

ATTITUDE

by PhD. Mihail Kolev Karshakov - Professor at the University "Angel Kanchev"

on the materials submitted for participation in the loan competition of the academic position "Associate Professor" of Plovdiv University "Paisii Hilendarski"

in scientific area 5. Technical sciences,
professional field 5.1. Mechanical Engineering,
speciality "Technology of Mechanical Engineering"

According to Order P33-4124 from 24.08.2020 of the Rector of PU "Paisii Hilendarski" I have been appointed a member of the Scientific Jury for announcing the competition.

1. General presentation of the procedure and the applicant.

In the competition for "Associate Professor", announced in the State Gazette no. 57 of June 26, 2020 and on the website of Paisii Hilendarski University of Plovdiv for the needs of the Department of Mechanical Engineering and Transport, Faculty of Physics and Technology, as the only one applicant is Chief Assistant Professor, PhD, Eng. Velko Slavchev Rupetsov in the same department.

The applicant was born in Smolyan in 1965. In 1983 he completed a secondary education at the Secondary Professional Technical School of Mechanical Engineering in Smolyan with a qualification "turner-miller". He graduated from "Angel Kanchev" University of Ruse in 1991 with a degree in "Complex mechanization and production lines in mechanical engineering" with additional specialization "Robotics, robotic systems and FAMS". In 2015 he defended his dissertation at the University of Food Technology - Plovdiv and acquired the degree of Doctor. He worked in Smolyan consecutively as a turner-miller (until 1984) at the Car repair factory, as a design engineer (until 1994), as an assistant and a senior assistant (until 1998) at the Institute of Mechanical Engineering and Transport. In 1999 he was elected for chief assistant at Plovdiv University "Paisii Hilendarski", Technical College - Smolyan, Department of Mechanical Engineering and Transport.

The presented complex of materials on paper is in accordance with the Regulations for development of the academic staff of Plovdiv University and includes the following documents: curriculum vitae, diplomas, list of scientific papers, reference for implementation of the minimum national and additional requirements, annotation of materials under Art. 65 of RDASPU (including self-assessment of contributions), reports on teaching and research activities.

The applicant has submitted a list of 33 scientific papers including: dissertation for awarding the educational and scientific degree "Doctor", one independent monograph, one book based on the dissertation, one textbook and two schoolbooks, 27 scientific publications. I accept for review only scientific publications (27) and I report the remaining papers for the final evaluation.

All documents are accompanied by non-doubtful references proving the truth of the information provided. I especially note the reference for fulfillment of the requirements in RILDACRB /Rules for the implementation of the Law on the Development of the Academic Composition in the Republic of Bulgaria/, in which it is convincingly proved that the minimum required number of points for holding the academic position "associate professor" are observed by all indicators.

2. General characteristics of the applicant's activity.

The educational and pedagogical activity of Chief Assistant Professor, PhD, Rupetsov is involved in active participation in the learning process with students from 2 bachelor's and 1 master's degree courses. In the last 5 years he has been conducting classes in 14 disciplines, including: Mechanical engineering technology I and II part; Machine components; Metal cutting machines and equipment; Computer design of machines, processes and systems; Nanotechnologies in the machine building and etc. In 7 of them he lead lectures and laboratory exercises and the rest of them - laboratory and seminar exercises. The applicant is a co-author of a textbook and a guide for laboratory exercises in one of the main disciplines Mechanical engineering technology for the specialty Mechanical Engineering and Technology. He is a co-author of a textbook for exercises in engineering graphics and author of an electronic course on automated development of technical documentation. He was the scientific supervisor of 32 graduates who without exception defended with excellent grades and students of the Erasmus + program. Under the same program he was a coordinator and lecturer at the Polytechnic University - Bucharest. He is the author of the curricula for 22 disciplines and a participant in the development of curricula. All this is supported by undoubted documents and gives grounds to claim that the applicant has gained the necessary teaching experience and pedagogical skills, which allows him to work productively with students studying mechanical engineering and technology.

The scientific activity of Chief Assistant Professor, PhD, Rupetsov is reflected in the scientific publications presented in the competition. Taking into account that 17 of publications (62%) are in a foreign language, of which 7 are in publications that are refereed and indexed in notable databases, and the rest are reported at scientific forums in Bulgaria and abroad, I think that he already known in the scientific community. The number of mentioned publications, especially by foreign authors, also gives grounds for recognition in these circles. In 12 of the publications the applicant is an independent author or first co-author, which means of a significant contribution to research. His scientific interests extend in several areas, but the main ones are the protective and durable coatings of parts and tools, where the publications

are characterized by higher depth, usefulness and scientific value, which is evident from the citations.

The research activity of the applicant is related to participation in 4 research projects, funded by the Fund of Scientific Research. The reference for the implementation of scientific and applied scientific developments is attached, which shows that they have found application both in industrial companies and in teaching and research work. The results achieved in this activity show that the applicant is a researcher and implementer with proven achievements.

I accept the formulation and classification of the contributions in the scientific production, presented by the applicant as scientifically applied and applied. They are achieved as a result of his work in three areas: development, deposition and research of multi-component, multi-layer coatings to protect metal surfaces from wear; creation of funds for conducting research; improvement of production equipment and technologies. I accept that the mentioned contributions are a personal work of the applicant or are achieved with his personal participation and can be referred to the following groups: proving with new means of significant new aspects of already existing scientific fields, problems, theories, hypotheses; creation of new classifications, methods, constructions, technologies; obtaining confirmatory facts. An important place in the contributing part of the scientific production is occupied by the independent monographic work "Increasing the resource of details and tools in mechanical engineering by applying coatings" 2020, in which, in an accessible language for students and specialists, the accumulated experience is shared and research results that can be applied in engineering practice.

The contributions in the scientific works are relevant and significant for the mechanical engineering science and practice. I have no reason to doubt that they are the personal work of the applicant or were achieved with his participation. The development and improvement of modern technologies requires knowledge and skills in various and sometimes numerous areas, where scientific achievements are often impossible without collective participation. The presented materials give me grounds to accept the applicant as a scientist who is able to analyze and guide the solution of complex scientific problems, to bring them to practical realization, and with the achieved results to modernize and update the learning process.

3. Critical remarks and recommendations.

I have no significant remarks on the works submitted by the applicant, but I have some recommendations:

1. In the materials of the competition I did not find information about received patents or utility models. Familiarity with the contributions gives me reason to think that part of what has been achieved in the field of coatings could be granted patent protection, which must be claimed.

2. Some of the contributions look like annotations of scientific papers - it would be good if their wording is shorter to highlight the contributions.

3. The applicant's scientific publications cover a relatively wide range of technical problems, which is useful and common in the first habilitation, but it would be useful in future work, his scientific interests to find a narrower direction in which to achieve even more significant results.

CONCLUSION

The documents and materials submitted by Chief Assistant Professor, PhD, Rupetsov **meet all the requirements** of the Law for the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for application of LDASRB and the respective Regulations of Plovdiv University "Paisii Hilendarski".

The applicant in the competition **has submitted a sufficient number** of scientific papers published after the materials used in the defense of educational qualification degree Doctor. Theoretical developments have practical applicability, as some of them are directly oriented to the educational work. His scientific and teaching qualifications **are unquestionable**.

After getting acquainted with the materials and scientific papers presented in the competition, analysis of their significance and the scientific and applied contributions contained in them, I find it reasonable to give my **positive assessment and recommend** to the Scientific Jury to prepare a report-proposal to the Faculty Council of Faculty of Physics and Technology **to choose** Chief Assistant Professor, PhD, Eng. Velko Slavchev Rupetsov for the academic position "Associate Professor" at the University of Plovdiv "Paisii Hilendarski" in the professional field: 5.1. Mechanical Engineering, speciality: "Technology of Mechanical Engineering".

26.10.2020 г.

Member of the Scientific Jury:

(Prof. PhD. Mihail Karshakov)