



Faculty  
of Science

Palacký University  
Olomouc

## Record of Dissertation Thesis Defence

Candidate: Yousef Murtaja  
Study program: P0531D130001 Nanomaterial Chemistry  
Department: Department of Physical Chemistry  
Head of committee: doc. RNDr. Robert Pucek, Ph.D.

After introducing the committee, Yousef Murtaja gave his lecture: "Self-organized biopolymer layers and coatings with mineral fillers for special applications", presenting the results of several projects pursued during the study.

After the lecture, he responded to questions and comments in the review reports prepared by Prof. Marián Valko from STU Bratislava and Prof. Petr Praus from VŠB - Technical University Ostrava. Both reviewers stated in their reviews that the thesis met the necessary requirements for a successful defence. The following questions were also raised by the committee and answered by the candidate:

Assoc. Prof. Panáček: Nanoparticles of  $\text{CaCO}_3$  were prepared? How it was characterized?

Prof. Kvítek: Can you explain the change in mechanical properties with nano clays and nano  $\text{CaCO}_3$ ? Can you explain, why are nano calcium carbonate are worse?

Prof. Praus: Why was calcium carbonate selected?

Assoc. Prof. Berka: How reproducible are your results?

Assoc. Prof. Berka: How often are composites of polymers with nanofillers used in 3D printing?

The student answered all the questions with sufficient knowledge.

Prof. Lapčík then appraised the student work on studies and thesis.

Finally, the committee stated that he fulfilled the conditions for successfully defending his PhD thesis.  
(X votes yes/0 no / 0 invalid)

Olomouc, 5.2.2024

doc. RNDr. Robert Pucek, Ph.D.

Head of the Ph.D. committee