow the reduction of toxic components in exhaust gases, greenhouse gas emissions, as well as noise and vibrations from ICE. I believe that the results of the candidate's scientific work are well known both in Bulgaria and abroad, the proof of this is the cooperation with foreign scientific teams and the citations of the papers abroad.

5. Opinion, suggestions and remarks.

I don't have critical remarks but I would suggest the candidate in the future try to present the most significant results in the most prestigious International Journals with Impact Factor as well as to propose academic books to the students.

CONCLUSION

On the bases of the candidate's scientific contributions and teaching activities, I consider that he could define correctly the aims of his researches and to use proper approaches and technical means in order to achieve the important scientific results. He could work in cooperation with other authors which give me a confidence that he could manage to be a supervisor of PhD students. As I have personal contact with him on the several scientific forums, I have really positive personal opinion from his scientific activities as well as he is very motivated to improve the laboratories in his department and to keep good relation with the business sector in Bulgaria. I consider that his scientific contributions are important and it meets the requirements of the Law for academic staff development in Republic of Bulgaria.

As a conclusion, I suggest the members of the jury to nominate Ass. Prof. PhD Eng. Veselin Todorov Mihaylov as Associate Professor in Professional domain: 5.5 „Transport, shipping and aviation”, Subject „Test and control of the transport equipment“

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Member of jury:

/Assoc. Prof. Plamen Punov/