

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.	Attitude of the student (preparation, initiative, work morale and independence). (0 – 30)* Full points can be given to a student who had a long-term, systematic and independent approach to the bachelor thesis with a clear vision of the solution. Supervisor of the bachelor thesis can decrease the number of points in case of insufficient activity, unsystematic work which was not conceptual and if the student was looking for the easiest solution.	27
2.	Manner and level of elaboration of the thesis and fulfilment of the assignment. (0 – 30)* Consider creative attitude as well as the ability to look for professional resources. Give full number of points if the theoretical part of the bachelor thesis is of a high level and corresponds with the requirements of the practical part. In case of insufficiency of the theoretical part, decrease the rating by up to 15 points. In case of insufficiency of the practical part, decrease the rating by up to 15 points.	27
3.	Scope of experimental work (SW, HW), applied knowledge, publications and other activities, including awards connected with the topic 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.	27
4.	Formal requisites and layout of the thesis (writing mastery, structuring, graphs, tables, citations in the text, list of references etc.). (0 – 10)* Supervisor judges formal requisites with respect to rules of writing, attributes of final works i.e. text formatting, structure of the thesis, list of references, graphs and tables, manner of citation. 2 points are subtracted for each noncompliance. 2 – 4 points are subtracted for grammatical mistakes, spelling mistakes, improper stylistics and terminology. Only standard terminology should be used especially in the English language (ability to express oneself with the use of professional language should be judged – 2 points), if graphs are created according to the rules (see tolerance and influence of statistical processing – 2 points), if there are relevant captions for graphs and tables and that everything is readable (2 points), citation rules ISO690 and ISO690-2 are observed (2 points).	9
5.	Total points	90

* Verbal evaluation should be part of the Comments.

III. 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

** 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.

IV. COMMENTS

Ivan Simeonov designed and implemented most of the experimental setup to verify the feasibility of microwave temperature monitoring during regional hyperthermia in the pelvic region. This mainly included the analysis and selection of a suitable layout and number of antenna elements using numerical simulations and the subsequent assembly and measurement of antenna elements, the design and implementation of antenna holders, the preparation of liquids for matching medium and phantoms, and the subsequent assembly of antennas on the phantom of the pelvic area. The performed experiment revealed generally low amplitudes of transmission coefficients, which leads to a small signal-to-noise ratio. Currently, the reconstruction from the measured data was not successful, but the student in his thesis addressed the problem of increasing the signal-to-noise ratio and showed that for other values of the dielectric parameters of the matching media, and for modified antenna element holders, the reconstruction should be feasible. The work thus brings important knowledge for this application, and therefore I rate it with a grade A and recommend it for defense.

Name and surname incl. degrees: prof. Dr.-Ing. Jan Vrba, M.Sc.
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Signature:

Date: