

Review of dissertation thesis: Magnetorheological Systems with Optimized Performance

Student: Ing. Martin Cvek

Reviewer: Prof. Ing. Petr Slobodian, Ph.D.

The dissertation thesis is assembled as a set of five scientist articles with an appropriate introduction, lists of publication activities, and student curriculum vitae. Four papers were already published in prestigious international journals with impact factors. One article was sent to the editor. It should be emphasized that these journals are in their field from a group of high quality periodicals with relatively high impact factors. I also positively rate the fact that the doctoral student is mentioned as the main author of the result in all of these papers, it means in the first place. What I miss is the stating of the candidate's mental contribution in percentage. Further, from the dissertation thesis it is obvious that these articles are selected from a wider set of student's publication activities. They were selected focusing directly on the topic of dissertation thesis. From this point of view, it is necessary to evaluate positively that the student is the author or co-author in total of 13 papers in the journals with impact factor. And also author and co-author of articles published in conferences proceedings or as conference abstracts. I also evaluate the participation on many research projects. From this perspective, the student more than fulfilled the requirements to obtain the Ph.D.

The dissertation thesis is written in English. It has a good structure, graphic standard and language. There may be mentioned only a few typing errors.

From the point of view of research topic it has a good potential for further application use. Scientific work begins as a basic research in area of chemical synthesis of efficient magnetorheological particles. From a practical point of view, it is further a search for ways to remove the current drawbacks of such materials as sedimentation, particle/matrix affinity, chemical stability and thermo-oxidative stability while maintaining magnetorheological efficiency.

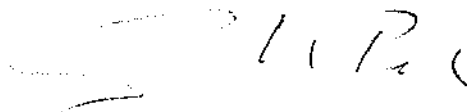
Finally, I would like to state that the student Ing. Martin Cvek proved that he is capable of independent and creative scientific work; he fulfilled the planned study schedule and wrote a satisfactory dissertation thesis for the defence. He also met the criteria for the minimum required amount of work published and cited in scientific databases. That is why I recommend dissertation thesis to defend and obtain Ph.D. degree.

Questions to student:

1. Can you explain the principle which leads that in on-state flow of magnetorheological dispersion start to be pseudoplastics?
2. FT-IR spectra in Fig. 12a poses an increase of specimen's weight. It is explain by specimen degradation. Is it possible to explain chemically what happens with specimens during heating in used atmosphere?

Ve Zlíně, 14. srpna 2018

Prof. Ing. Petr Slobodian, Ph.D.

A handwritten signature in black ink, appearing to read 'P. Slobodian', with a stylized flourish underneath.