

OPPONENT'S ASSESSMENT ON DIPLOMA THESIS

Student's name and surname: Fernando Rafael Rubio Burga

Name of the diploma thesis: Optimization of the boat engine design

Supervisor of the thesis: prof. Ing. Tomáš Vít, Ph.D.

Opponent: Ing. Vojtěch Lukášek

1. Diploma thesis evaluation

Evaluation	excellent	excellent minus	very good	very good minus	good	failed
Meeting the goal and fulfilling task of the thesis			X			
Quality of conducted survey			X			
Methodology of solutions		X				
Expert level of the thesis				X		
Merit of the thesis and its potential applicability of results				X		
Formal and graphic level of the thesis			X			
Student's personal approach						

Mark x in the corresponding box.

Supervisor's final evaluation is based on his/her overall subjective evaluation.

Grading is stated literally in the article no. 5, neither by a number, nor by a letter.

2. Comments and remarks on diploma thesis:

- The opponent considers the objectives of the work to be met.

The opponent is aware that due to the pandemic it was not possible to carry out the work to the planned extent. This mainly applies to experiments. Therefore, the opponent does not evaluate the performance of the experiments.

The main part of the work was to perform CFD simulations. The work shows that the simulations were performed. The work also brings very few results from CFD simulations.

The focus of the work lies in the preparation of the analytical model of the jet pump. The approach given in the work is correct. However, I believe that this approach leads to an iterative process, of which only the first step is presented. As a result, it leads to an order of magnitude difference in the results of CFD simulations and the model.
- The survey shows the basics of jet pump design.
- The procedure chosen for the solution is correct. If experiments could be performed, it would significantly improve the overall work.
- The thesis deals with an interesting topic and the opponent evaluates it as challenging. Careful elaboration of each individual point (model / experiment / CFD simulation) would be a sufficiently demanding and extensive topic for the diploma thesis. Unfortunately, the effort to solve the problem comprehensively leads to significant shortcomings.
- The applicability of the results is questionable in the current state. After careful completion, the work would be very beneficial.



6. Graphic level is sufficient. The author tries to follow the usual structure of the diploma thesis. Nevertheless, the placement of some chapters is unfortunate (e.g. Boundary conditions in the Results chapter).
7. I cannot rate the students approach. However, the work is very extensive and addresses a number of topics.

3. Questions about diploma thesis:

Fig. 1.1 shows Li-Ion pricing and energy density till 2005. Could you present what is the stat in 2020?

4. Opponent's statement whether the diploma thesis meets the academic title requirements and whether it is recommended for defense:

I recommend thesis for defense.

5. Opponent's grading:

Very good minus

Date 21.6.2020, in Liberec


Opponent's signature

