BACHELOR THESIS PEER REVIEW

I. PERSONAL AND STUDY DETAILS

Student's name:	**Simeonov Ivan**	Personal ID number:	**503570**
Faculty:	**Faculty of Biomedical Engineering**		
Study program:	**Biomedical Technology**		

II. EVALUATION OF THE BACHELOR THESIS

Bachelor's thesis title in English:

A Phantom Feasibility Study of Differential Microwave Temperature Monitoring of Regional Hyperthermia

	Evaluation criteria	N. of points
1.	Fulfillment of the aim of the thesis and suitability of the structure of the thesis with respect to the topic (compliance with the assignment). (0 – 30)* Any part or sentence of the bachelor thesis assignment has to be dealt with. The full amount of points can be given to the excellent thesis only. The points are reduced in relation to the part of the assignment which is not properly dealt with or is not included at all.	26
2.	Theoretical level and application of accessible sources. (0 – 30)* The reader evaluates the relevance of the theoretical part of the thesis with respect to the assignment and structuring of the ideas. If word-for-word citing prevails, the reader shall decrease the rating by 15 points. (of course if copyright is abided). Moreover, another reason for decreasing the overall assessment is insufficient amount of theoretical knowledge, references and sources.	26
3.	Scope of experimental work (SW, HW) and applied knowledge, quality of methodology and conclusions of the thesis. (0 – 30)* Maximum number of points can be granted to a thesis which is fit for publishing. This aspect is judged with respect to enhancement of theoretical knowledge and practical implications. Creation of a model, SW or technical realization is valued. For minor methodological flaws, the assessment is reduced by up to 5 points. Inconsistency of elaboration with the theoretical background and unclear or not fully professional approach leads to a reduction by at least 15 points. Another decrease can be due to insufficient discussion. A total of 30 points can be given to a very complex and flawless work, including other activities such as participation in scientific-research project or grant, active participation in the writing publications, patents and utility models.	30
4.	Formal requisites and layout of the thesis (writing mastery, structuring, graphs, tables, citations in the text, list of references etc.). (0 – 10)* Reader evaluates formal requisites according to the rules of writing, attributes of final works, i.e. text formatting, structure of the text, references, quality of charts and tables and citations. Number of points can be reduced for noncompliance with the rules by the maximum of 2 points for each disrespected attribute. Grammatical mistakes, spelling mistakes and improper stylistics and terminology decrease the evaluation by 2-4 points. Only standard terminology should be used, especially in the English language (it is necessary to judge the ability to use the technical language - 2 points), graph are according to the rules (see tolerance and the influence of statistical processing - 2 points), captions are included for graphs and tables and everything is readable (2 points), citation rules are complied with according to ISO690 and ISO690-2 (2 points).	8
5.	**Total points**	90

* Verbal evaluation should be part of the Comments

Czech Technical University in Prague, Faculty of Biomedical Engineering
Department of Biomedical Technology, nám. Sítná 3105, 272 01 Kladno
tel.: +420 224 359 901, www.fbmi.cvut.cz

III. PROPOSED QUESTIONS FOR THE DEFENSE (OPTIONAL)

1. What challenges brings combination of very sensitive measuring microwave system with powerful microwave hypertermia system.

2. In the reconstruction algorithm you are working with parameter TSVD. Could you explain, how does it influence the results and how did you established its final value?

3. The 3D images of reconstructed distribution of difference in dielectric parameters (eg. Fig. 5.12b, 5.10b) shows spherical objects, even though the included fantom has cylindrical shape. Could you explain that? The antenna elements implement some balun circuit. Could you explain, what is it used for and why is it important for you?

IV. THE OVERALL ASSESSMENT OF THE LEVEL OF THE BACHELOR THESIS

Grade**:	A (excellent)	B (very good)	C (good)	D (satisfactory)	E (sufficient)	F (failed)
Number of points:	100 - 90	89 - 80	79 - 70	69 - 60	59 - 50	< 50
	X	☐	☐	☐	☐	☐

** in case of F (failed) please explain in detail

I give the above grade to the bachelor thesis and I recommend/~~do not recommend~~ it for the defence.

V. COMMENTS

The submitted bachelor's thesis fulfils the assignment, except for the use of multiple locations of the phantom modelling the increased temperature. The work is well structured, the scope corresponds to the content of the assignment. The quantity and quality of the resources used is adequate. In the overall well-done work, I would like to highlight the numerical analysis of the influence of the noise level on the resulting reconstruction of the temperature image. I also appreciate the consistent description of the results achieved and their justification. To achieve more promising experimental results, the author proposes a number of potential improvements for the next version of the presented system. I recommend the work for defence, and I wish Mr. Simeonov much success in his further research.

Name and surname incl. degrees: Ing. Ilja Merunka, Ph.D.
Institution: ComAp a.s.
Contact address: U Uranie 1612/14a, 170 00, Praha 7

Signature: ....

Date: ....

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