

POZNAN UNIVERSITY OF TECHNOLOGY DOCTORAL SCHOOL



The result of the mid-term assessment together with the justification Wynik oceny śródkresowej wraz z uzasadnieniem



for the period 01.10.2020 to 31.08.2022

Beata Tim

the doctoral student at PUT Doctoral School / doktorant Szkoły Doktorskiej PP

discipline of science / dyscyplina naukowa: inżynieria materiałowa / materials engineering

The result of assessment / Wynik oceny

Positive / Pozytywna*	Negative / Negatywna*
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Justification / Uzasadnienie

The final assessment of doctoral student is positive due to Miss Beata Tim achievements in research, activities in results dissemination and other organizational activities, which are as follows:

1. Scientific report delivered by M.Sc. Beata Tim in the parts 2&3 proves that realization of her IRP is proportional to the time used for its realization (~50%). Miss B. Tim was focused on the determination of interactions between Au nanoparticles and organic molecules within created, using Langmuir-Blodgett technique, thin films. At first, she was able to optimize the method of creation of the active substrates composed of Au nanorods covered by poly(ethylene oxide) - PEG-SH and composed of Au-spherical nanoparticles. She has used diverse highly advanced experimental techniques to characterize physical properties of those systems, as the con-focal microscopy, the UV-VIS absorption spectroscopy, TEM microscopy, X-ray diffraction (SAXRD), Surface Enhanced Raman Spectroscopy and Brewster Angle Microscopy. M.Sc. B. Tim has analyzed the basic thermodynamic parameters of created thin films and determined the molecules' organization at the air-liquid interface excluding creation of Au-NRs aggregates. She also found that Au-NRs photo-activation increases the packing density of the DPPC organic molecules within LB films but does not influence the structure and DPPC molecules orientation. It is also worth to mention Miss B. Tim's hard work on systematic literature studies of recent advances in studies of above mentioned or similar systems. She is also the first author of 3 scientific papers published in highly rated journals as ASS, JML and IJMS (IF above 6.0). These publications may serve as the best assessment of this work.
2. Other scientific achievements reported in the Part 4th and other activities directly related to implementation of doctoral dissertation were also positively assessed as Miss B. Tim presented 1 poster during national Conference on Molecular Crystals and she has applied for PRELUDIUM project to The National Science Center and she is an active researcher within SONATA 15 project.
3. The obtained scientific results and publications up to now, give a very good base for next grant applications by M.Sc. Beata Tim as the project head
4. Her Presentation of Achievements was very well prepared and delivered, and answers to all questions satisfied all members of the Commission.

On behalf of the Commission / Za Komisję

September 12th, 2022

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Date


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Legible signature of Head of Commission

* delete as appropriate / niepotrzebne skreślić