DIPLOMA THESIS EVALUATION

Student's name and surname: **Gnaanesh Karunanithi Sumathi**

Name of the diploma thesis: **Dual-Material 3D Printing Using FLM Additive Technology**

Supervisor of the thesis: **Ing. Petr Keller, Ph.D.**

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		X				

*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 diploma thesis deals with the 3D printing of components from two different materials. In the theoretical part, I miss wider research of existing solutions for multi-material printing based on FFF (FLM, FDM) technology. It is always good to look at how others have solved the task, to learn from mistakes, and to apply good results if possible.

In the practical part, the student shows the printed components with gradually improving quality, but the reader will hardly see the description of the procedure and changes made to the 3D printing settings.

There is also a lack of data for publishing the results in a technical journal. But I respect that the practical experiments were time-consuming and difficult to implement, thanks to Covid's situation.

About formal aspects, I would recommend improving the quality of some images, especially Fig. 3 is on the verge of readability. I would also recommend aligning the text of the work into a block - on both sides. Sometimes there is also a problem with grammar, e.g. chap. 4.2: "The two nozzle gives ...", on page 54 below: "In this fig. 46 shows ...", etc.

3. Questions about diploma thesis:

Can you describe how the nozzle cleaning sequence is now performed on the Rebel printer and what print settings needed to be adjusted?

Why is it necessary to calibrate the position of both nozzles on this printer? Describe specifically how you did the nozzles calibration.

4. Supervisor's statement on results of the inspection carried out by the anti-plagiarism program in the STAG system:
The result of the analysis from IS STAG is that the matches found are mainly in the first pages of work, such as assignment, declaration, etc. There is only a minimum of matches in the text of the thesis, so it can be said that the submitted work is original.

5. Supervisor's grading of the diploma thesis:
VERY GOOD

Date: 16. 6. 2021, in Liberec

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Supervisor's signature