



Author of the thesis: Shehab Ashraf Salem

Name of the thesis: Experimental and numerical investigation of the metal sheets for automotive.

Type of the thesis: Master thesis

Reviewer: Sylvio Simon

Institution of the reviewer: Brandenburg Technical University Cottbus - Senftenberg

- A. **Formal belongings of the thesis:** Excellent minus
(Rate linguistic and typographical level of work, text structure, sorting chapters, illustrations, correctness and completeness of citations literary sources)

The diploma work is largely without mistakes. The arrangement of the chapters makes sense. Figures are clear and well done. Over 80 illustrations show the high diligence in the workmanship. The figure descriptions could be more detailed.

- B. **Thesis theoretical part:** Excellent
(Rate the extent and manner of research, a way of describing the problem solved or the suitability and complexity of used theoretical method.)

The introduction covers the current state of knowledge. The problem was solved adequately. The theoretical basics were presented comprehensively. The order of the work is logical.

- C. **Thesis practical part:** Excellent
(Rate adequacy and sophistication of the methods used, the level and amount of data obtained.)

The thesis uses experiments as well as numerical solutions with Ansys. Trial and simulation complement each other. It brings very good interpretable results. The selected networking is sufficient for the solution.

- 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.)



The evaluation of the calculated results and the discussion are comprehensible. However, in several cases, the detailed analysis of the obtained results is needed e.g. the analysis of the errors for the velocity profiles or turbulence intensity.

- E. Level and quality of the thesis:** Excellent
(Rate overall complexity and scope of work and original contribution of the student.)

The student has solved this complicated problem very independently. Noteworthy are the experiments performed. The practical results show the correctness of his theoretical assumptions and the calculated numerical results.

Overall evaluation: Excellent minus

Questions for the defense:

Which geometry meets the best the requirements (for instance the noise production)?

Qualification:

I suggest this work to classify as "Excellent minus"

In Senftenberg, 04. of June, 2018

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


Reviewer's signature