

I. IDENTIFICATION DATA

Thesis title:	Hydrogen production, storage and distribution for a powertrain test laboratory
Author's name:	Senghani Abhisek Vijay
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Automotive, Combustion Engine and Railway Engineering
Thesis reviewer:	Vojtěch Klír
Reviewer's department:	Centre of Vehicles for Sustainable Mobility

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>How demanding was the assigned project?</i>	
The topic of the thesis is quite specific and requires the student to learn theory about hydrogen production and storage more in to the detail. It was also necessary to define a way how to describe the behavior of hydrogen in means of storage for R&D activities.	

Fulfilment of assignment	fulfilled with minor objections
<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>	
All defined tasks were fulfilled.	

Methodology	correct
<i>Comment on the correctness of the approach and/or the solution methods.</i>	
The main aim of the work was to bring information about the possibility of production and storing the hydrogen like fuel for R&D activities. Several scenarios were taken in to the account. All necessary calculations were performed based on literature review. Obtained results seem to be acceptable according the current knowledge about hydrogen usage like a fuel.	

Technical level	B - very good.
<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 student had to carry out exploration of various sources and summarized all relevant information about hydrogen storage possibilities in work. Several scenarios were taken in to the account. Necessary calculations were performed also with help on programs compiled by student. Technical level is quite good.	

Formal and language level, scope of thesis	B - very good.
<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>	
The work is well and logically arranged. Language is clear. However, I lacked a more general introduction to the issues addressed to using and storage the hydrogen in CVUM laboratories.	

Selection of sources, citation correctness	B - very good.
<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>	
Sources used and stated by student are relevant and adequate. All bibliographic citations are done according to defined standards. It is possible to clearly distinguished student's work on given topic.	

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.

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.

Senghani Abhisek Vijay by his thesis proved that he is able to handle an engineering task. He composed introduction to methods used for production of hydrogen. Than after analyzing of several previous works he applied calculation programs in order to describe possibilities of production and storing of the hydrogen for various scenarios. All results seem to be according to current knowledge in this field. The work is logically arranged. Regarding the formal point of view I was missing more general and detailed introduction about the both current and planned activities related to hydrogen usage.

Questions:

What are the main current hydrogen storage challenges from the technical point of view?

Are there any forecasts related to reducing the cost for hydrogen production and distribution in the future?

The grade that I award for the thesis is **B - very good**.

Date: **28.1.2021**

Signature: