

## **OPPONENT'S EVALUATION OF THE DIPLOMA THESIS**

**Student:** **Rafaela Aliaj**

**Opponent:** **Ing. Tomáš Maliňák**

Study program: **Engineering Informatics**

Study discipline: **Security Technologies, Systems and Management**

Academic year: **2020/2021**

Thesis topic: **The analysis of decapsulated chip surface with confocal microscopy**

### **Evaluation of the thesis:**

Student has described principle of confocal microscopy to detect counterfeit electronic components. This theme is more and more actual recently. Long theory part of the thesis makes reader familiar with classification of counterfeit components, risks and impacts of using them in industrial manufacturing. This had required to make literature search from lot of sources, bibliography references from 55 sources. Short introduction to confocal microscopy is followed by structured description of counterfeit components detection methods.

The thesis is well structured, author marks external quotations sources in the text.

There is a pity, that all submission points were not fulfilled, the practical results are limited to preliminary study due to confocal microscope failure.

In spite of obstructions (the pandemic situation and microscope failure), I recommend this thesis to be defended and suggest evaluation B – Very Good.

### **Questions:**

1. What is minimum resolution of used confocal microscope versus modern nanometre semiconductor process ?
2. Do you know, what is repeatability of acquired image? Did you scan the coin more times and evaluate differences ?
3. How are displayed differences between the tested and genuine samples ? Is there software support to highlight differences between acquired image samples?

### **Overall evaluation of the thesis:**

The Opponent shall grant a mark according to the ECTS classification scale:

A – Excellent, B – Very Good, C – Good, D – Satisfactory, E – Sufficient, F – Insufficient

An “F” grade also means "I do not recommend the thesis for defence."

**I recommend this thesis to be defended and suggest the following evaluation:**

**B - Very Good**

**In the case of an evaluation grade of “F – Insufficient”, please supply the main shortages and reasons for this assessment.**

Date: 24. 8. 2021

Thesis Opponent's Signature: