

Evaluation of the bachelor thesis – reviewer

Author of evaluation: Jakub Jirásek
Thesis tutor: Dr. Jagar A. Ali, Ph.D.
Thesis topic: Experimental investigation of SDS surfactant on oil recovery
Student: Rebaz Jamel Anwar

1. Basic evaluation of the thesis

Presented thesis consists of two parts – review and practical (experimental). In the first part it does not follow regulations connected to student theses at the Palacký University in Olomouc in many significant points, including the violations of the Declaration of independent preparation of thesis. Since I already prepared review of this thesis before, and the thesis was retracted by the student before the public defence, I need to emphasize that only part of my previous notes from the first review (already available to the student) were taken into account.

2. Corresponds thesis to the given assignment in full?

The thesis corresponds to its assignment considering its content, but not the formal issues.

3. Evaluation of the thesis structure, continuity of its individual parts, and their completeness?

The review part is smooth for readers, while the experimental one could be improved. The true conclusion is reduced to single 8-line paragraph, which is not much.

For the repeatability of the work you need to introduce the used samples better than just "carbonate rocks were collected from the outcrop". Crucial information such as where was the outcrop, what was the specific composition of rock etc., are missing.

4. Evaluation of the formal side of the thesis (page range, graphics, citations, intelligibility, data and discussion, language)

Many of the formal issues of the thesis are not developed properly. Namely:

- the PDF/A file enabling machine reading was submitted 5 days after the deadline
- the Declaration date (page iv) is long after the thesis was submitted
- the author used 4 cm page margins instead of assigned 3 cm, so the page number is altered. Same goes after large empty spaces (e.g., pages 14 and 27), which in case of proper use would result in number of pages below the given limit.

- in the References are missing: Guo et al. (2008), Fanchi (2010), Vishnyakov et al. (2020), Kumar and Manda (2017)
- Figure 1 does not come from the cited reference (Bjørnland et al. 2021). "Dry hole" in this picture is misleading.
- Figure 4 does not come from the cited reference (Ghamartale et al. 2021)
- Figure 6 does not come from the cited reference (Patel et al. 2011)
- Figure 7 does not come from the cited reference (Alam and Ahammad 2014)
- the information cited as Kun et al. (2009) at page 5 does not come from given work, which is focused on textile industry
- several paragraphs are composed of one sentence only
- the information on crucial chemical substance for this thesis - SDS, used in the experiments, is missing. Who is manufacturer, what are known properties, was this substance used in similar experiments before?
- Table 1 repeats exactly the same information as already given in text (page 15)
- formula for critical micelle concentration (CMC) is missing (page 20)
- authors should be given in some cases – Integrated Reservoir Assessment Management (2010), Synthesis and physiochemical... (2017)
- some references are not in accord with the Harvard style (Alam and Ahammad 2014, Jain et al. 2022)

The quality of English is good.

5. *Other insights, critical comments*

Minor notes:

- what is the meaning of the "vdxzwa" in the Czech annotation?
- PIIP (page 1) is not included in the list of abbreviations
- silica is not a mineral (page 4)
- Figure 4 need legend with explanation of symbols
- numbers in chemical compound formulas should be written as a lower indexes, square units should be written as upper indexes
- missing scale at Fig. 10
- wrong hyphenation of word "formation" (Figure 20)
- why is part of the Abdussamie (2009) reference in capital letters and the name and year are repeated two times?
- what is the meaning of "Day 2 Tue, June 29, 2021" in reference Aslam (2021)?

- reference Jain et al. (2022) is given twice in the References
- why the DOI is given only for some journals?

6. *Whether and in which parts the thesis brings new knowledge?*

The review part does not bring new information. For the experimental on is not feasible to evaluate it properly, since the previous use of sodium dodecyl sulfate in the EOR is not mentioned by the student. However, it is possible to find papers on this topic (e.g., Ahmadi 2016 - <https://doi.org/10.1140/epjp/i2016-16435-5>, Rishi and Mandal 2022 - <https://doi.org/10.1002/ceat.202100434>), which investigate similar subject and which were not noted by the student.

7. *Characteristics of the selection and use of information sources (references)*

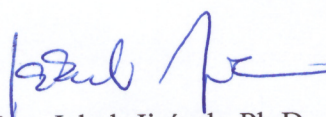
Student used wide range of information sources, mostly reliable and up-to-date ones. See point 6 for the exception.

8. *Overall evaluation of the bachelor thesis*

I do not recommend the work for defense due to many significant formal issues stated above.

Overall evaluation: F

Ostrava, May 26, 2023


doc. Ing. Jakub Jirásek, Ph.D.