

Jury Member Report – Doctor of Philosophy thesis.

Name of Candidate: Alexandra Scerbacova

PhD Program: Petroleum Engineering

Title of Thesis: Investigation of alkyl ether carboxylate surfactants performance in carbonate reservoirs

Supervisors:

Professor Alexey Cheremisin, Skoltech

Associate Professor Ahmed Barifcani, Curtin University

Co-supervisor:

Associate Professor Chi Phan, Curtin University

Name of the Reviewer: Prof. Mahmoud Abdulhamid

I confirm the absence of any conflict of interest (Alternatively, Reviewer can formulate a possible conflict)	Date: 12-11-2023
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The purpose of this report is to obtain an independent review from the members of PhD defense Jury before the thesis defense. The members of PhD defense Jury are asked to submit signed copy of the report at least 30 days prior the thesis defense. The Reviewers are asked to bring a copy of the completed report to the thesis defense and to discuss the contents of each report with each other before the thesis defense.

If the reviewers have any queries about the thesis which they wish to raise in advance, please contact the Chair of the Jury.

Reviewer's Report

Reviewers report should contain the following items:

- Brief evaluation of the thesis quality and overall structure of the dissertation.
- The relevance of the topic of dissertation work to its actual content
- The relevance of the methods used in the dissertation
- The scientific significance of the results obtained and their compliance with the international level and current state of the art
- The relevance of the obtained results to applications (if applicable)
- The quality of publications

The summary of issues to be addressed before/during the thesis defense

The thesis of Alexandra Scerbacova investigates the effect of alkyl ether carboxylate surfactants on the enhanced oil recovery in the carbonate reservoir. The experimental work in this thesis is supported by molecular dynamic simulations to study the potential interactions and effect of surfactant chemical structure on performance.

The thesis is well written and organized. Each chapter covers its topic nicely and the flow between the paragraphs is very good.

The thesis shows that Alexandra has done great job by combining the experiments and simulation in one content to explain some phenomena's and to prove the performance of the surfactant she utilized.

I see that the thesis can be accepted as is and I strongly recommend Alexandra to defend her thesis considering her high number of publications, which exceeded the average per PhD students.

Thank you!

Provisional Recommendation

I recommend that the candidate should defend the thesis by means of a formal thesis defense

I recommend that the candidate should defend the thesis by means of a formal thesis defense only after appropriate changes would be introduced in candidate's thesis according to the recommendations of the present report

The thesis is not acceptable and I recommend that the candidate be exempt from the formal thesis defense