

**I. IDENTIFICATION DATA**

<b>Thesis title:</b>	Tactile Sensors Based on Graphene Aerogel
<b>Author's name:</b>	Tomáš Chaloupecký
<b>Type of thesis :</b>	master
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering (FEE)
<b>Department:</b>	Department of Cybernetics
<b>Thesis reviewer:</b>	Doc. Mgr. Matěj Hoffmann, Ph.D.; Ing. Bedřich Himmel
<b>Reviewer's department:</b>	Department of Cybernetics

**II. EVALUATION OF INDIVIDUAL CRITERIA**

<b>Assignment</b>	<b>extraordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
The aim of the work was not only the evaluation of graphene aerogel as a material potentially suitable for the construction of tactile sensors, but also the implementation of the tactile sensor itself, including the measuring electronics and its subsequent use for feedback control of the gripper. Given that each of these sub-objectives could be the subject of a separate thesis, we assess the assignment as extremely challenging.	

<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 assignment was fulfilled in all aspects.	

<b>Activity and independence when creating final thesis</b>	<b>A - excellent.</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 student approached the work completely independently and actively. He demonstrated the ability to understand the problem and find appropriate solutions, which he then consulted. He demonstrated exceptional independent creative skills, while at the same time applying the knowledge from what he has learned during his studies. Moreover, he also managed very well the collaboration with the Institute of Physics of the Czech Academy of Sciences where new samples were prepared during the course of the thesis.	

<b>Technical level</b>	<b>A - excellent.</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>	
The assessed work is at an excellent technical level. The student has demonstrated not only the knowledge he acquired through the study, but also the ability to search for information and work with scientific articles. The hardware solution is elegant and original.	

<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 thesis is formally very good. The fact that the student did an incredible quantity of work made it difficult to describe in a compact and coherent way. Therefore, the thesis is not always easy to read.

### **Selection of sources, citation correctness**

**A - excellent.**

*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?*

The student independently researched the literature, starting from the recommendations provided by the supervisors. There is an appropriate review of state of the art and correct citations.

### **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.*

Please insert your comments here.

### **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.*

The assessed work fully meets the assignment and is at an excellent level. The student showed the possibility of designing a tactile sensor based on graphene aerogel and its possible use in feedback control of a gripper. The technical limitations and shortcomings of the constructed sensor are well described in the thesis. The actual hw implementation of the sensor measurement chain is at an excellent technical level.

We assess the thesis with **A - excellent**.

Date: **7.6.2023**

Signature: