

Review

By Assoc. Prof. Dr. Desislava Atanasova Konstantinova, MD, Department of Dental Materials Science and Prosthetic Dentistry, FDM, MU "Prof. Dr. Paraskev Stoyanov" - Varna,

Member of the Scientific Jury, according to the order of the Rector of the MU – Varna № P-109-522/30.11.2023.

Regarding: competition for the academic position "associate professor", field of higher education 7. Health care and sports, professional direction 7.2 Dental medicine, specialty "prosthetic dentistry", for the needs of the department "Dental materials science and propaedeutics of prosthetic dentistry", Faculty of Dental Medicine, **announced in the State Gazette no. 83 of 3.10.2023**

Regulations

1. Section III - Occupancy of the Academic Position "Associate Professor" from chapter three, according to the Regulations for the Development of the Academic Staff of the MU "Prof. Dr. Paraskev Stoyanov" - Varna
2. Appendix No. 1 of the Regulations for the Development of the Academic Staff of the MU "Prof. Dr. Paraskev Stoyanov" - Varna
3. Order of the Rector to determine the composition of the Scientific Jury
4. Protocol No. 1 of the first meeting of the Scientific Jury

For participation in the competition **there is one set of documents required according to the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its Implementation and the Rules for the Development of the Academic Staff of the MU "Prof. Dr. Paraskev Stoyanov" - Varna. One candidate participated - Dr. Dzhendo Atanasov Dzhendov, Ph.D., chief assistant in the Department of "Dental Materials Science and Prosthetic Dentistry", FDM, MU "Prof. Dr. Paraskev Stoyanov" - Varna.**

According to Protocol No. 1 of the first meeting of the Scientific Jury, I have been appointed to prepare a review on the procedure for occupying the academic position "Associate Professor".

Brief biographical data of the applicant

Dr. Dzhendo Atanasov Dzhendov was born on March 11, 1976 in the city of Dobrich. In 2000, he graduated from Varna Technical University, majoring in Ecology and Environmental Protection.

In 1999, he began to study dentistry at the Medical University - Plovdiv and in 2006 he graduated with a master's degree in dentistry. Until 2014, he was a dental practitioner. From 2009 to 2018, he was a full-time assistant in the Department of Prosthetic Dentistry. From 2018 to the present, he is chief assistant at the same department.

He declares to be fluent in English, German and Russian.

General characteristics of the candidate's scientific research and applied scientific activity

In order to participate in the competition, Dr. Dzhendov submits a total of **19 scientific works** as evidence covering the minimum scientometric indicators for holding the title of associate professor. Of these: dissertation work - 1 piece, monograph (main habilitation thesis) - 1 piece, 7 articles in scientific publications, referenced and indexed in world-famous databases, 10 articles in scientific journals peer review, unreferenced in world-renowned databases of scientific information. (Reference 13 of attached documents).

Beyond the minimum requirements, 4 more full-text publications in Bulgarian scientific publications have been submitted (Reference 13 of the attached documents).

The scientific works presented in both lists were published in Bulgarian (9 items) and English (14 items). Of these, 7 publications are in journals indexed in Scopus and WOS. Some full-text articles have been published in magazines and conference proceedings in Bulgaria (16 items) and abroad (5 items).

According to indicator A1. Dissertation work for obtaining the educational and scientific degree "doctor" - **50 points**.

According to indicator B3. Habilitation work - monograph - **100 points**.

According to indicator G7. Publications and reports published in scientific publications, referenced and indexed in world-famous databases with scientific information - 7 issues - **130 points**.

According to indicator G8. Publications and reports published in non-refereed peer-reviewed journals or published in edited collective volumes - 10 issues - **87.12 points**

TOTAL (indicators G5-9) – 217, 12 points.

According to indicator D10. Citations or reviews in scientific publications, referenced and indexed in world-famous databases with scientific information or in monographs and collective volumes - 12 issues.

TOTAL (indicator D10-12) -180 points.

Dr. Dzhendov presents 4 full-text publications in scientific journals and anthologies, beyond the minimum scientometric requirements for holding the title of associate professor, 7 were used

for the title of senior assistant, and 3 for the acquisition of an educational and scientific degree. Doctor".

Dr. Dzhendov's monograph "THE VIRTUAL PATIENT IN DENTAL EDUCATION" includes studies, experiments and analysis of the learning process and the integration of digital dental technologies into a single "virtual patient", summarizing the advantages of using virtual patients for skill building to communicate with patients and improve clinical work skills.

The development of virtual simulators in the learning process, the integration of digital dental technologies into a single "virtual patient", the advantages of using virtual patients for skill building are discussed in student communication with the patient, taking an accurate history and clinical work skills.

The monographic work consists of 155 pages, contains 55 figures and 2 tables, the literature used includes 277 sources, of which 2 are in Cyrillic and 275 are in Latin.

Dr. Dzhendov's scientific works are divided **into two thematic areas:**

- Application of modern production technologies of 3D printing in prosthetic dentistry.
- Implementation of modern methods of teaching the students of prosthetic dentistry.

The scientific contributions under the first thematic direction are of a scientific-applied and applied nature. They refer to the study of accuracy, structure and mechanical properties of dental structures and materials produced by 3D printing.

Scientific and applied contributions:

- For the first time in Bulgaria, a complex study of the applicability of technologies with the addition of material (3D printing technologies) for the manufacture of non-removable prosthetic structures in prosthetic dentistry has been carried out.
- It was found that the bridges produced by DLP stereolithography have the highest accuracy, and the bridges produced by laser stereolithography have the highest smoothness.
- A comparative analysis of the geometrical, surface and mechanical properties of non-removable prosthetic structures made of Co-Cr alloys produced by:

- 1) conventional casting with handmade wax models;
- 2) casting from models made by 3D printing
- 3) selective laser melting.

- Bridge structures cast with 3D printed models were found to have the highest accuracy in terms of shape, dimensions and fit, but with greater roughness compared to structures made using classical technology.
- The terms "partially digitized treatment plan" and "fully digitized treatment plan" with non-removable prosthetic structures in prosthetic dentistry were defined.

Applied contributions:

- It has been found that the process of fabricating objects by layering with material (FDM) can be successfully used to make learning models.
- A new methodology has been developed to study accuracy in adjusting non-removable prosthetic structures with CAD software.
- Clinical and laboratory protocols have been created for the application of technologies with the addition of material in dental practice for the production of non-removable prosthetic structures.

In the second thematic direction, Dr. Dzhendov defines the applied nature of the contributions, which refer to the testing of modern methods and technologies in the training of students in prosthetic dentistry.

- It has been found that young dental technicians are increasingly using digitization during the work process (CAD planning through software applications), thereby increasing the accuracy of designs and reducing production time.
- It has been found that dental units are overwhelmingly designed for right-handed people and create difficulties for left-handed students. Therefore, it is appropriate to have a unit for left-handed work in the study halls of dental students.
- Application of modern methods and technologies in the training of students in prosthetic dentistry:
 - Simulation systems for filing hard dental tissues for non-removable prosthetic structures;
 - 3D printing systems in the production of non-removable prosthetic structures;
 - It has been established that electronic-based learning is a good option for learning the theoretical learning material.

I believe that these contributions have a more confirmatory nature and when applying them in Bulgaria as an innovation, we use established protocols, according to which the trainings take place.

Assessment of the candidate's academic and teaching activities

Dr. Dzhendov has 14 years, 8 months and 12 days of teaching experience as of 30.10.2023, when the certificate was issued by the Department of Human Resources at the Medical University of Varna.

The study load reference for five years ago shows that, with a required 360-hour schedule, the candidate has, respectively:

2018/2019 – 372 hours

2019/2020 – 366 hours

2020/2021 – 396 hours

2021/2022 – 464 hours

2022/2023 – 506 hours

Conclusion

In conclusion, the scientific works and evidentiary material of **Dr. Dzhendov** submitted for review for participation in the competition for the academic position of "associate professor" are sufficient in volume and fulfill the normative requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the Regulations for the development of the academic staff of the MU "Prof. Dr. Paraskev Stoyanov" - Varna.

This gives me the reason **to vote positively** for the occupation of the academic position "assoc.professor", field of higher education 7. Health care and sports, professional direction 7.2 Dental medicine, specialty "Prosthetic dentistry", for the needs of the department "Dental materials science and propaedeutics of prosthetics" dental medicine", Faculty of Dental Medicine, MU - Varna.

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Varna

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Assoc.prof. Dr. D. Konstantinova, Ph.D.

