



## Bachelor thesis opponent's review

**Master thesis:** Design and optimization of a thermo-electrical converter for energy harvesting from water heaters

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**Thesis supervisor:** doc. Ing. Mattia Butta, Ph.D.

**Thesis opponent:** doc. Dr. Ing. Jan Kyncl

Rating (1 – 5)  
(1 = best; 5 = worst):

1. Fulfillment of assignment requirements:	<input type="text" value="1"/>
2. Systematic solutions of individual tasks:	<input type="text" value="2"/>
3. Ability to apply knowledge and to use literature:	<input type="text" value="2"/>
4. Thesis formal and language level:	<input type="text" value="2"/>
5. Thesis readability and structuring:	<input type="text" value="3"/>
6. Thesis professional level:	<input type="text" value="2"/>
7. Conclusions and their formulation:	<input type="text" value="2"/>
<b>8. Final mark evaluation (A, B, C, D, E, F):</b>	<input type="text" value="C"/>
<b>verbal:</b>	good

### **Brief summary evaluation of the thesis (compulsory):**

The assignment of the bachelor's thesis is quite extensive and really fulfilling all its parts is rather a master's topic. Instead of a detailed description of energy harvesting options, I would consider it appropriate to analyze the Peltier cell electrical and thermal scheme in more detail. As with the use of energy from photovoltaic panels, the use of MPPT is essential.

On the other hand, the author has shown that he is able to perform electrical measurements, prepare experiments and think critically about them. Thermal imaging images (page 29) are illustrative, but without an attached scale, they essentially do not provide information.

### **Questions:**

1. In Tab. 4, the maximum efficiency figure is, for example, 52.58%. What is the uncertainty of this value?

Date: 30. 5. 2022

Signature: