

## OPINION

**By Assoc. Prof. Dr. Maya Dimitrova Doychinova, PhD,**

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**Department of Conservative Dentistry and Oral Pathology, FDM-MU Varna, internal member of the scientific jury by order P-109-115/31.03.2021 and protocol №1/09.04.2021 from a meeting of the scientific Jury**

**On dissertation for awarding the educational and scientific degree “Doctor of Philosophy”- PhD**

**Topic: Factors Associated with Photopolymerization in Dentistry**

**Author: Dr. Georgi Plamenov Georgiev**

**Doctoral program in Therapeutic Dental Medicine**

**Form of doctoral studies: self-preparatory form**

**Department: „Conservative Dentistry and Oral Pathology“, FDM, MU Varna**

**Scientific supervisor: Prof. Eng. Tsanka Dikova, D.Sc. - MU Varna**

**Prof. Vladimir Panov, D.Sc.**

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

The presented set of documents and material on paper and on electronic media is prepared correctly, complying with the requirements of the Procedure for awarding educational and scientific degree doctor of Medical University of Varna, regulations of MU Varna and includes the following documents:

1. Enrollment order № P-109-242/18.05.2018
2. Protocol from the Department's Council with a positive decision on the readiness for defense and election of the members of scientific jury №76/25.02.2021, deduction order with the right to defense № P-109-115/31.03.2021
3. European form of CV signed by the author
4. Doctoral minimum exam report, list and copies of the publications related to the dissertation, list of participations in scientific events
5. Copy of the diploma of completed Master's degree
6. Dissertation
7. Abstract

Dr. Georgi Georgiev is born in 1988 in Varna. He graduates from high school in Dobrich in 2007 and completes his Master's in Dental medicine in 2013 in FDM, MU- Varna. His professional clinical experience begins in 2013 as a doctor of dental medicine in a private practice in Varna. The next year Dr. Georgiev starts work as an assistant-professor in the Department of Conservative dentistry and Oral pathology in FDM-Varna. He takes part in the educational course - preclinical and clinical practical classes, both in Bulgarian and in English language.

### **Structural evaluation of the dissertation**

The dissertation consists of 197 standard pages and is illustrated with 24 tables, 45 figures. In structural terms the proportional ratio between the main parts of the dissertation is observed.

**The bibliography** includes 178 literary sources, of which 4 in Cyrillic and 174 in Latin.

### **Relevance of the topic of the dissertation**

The introduction of the photopolymerizing composites is an event that changes fundamentally the clinical paradigms in the field of the restorative dental medicine. The increased esthetic requirements of the patients, the chance to restore the lost tooth tissues in a way that perfectly recreates the natural characteristics of the enamel and the dentin, as well as the relatively good long term prognosis are factors allowing the frequent use of these type of materials in every dental practice.

Nevertheless, there are some drawbacks of the photopolymerizing composites due mainly to the imperfect polymerizing process. In this sense all types of scientific investigations aiming at clarifying the issues concerning the polymerizing process in regards with the light intensity as well as the battery charge and the longevity of use of the lamps are justified. As a conclusion, in my opinion the topic of the dissertation is highly relevant.

### **Knowledge of the problem- literature review**

To my opinion Dr. Georgiev goes sufficiently in-depth on the issues subject of this dissertation – main characteristics of the composite materials and the ambiguities regarding the polymerization process. The topic is systematically researched and there is evidence of its detailed knowledge during the entire course of the dissertation. The interpretation of the scientific data, the realization of the experiments and the analysis of the results are achieved in an intelligent and creative manner.

In the literature review Dr.Georgiev logically and in full details studies subjects related both to the factors defining the shrinkage dues to polymerization and the means of controlling them. In this respect I consider that the mandatory requirements to the literature review as a part of a developed dissertation to be fulfilled.

### **Aim and tasks**

The aim, based on the analysis of the literature review and the unsolved problem is correctly defined. By the realization of the tasks, the analysis and the discussion of the obtained results the so-defined aim has the full potential to be achieved.

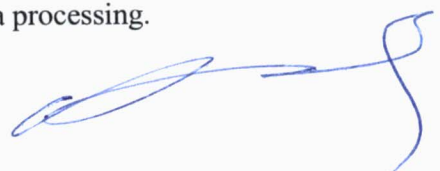
All the tasks are originally thought through and perfectly well executed.

The chosen methodology allows the realization of the researches on the 4 exactly formulated tasks.

### **Materials and methods**

The material on the 4 tasks is sufficient, carefully chosen according to well defined parameters and correctly distributed. The methods of analysis are precise and scientifically proven. The criteria of choosing the investigated material are concrete.

Statistical methods are precise and skillfully selected for the data processing.



## **Results and discussion**

The results on all 4 objectives are carefully checked.

**First task:** Dr. Georiev concludes, that the decrease in light's intensity, related to the discharging of the battery, results in imperfect polymerization. The conclusion is relevant for 4 of the type of diode lamps subject to the study. The results are graphically presented by three figures and one table.

**Second task:** Similar results are achieved as far as the influence of the light's intensity. The decrease in the intensity observed after long and frequent use of the lamps leads to incomplete and defective polymerization. The results are presented in one table and six figures.

**The results on the third task** concern the effect of light's intensity, radiation time and the thickness of the photo composite layer compares on the hardness of the composites. The various obtained results are summarized in 18 figures and 5 tables.

**Fourth task:** The results achieved of this task allow the elaboration of the most valuable in practical regard part of the dissertation- the established recommended regimens for photopolymerizing of three of the composites subject of the study.

## **Evaluation of the publications and the personal contributions of the doctoral student**

### **Conclusions**

Based on the results on each task the author offers great number of conclusions, which correspond to the statistically analyzed data.

### **Contributions**

Dr. Georgiev divides the contributions of his scientific work in tow groups – theoretical and applied -practical. I agree with the self-assessment of the contributions of this dissertation. The summarized recommendations to the doctors of dental medicine are of high clinical and treatment value and are defined from the author as a confirmative contribution

## **Evaluation of the publications of the dissertation**

According to the requirements of MU-Varna for awarding the scientific and educational degree Doctor of Philosophy, Dr. Georgiev presents 3 full text publications in which he is the leading author as well as 3 participations in scientific congresses, all in English and in thematic connection with the dissertation.

The dissertation of Dr. Georgiev is a complete work and is an original contribution to the science. In my opinion, the dissertation proves that the doctoral student has the needed theoretical knowledge concerning the topic and is fully able to conduct independent investigations. There is undisputable evidence for the good professional skills, the profound knowledge throughout the entire course of this scientific work, where logically and in very good professional language are classified theoretical literature facts, own results and their original interpretation, as well as main conclusions. In respect with this I consider the aim of this dissertation as achieved.

The obtained results and conclusions are with applied character.



## 7. Author's abstract

The author's abstract is correctly structured, well-illustrated and corresponds with the main parts of the dissertation. In my opinion the abstract is presented according to requirements of MU Varna.

## RECOMMENDATIONS

The dissertation of Dr.Georgiev is methodically and properly planned, carefully performed and professionally presented. My recommendations to Dr.Georgiev are in two direction.

On one hand I believe the when formulating the conclusions one should aim at being extremely laconic and concrete. The number of conclusions should be as minimal as possible

On the other hand, my other recommendation concerns the spreading of the knowledge and protocols among the practicing dentists, by means of different professional forums, lectures and similar activities.

## CONCLUSION

The dissertation of Dr.Georgiev presented to me for an opinion, is an original, interdisciplinary, relevant scientific work that deserves a positive assessment.

The dissertation includes practical results that are an original scientific contribution and meet the requirements of the Law for development of the Academic staff in the Republic of Bulgaria and the Regulation for its implementation and the Regulation of MU Varna.

After the analysis, I give a positive assessment for the dissertation on "Factors Associated with Photopolymerization in Dentistry" and **I will vote "yes" for the award of educational and scientific degree "Doctor of Philosophy -PhD" in the scientific specialty Therapeutic dental medicine to Dr. Georgi Plamenov Georgiev.**

20.05.2021

Varna

**Assoc. Prof. Dr. Maya Doychinova, PhD**  
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