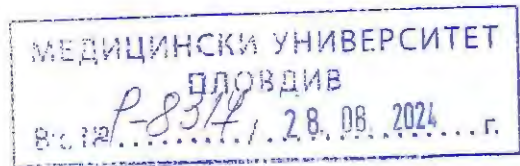


# OPINION

from

**Assoc.-prof. Ilian Vangelov Hristov, DMD, PhD**, Department of Prosthetic Dentistry, FDM - Plovdiv, elected as an internal member of the Scientific Jury, after preliminary discussion of an extended departmental council ( protocol No. 2/01.02.2024 ) , with a decision upon meeting of the Faculty Council at FDM at MU - Plovdiv according to protocol No. 3/07.02.2024. and by order No. R-2444/16.07.2024.



## **Application of endocrowns as retainers**

for the awarding of an educational and scientific degree "Doctor" under the doctoral program " Prosthetic Dentistry" in professional direction 7.2. Dentistry by field of higher education 7. Health care and sports.

Doctoral student of self-study, **Dr VIKTOR YORDANOV HADJIGAEV** , assistant-professor in the Department of Prosthetic Dentistry, FDM, MU - Plovdiv.

Scientific supervisor: **Assoc.-prof. STEPHAN CHAVDAROV ZLATEV, DMD, PhD**

### **General presentation of the procedure and the PhD student**

The presented set of materials on paper and electronic media is in accordance with the procedure and rules for acquiring the "PhD" of MU - Plovdiv.

**Dr. Viktor Hadjigaev** was born on 04.06.1980 in the city of Plovdiv. He finished his secondary education at FLS "Antoine de Saint Exupéry" in 1998 with a profile French language. In 2004, he graduated from the MU - Plovdiv with a specialty of "Dental Medicine". Since 2004, he has been practicing the profession in an independent practice. In 2006, after passing a competitive exam, he started working as an assistant-professor in the Department of Prosthetic Dentistry, FDM, MU- Plovdiv, where he works till today. In 2010 acquires a specialty in Prosthetic Dentistry. His interests are focused on implantology and CAD/CAM technologies. Regular member of the Bulgarian Dental Union, Union of Scientists in Bulgaria, Implantology Club , International Association for Dental Research .

## **Structure of the dissertation**

The dissertation work submitted for review is written on 157 pages, includes 6 tables, 17 diagrams and 28 figures. 244 literary sources are cited, of which 16 are in Cyrillic and 128 are in Latin.

### **Relevance of the topic, purpose and tasks**

The topic of the dissertation work is undeniably relevant, as the adequate restoration of endodontically treated teeth is a challenge facing a large number of clinicians. The use of endocrowns as retainers is a method that is not sufficiently advocated in modern dentistry. In his work, Dr. Hadjigaev dwells on the pros and cons of the methodology, analyzing in detail and proving its expedient application in practice. The goal and tasks are correctly and accurately formulated. With the fulfillment of the four tasks set by the doctoral student, some of the gaps in the previous studies of other authors on the subject are filled.

### **Analysis of the literature review**

The literature review is voluminous and detailed, covering 31 pages. The author examines in detail the ways to restore endodontically treated teeth, focusing on the use of post-and core restorations and endocrowns for the purpose, while also making a critical analysis of both methods. There is also a place for metal-free bridge prostheses. The different types of preparation designs are examined in detail, as well as the constructional principles in the manufacture of CAD/CAM ceramic FPDs.

### **Analysis of the set goal and related tasks**

After a critical analysis of the literature review, the doctoral student sets a precise and clear goal, namely: *through computer simulation, laboratory and clinical studies to investigate the reliability of the endocrown to be used as a retainer in FPDs*. To fulfill the main goal of the dissertation, Dr. Hadjigaev sets himself four tasks. The materials and methods used in the research are described in great detail.

- **On the first task:** From the survey conducted, it is clear that alternative "endocrown" type preparations and their advantages are poorly known and used by the dentists in Bulgaria. However, those who, despite everything, use endocrowns in their practice, do not encounter any difficulties in

making them. This group of respondents also believed that endocrowns have their place in dental practice.

- **On the second task:** An independent method for measuring the area of a complex geometric object was created and tested. The measurements made clearly show that the area for adhesive bonding of the endocrown is more than 25% larger compared to the classic crown.
- **According to the third task:** The fracture resistance of three-member bridge structures made of zirconium dioxide ceramics was studied. It was found that full-contour three-unit bridges made of ZrO<sub>2</sub> ceramics have similar fracture resistance to metal-ceramics, with the weakest point in metal-free restorations made of ZrO<sub>2</sub> being in the area of the distal connection between the abutment and the pontic.
- **On the fourth task:** A clinical evaluation of metal-free three-unit bridge restorations with different distal retainers – conventional crown and endocrown was done. The findings are that: FPDs made of laboratory composite reinforced with glass fibers can be used as a long-term restorations (up to two years) to replace a single missing tooth in the distal part of the dentition. The obtained results ultimately prove that: the endocrowns can be used as an alternative to classic crowns in prosthetics with metal-free FPDs.

### **Contributions**

The doctoral student completes the dissertation with as many as four contributions of original, three of confirmatory and two of scientific-applied nature. The most significant of them are: the creation of a digital protocol for determining the area of irregularly shaped objects, teeth, FPDs, as well as the creation of a methodology for measuring the differences in cementation area between conventional and endocrowns. It has been confirmed that metal-free FPDs made of ZrO<sub>2</sub>-based ceramics have sufficient fracture resistance to be used in the distal region of the dental arch, and that the distal junction is the most common fracture site for metal-free FPDs.

### **Publication activity of the doctoral student**

Three full-text publications in English are presented. The doctoral student took part in three scientific forums in Bulgaria, Turkey and Brazil.

## Abstract

The submitted abstract contains 57 pages and meets all requirements of the regulations for the acquisition of the "PhD" of the MU - Plovdiv and reflects the set goals, tasks, conclusions and contributions related to the dissertation work.

## CONCLUSION

The dissertation on the topic "**APPLICATION OF ENDOCROWNS AS A RETAINER**" contains scientific and applied results, representing an original contribution to science and fully meeting the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and of MU - Plovdiv.

From the material provided, it is clear that the doctoral student has made a detailed and comprehensive analysis of the literary facts. He has thoroughly familiarized himself with the research materials and methods. The contributions are significant and with a practical application. The dissertation indisputably proves that **Dr. Viktor Yordanov Hadjigaev** possesses in-depth theoretical knowledge and practical abilities in the specialty " Prosthetic dentistry" by demonstrating qualities and skills for independent conduct of scientific research and interpretation of the obtained results.

As a result of the above, I will vote with conviction and categorically "**POSSITIVE**" the awarding of the educational and scientific degree "PhD" to **Dr. Viktor Yordanov Hadjigaev** in the doctoral program " Prosthetic Dentistry" in professional direction 7.2. Dentistry by field of higher education 7. Health care and sports.

Prepared the opinion:



Заличено на основание  
Чл.5 §1, б. "В" Регламент (ЕС)2016/679

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Plovdiv

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