

Supervisor's opinion on the Ph.D. thesis  
**“Preparation of (bio)polymer matrices for substance transfer and study of their  
release”**  
written by  
**Monika Muchová**  
submitted to the  
**Tomas Bata University in Zlín**

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Ing. Monika Muchová, studied Ph.D. programme 'Technology of Macromolecular Compounds' at the Faculty of Technology, TBU, in Zlín, Czech Republic. Within her studies, she has fulfilled all duties connected with the study programme and successfully passed the state doctoral exam in 2023. Her dissertation work is focused on the preparation and characterization of hydrogels from a synthetic polymer - PVA and modified polysaccharides, namely dialdehyde cellulose, dextran, dextrin, and hyaluronic acid. The cross-linking studies were performed to obtain hydrogels suitable for active pharmaceutical ingredients release in topical applications. The dissertation was submitted in the form of a monograph equipped with two appendices. The first part of the dissertation was focused on basic hydrogel system preparation and studies of the release of two model compounds, namely rutin and caffeine. The second part of the dissertation focused on a deeper understanding of the crosslinking process to clarify the influence of the PVA molecular weight and molecular architecture of the crosslinking agent, which is the dialdehyde polysaccharides. The core of the dissertation was embodied in two publications in impacted journals, first in Carbohydrate Polymers and the second in Materials Science and Engineering: C, where Monika contributed as the first and main author. Besides that, Monika is a co-author of four other papers; two of them are already visible in WoS, one is published but not yet available in WoS, and the last one is under revision.

Monika Muchová presented her results at international conferences with full-text contributions in proceedings, one of which was her active presentation. Monika also spent two months interning with Dr. Ana Paula Mora Tavares at the University of Aveiro.

To provide a complete picture, I also confirm that no plagiarism was indicated by similarity analysis in anti-plagiarism text-checking systems.

To summarize, during her study at the TBU in Zlín, Monika Muchová has demonstrated sufficient diligence, knowledge and effort necessary for the successful fulfilment of the studied Ph.D. programme. With regard to these facts and according to my opinion, the submitted dissertation work is well conceived, and I recommend it to be defended and, upon successful defence, Monika Muchová will be awarded the Doctor of Philosophy (Ph.D.) degree.

Zlín 8. 11. 2023

Assoc. Prof. Ing. et Ing. Ivo Kuřitka, Ph.D. et Ph.D.  
Supervisor