

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Spectrometric attachment</b>
<b>Author's name:</b>	<b>Nikita Zhdankin</b>
<b>Type of thesis :</b>	bachelor
<b>Faculty/Institute:</b>	Faculty of Mechanical Engineering (FME)
<b>Department:</b>	Department of Instrumentation and Control Engineering
<b>Thesis reviewer:</b>	Doc. Ing. Jan Hošek, Ph.D.
<b>Reviewer's department:</b>	CTU, FME, 12136.

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>challenging</b>
<i>How demanding was the assigned project?</i>	
The topic of the theses was to make research, perform design, build and test a functional system of the cell phone spectrometer. It completes all the steps needed for technical product achievement. I suppose it is challenging as bachelor thesis topic.	

<b>Fulfilment of assignment</b>	<b>fulfilled</b>
<i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	
The thesis task was split into five sub tasks, which were completely fulfilled.	

<b>Methodology</b>	<b>outstanding</b>
<i>Comment on the correctness of the approach and/or the solution methods.</i>	
The student's approach was correct and he reached successful and functional result of his effort.	

<b>Technical level</b>	<b>A - excellent.</b>
<i>Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?</i>	
The thesis sounds technically good and it is possible to use it for repeating all the steps of the work for production or modification of proposed instrument. The student employs corresponding expertise. Better function of the system can be achieved by deeper error analysis of the instrument, but it can be expected in case of the master theses. The performed analysis well corresponds to the bachelor theses level.	

<b>Formal and language level, scope of thesis</b>	<b>B - very good.</b>
<i>Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?</i>	
Formal and language level is good. I cannot agree with figures 1 and 2, where grey regions should be the human eye daylight recognized wavelengths. I did not found any information about entrance slit details e.g. width, high, material, ... There are not correctly marked angles of diffraction incident the screen plane in figure 10. I do not agree with presentation of the system design just as figures of a CAD model. It should be presented as standard mechanical drawings even in case when it is printed on 3D printer.	

<b>Selection of sources, citation correctness</b>	<b>B - very good.</b>
<i>Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?</i>	
The thesis references are based on web online sources mainly. Web references don't have indication of date of its accessibility. The author does not cite original sources, but just open sources as Wikipedia.	

**Additional commentary and evaluation (optional)**

*Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.*

The author summarize as similar techniques mass spectroscopy, nuclear magnetic resonance spectroscopy, excitation spectroscopy. They are completely and principally different techniques, which have the only same feature that it transfers data into frequency domain. They are not comparable and it cannot be mixed with optical spectroscopy techniques.

**III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE**

*Summarize your opinion on the thesis and explain your final grading. Pose questions that should be answered during the presentation and defense of the student's work.*

I assume that the author did very good job on his theses. He fulfills all thesis guidelines paragraphs, he reached a functional sample, and he verified its functionality. It shows the knowledge and ability of its application on the technical problem.

I have few questions to the thesis:

- 1) Please explain how the slit affect the functionality of the system and what are its parameters.
- 2) Did you develop some application for spectrometer data processing?

The grade that I award for the thesis is **A - excellent**.

Date: **25.1.2020**

Signature: