

## I. IDENTIFICATION DATA

<b>Thesis name:</b>	<b>Exhaust emissions from in-use motorcycles</b>
<b>Author's name:</b>	<b>Antonín Voldřich</b>
<b>Type of thesis :</b>	master
<b>Faculty/Institute:</b>	Faculty of Mechanical Engineering (FME)
<b>Department:</b>	Department of Automotive, Combustion Engine and Railway Engineering
<b>Thesis supervisor:</b>	Prof. Michal Vojtíšek, Ph.D.
<b>Supervisor's department:</b>	Department of Automotive, Combustion Engine and Railway Engineering

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>challenging</b>
<i>Evaluation of thesis difficulty of assignment.</i>	
The assigned topic – participation in the assessment of exhaust emissions from in-use motorcycles – was interdisciplinary experimental work and as such has been relatively challenging.	

<b>Satisfaction of assignment</b>	<b>fulfilled</b>
<i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i>	
The assignment has been fulfilled to its entirety without objections. Mr. Voldřich has actively participated in coastdown tests on a test track and in laboratory tests on a chassis dynamometer, and has, on his own, analyzed and interpreted the test data.	

<b>Activity and independence when creating final thesis</b>	<b>A - excellent.</b>
<i>Assess that student had positive approach, time limits were met, conception was regularly consulted and was well prepared for consultations. Assess student's ability to work independently.</i>	
Mr. Voldřich has taken the initiative early, has worked independently to the extent possible, actively participated in experiments, reported problems and progress in a timely manner, was prepared for meetings, and generally has shown a positive approach. He has paid attention to, and managed to compensate for, delays in experimental work due to coronavirus.	

<b>Technical level</b>	<b>B - very good.</b>
<i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i>	
The thesis bring, on 95 pages, an overview of exhaust emissions and their measurement, and reports on experimental work, where emissions of two motorcycles have been measured on a chassis dynamometer in a laboratory. A wealth of information is presented in an organized manner. The information presented is technically correct. The interpretation and discussion of the data is relatively short, but this can be attributed to rather long delays in the experimental phase.	

<b>Formal and language level, scope of thesis</b>	<b>A - excellent.</b>
<i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i>	
The thesis is well written, comprehensible, appropriately organized. The English is good. All symbols are explained and also listed in the table of symbols. The formatting and the quality of the graphics are appropriate. The scope of the thesis is appropriate; the introduction is slightly longer and some parts not overly pertaining to motorcycles could have been shortened.	

**Selection of sources, citation correctness**

**B - very good.**

*Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.*

The sources - a total of 67 works – have been well chosen and are properly referred to in the text. The format of the citations does not always follow any of the commonly used formats and some details are missing, but the work cited is uniquely identified.

**Additional commentary and evaluation**

*Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.*

The thesis is of very good quality. The publication of the results from the measurement in a peer-reviewed journal, to which Mr. Voldřich has contributed, is expected.

**III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION**

*Summarize thesis aspects that swayed your final evaluation.*

I evaluate handed thesis with classification grade **B - very good.**

**Questions for defense:**

1. Please discuss the measured emission values in light of the state of the technology and state of the emissions legislation at the time when the motorcycles were manufactured. You may also want to compare with emissions from passenger cars of comparable age and/or technology.
2. Please comment on the relative importance of the air-fuel ratio regulation and of the catalyst efficiency to the emissions. Which one would you focus on improving?

Date: **1.2.2021**

Signature: