

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



Sechout Arouna Nchouwet Mefire

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

discipline of science / dyscyplina naukowa: **inżynieria środowiska, górnictwo i energetyka / environmental engineering, mining and energy**

The result of assessment / Wynik oceny

Positive / Pozytywna*	Negative / Negatywna*
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Justification / Uzasadnienie

The subject of the PhD thesis concerns issues related to the possibility of phosphorus recovery contained in municipal wastewater. The main part of the work carried out during the first two years of the doctorate was the performance of an in-depth bibliographic analysis. PhD student presented the state of global resources of available phosphorus sources in the context of its demand, including in agriculture and industry. In this way, he showed the need to obtain phosphorus from other sources and showed that municipal wastewater has a great potential in this regard. The second part of the bibliographic analysis concerned the review of methods for the removal and recovery of phosphorus directly from wastewater or in sludge management facilities. The report presents the basics of chemical and biological phosphorus removal methods, in particular the processes of increased biological removal using PAO bacteria. (phosphorus accumulating organisms). He showed that the efficiency of phosphorus removal and subsequent recovery is influenced by a number of technological parameters. In the presentation, he drew attention to the specificity of conditions in Cameroon, which may have a significant impact on the course of these processes. He stated that this issue was the basis for the formulation of the scientific hypothesis 'the values of selected technological parameters have an impact on the degree of phosphorus recovery from wastewater'. This hypothesis can be considered correct with regard to the specificity of Cameroon. Based on the literature data, he developed a simplified phosphorus balance for a typical municipal wastewater treatment plant, taking into account the sewage and sludge lines. He developed the initial assumptions for research on a laboratory scale, but the adopted methodology needs to be refined. Recently, the first laboratory scale tests have been performed - the results are presented only in the presentation (they are not included in the report). The PhD student did not attempt to present the results of the literature analysis in the context of the research hypothesis at scientific conferences. The progress of work in the first two years of the doctorate was estimated at 70-80%, in relation to the scope specified in the individual research plan for the first two years. The Commission concluded that it was necessary to narrow down the topic of the doctorate to the selected process of phosphorus removal and recovery and to significantly intensify research work. With these assumptions, it will be possible to complete the dissertation on time.

On behalf of the Commission / Za Komisję

.....26.09.2022.....
Date

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Legible signature of Head of Commission

* delete as appropriate / niepotrzebne skreślić