

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Economical efficiency of energy storage into hydrogen using a tungsten carbide catalyst</b>
<b>Author's name:</b>	Ivan Grinikov
<b>Type of thesis :</b>	master
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering (FEE)
<b>Department:</b>	Department of Economics, Management and Humanities
<b>Thesis reviewer:</b>	Ing. Miroslav Vitek, CSc.
<b>Reviewer's department:</b>	Department of Economics, Management and Humanities

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>extraordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
<b>The task of the diploma thesis was to assess the cost-effectiveness of hydrogen produce by water electrolyzer with tungsten carbide electrodes with conventional platinum electrolyzers or standard hydrogen production by methane splitting.</b>	

<b>Fulfilment of assignment</b>	<b>fulfilled with minor objections</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>	
Storing energy in hydrogen is one way of storing energy. The author has focused on the production of hydrogen itself without considering the subsequent hydrogen storage and energy recovery facilities.	

<b>Activity and independence when creating final thesis</b>	<b>B - very good.</b>
<i>Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.</i>	
The graduate regularly consulted with me on the results of his work and he have positive approach for my recommendation.	

<b>Technical level</b>	<b>B - very good.</b>
<i>Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?</i>	

<b>Formal level 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>	
The work has a logical structure and reads well but one can have some reservations about the way the formulas for the calculations are written.	

<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 student had to make a great effort to obtain the necessary information, especially for the economic part of his work. He filled in the incomplete information by means of estimates and comparisons with the corresponding result.	

**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 student had to diligently gather the necessary information about the economic parameters of the electrolyzers under consideration, but he succeeded in the end.

**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.*

Author fulfill his thesis of information about sensitivity analysis of naturally gas price for comparison of effectivity of methane splitting against water electrolyser. It is important result which can orient producers of hydrogen how equipment is suitable for hydrogen production according to electricity and gas price.

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

Date: **27.5.2022**

Signature: