

Jury Member Report – Doctor of Philosophy thesis.


Name of Candidate: Lyudmila Khakimova

PhD Program: Petroleum Engineering

Title of Thesis: New approaches for numerical modeling of air-injection based enhanced oil recovery

Supervisor: Associate Professor Alexey Cheremisin

Name of the Reviewer:

I confirm the absence of any conflict of interest	Signature:  Date: 04-11-2020
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Reviewer's Report
<p>I appreciate highly quality of the thesis as a whole. Overall structure of the dissertation is quite detailed, consistent and corresponds to the scientific content of the thesis.</p> <p>The topic of dissertation work corresponds well to its actual content.</p> <p>The approaches and methods used in the dissertation can be divided in two groups: (1) the construction and validation of 3D laboratory-scale numerical models of oxidation experiments, ramped temperature oxidation, and combustion tube tests to provide a proper HPAI and ISC kinetic models for oxidation and combustion reactions for three different reservoir types (carbonate, bitumen, oil shales) and (2) an alternative approach for phase behavior calculation in multicomponent multiphase hydrocarbon systems. All approaches and methods are relevant.</p> <p>The scientific significance of the results obtained by L. Khakimova and described in the dissertation is essential and corresponds to the made demands. The scientific results of L.Khakimova described in her dissertation results are in compliance with the international level and current state of the art in petroleum engineering science.</p> <p>The results of L.Khakimova are relevant to their scientific and industrial applications.</p>

Total number of publications of L.Khakimova is not too large, but formally it is enough. The quality of the publications is quite high.

Provisional Recommendation

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