

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: **Kaan Ege Temiz**

Title: **Optimization of heat transfer between fluid stream and heat transfer surface**

The author performed numerical simulations of fluid flow and heat transfer in various configurations two basic configurations, denoted as impinging jet (fluid stream is oriented perpendicularly to the heat transfer surface) and wall jet (fluid stream is oriented in parallel to the heat transfer surface). He also investigated the impact of the heat transfer surface modification, by various types of dimples/grooves, and evaluated the heat transfer performance improvement in terms of heat transfer rates and surface heat transfer coefficients. A comparison with smooth surface was done. ANSYS Fluent was used for all CFD simulations. Even though the student was able to work on the thesis without a substantial help of the supervisor, I would expect a slightly more invention when comparing the results especially taking into account also pressure drop for the given configuration. Of course formal aspects of the thesis could be improved as well.

Evaluation: good (C)

26. 1. 2022

doc. Ing. Karel PETERA, Ph.D.