CZECH TECHNICAL UNIVERSITY IN PRAGUE

Faculty of Mechanical Engineering, Department of Process Engineering

Evaluation of Diploma Thesis

Study program: Mechanical Engineering

Study field: Process Engineering

Author: **Gokul Sai Namburi**

Title: **CFD simulation of heat transfer in an agitated vessel with a pitched six-blade turbine impeller**

Author performed numerical simulations of fluid flow and heat transfer in an agitated vessel with a pitched six-blade turbine impeller in ANSYS Fluent. "Sliding Mesh" approach and transient simulations were done in ANSYS Fluent. An internal heat source (sink) balancing the heat supply through the vessel wall and bottom was used to eliminate the influence of temperature increase on the evaluation of heat transfer coeeficient. The impact of different impeller distances from the bottom was also investigated. The methods and procedures used in the thesis were correct but the resulting correlations for the Nusselt numbers are not in very good agreement with available experimental data – it is a question for further work what might be the main reason.

According to the supplement of the thesis assignment, the author improved substantially the language level as well as formal aspects of the thesis (citation and reference list). Some mistakes in the evaluation of heat transfer coefficients (Nusselt numbers) were also repaired.

Evaluation: good (C)

17. 6. 2019

doc. Ing. Karel PETERA, Ph.D.