

Supervisor's Review of a Master's thesis

Student's name and surname: Aleksí Modebadze
Degree programme: Polymer Engineering
Department: Department of Physics and Materials Engineering
Supervisor of the Master's thesis: prof. Ing. Tomáš Sedláček, Ph.D.
Academic year: 2024/2025

Title of the Master's thesis:

Analyzing the Feeding Behaviour of MEX Extruder Heads

Assessment of the Master's thesis using the ECTS grading scale:

Assessment criteria	Assessment according to the ECTS
1. Topicality of the literature sources consulted	E – Sufficient
2. Application of knowledge gained from literature	E – Sufficient
3. Theoretical aspect dealt with in the thesis	E – Sufficient
4. Description of experiments and implementation methods	D – Satisfactory
5. Level of quality of processing of the results	E – Sufficient
6. Interpretation of the results achieved and discussion thereof	D – Satisfactory
7. Formulation of the conclusion of the thesis	E – Sufficient
8. Student's approach to the Master's thesis	C – Good

Select the option the submitted thesis for defence and propose the following assessment:

D – Satisfactory

Comments on the Master's thesis:

The thesis of Aleksí Modebadze was prepared in conjunction with two academic institutions: Tomas Bata University in Zlín and the Technical University of Leoben. Whilst experimental

laboratory work was conducted primarily in Zlín, specifically encompassing thermal analysis and rheological characterisations, mathematical simulations utilising Ansys Polyflow software were completed in Leoben. From this standpoint, it is regrettable that the role of Roman Kolarik as a recognised figure in the field of experimental characterisation setting has not been acknowledged. It is evident that the presented master's thesis exhibits an inadequate division of theoretical and practical components. The theoretical core of the work is superficially defined on five pages (14–18), while the remainder of the text is dedicated to the description of the experimental part, including the materials employed, the experimental conditions and the approach. Notwithstanding, there is a paucity of discourse on the potential approaches for analysing rheological data and utilising it for the purpose of additive manufacturing processes. It is evident that the amalgamation of presented specifications, the description of introduced tables and figures, and the informal manner of information presentation are indicative of a substandard quality standard. The Theses.cz system has detected a maximum percentage of similarity with other documents amounting to 3%. The work is an authentic composition, not a plagiarised thesis.

Questions to be asked by the Master's thesis supervisor:

The rationale behind the exclusion of experimental data pertaining to highly filled materials (i.e. feedstock) from the simulation of the extrusion process warrants deeper elucidation. What opportunities for enhancement exist with regard to the evaluation of rheological data relating to highly filled materials?

In Vizovice on **26. 05. 2025**



Signature of the Master's thesis supervisor