THESIS SUPERVISOR'S EVALUATION OF STUDENT

ÚSTAV TECHNIKY PROSTŘEDÍ
České vysoké učení technické v Praze
Fakulta strojní

Thesis title:	**CFD Model and Simulation for the Design of a Spray Booth**
Author:	**Elijah Might NALUGOTLA**
Thesis type:	Master's thesis
Faculty:	Faculty of Mechanical Engineering
Department:	Department of Environmental Engineering
Thesis supervisor:	Ing. Martin Barták, Ph.D.

The master thesis "CFD Model and Simulation for the Design of a Spray Booth" submitted by Mr. Nalugotla deals with the design and optimization of a small spray booth with working section volume of approx. 1 m^3. The main task was to set up a CFD model of the spray booth and use it for simulation-based analyses and comparison of various ventilation exhaust arrangements. The level of the thesis subject difficulty is intermediate.

The author used a commercial CFD software ANSYS Fluent to elaborate the thesis assignment. This included the latest available tools for model mesh generation which make possible to combine regions with polynomial and hexagonal elements. The ANSYS Fluent Porous Jump and Porous Zone concepts were used to model a perforated plate and air filters. The Discrete Phase Model and particle tracking was used to demonstrate the effectiveness of the spray booth ventilation system.

The student worked on his thesis project with adequate interest and effort. He showed the ability to use an advanced software tool for CFD modeling and simulation. He was able to find and use required solution methods and was gradually improving his skills which were necessary to fulfill individual tasks of the project

In general, Mr. Nalugotla proved that he is able to implement the knowledge gained in the study program as well as to gain new skills by self-learning. He is able to solve engineering problems and to make relevant conclusions about the obtained results. In my opinion, the thesis fulfills the criteria for the Master's degree in Mechanical Engineering at CTU in Prague.

I suggest the overall evaluation grade for the thesis as **A (excellent)**.

Date: 15th August 2018　　　　　　　　　　Signature:　……………………………………….

Ing. Martin Barták, Ph.D.