

**Author of the thesis:** Shokry Sobhy Shokry Habashy

**Name of the thesis:** Design of test ejector cooling system

**Type of the thesis:** Diploma thesis

**Reviewer:** doc. Ing. Tomáš Hyhlík, Ph.D.

Institution of the reviewer: Czech Technical University in Prague, Faculty of Mechanical Engineering, Department of Fluid Dynamics and Thermodynamics

**A. Formal belongings of the thesis:** Good

*(Rate linguistic and typographical level of work, text structure, sorting chapters, illustrations, correctness and completeness of citations literary sources)*

The diploma thesis looks good from the formal point of view. But on the closer examination, there is some lack of the clarity in the thesis. It is possible to mention e.g. confusion connected with the labelling of thermodynamic cycles on pages 6 and 7. It is not clear to me what does 1a, 2a, 4a and 5a mean. Several figures or tables are wider than the main text. Equation numbering in square brackets is not common. There are typos in the thesis.

**B. Thesis theoretical part:** Very good

*(Rate the extent and manner of research, a way of describing the problem solved or the suitability and complexity of used theoretical method.)*

The theoretical part of the thesis looks like enumeration of the information from the references. I think that less in detail explained information would be enough. The information about Venturi effect playing role in the work of ejector is misleading. The mathematical model of the ejector is described by the list of equations, but the more detailed explanation would be desirable.

**C. Thesis practical part:** Very good

*(Rate adequacy and sophistication of the methods used, the level and amount of data obtained.)*

Practical part describes obtained result sufficiently.



**D. Results analysis:** Very good

*(Rate the level of processing of data, including the determination of measurement uncertainties, discussion of the results and formulated conclusions.)*

I would recommend discussing in detail selected parameters affecting performance. There can be some motivation and not only mentioned results.

**E. Level and quality of the thesis:**

*(Rate overall complexity and scope of work and original contribution of the student.)*

The author did a review of the solved problem. He described used mathematical model and created a program to solve ejector cooling system. He tested developed program for various conditions. Finally, he has designed ejector cooling system.

**Overall evaluation:**

The author of the diploma thesis fulfilled imposed tasks. He demonstrated his ability to use the knowledge gained during his study and to solve problems in fluid mechanics and thermodynamics. He also proved the ability to work with literature.

**Questions for the defense:**

- 1) Try to explain momentum transfer between primary and entrained flow in the ejector.
- 2) If I understand it well you have chosen water as working fluid, but equations describing flow in ejector are based on the ideal gas model. Can you please discuss the applicability of the selected ejector model in the case of water as working fluid.

**Qualification:**

I suggest this work to classify as very good.

Prague

5<sup>th</sup> of June, 2017

I certify that I am not in any personal relationship with the author of the work

Jiří Rybík