

I. IDENTIFICATION DATA

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| Thesis name: | Non-thermal electrical discharges for generation of active species. |
| Author's name: | Kirill Chukhlantsev |
| Type of thesis : | bachelor |
| Faculty/Institute: | Faculty of Electrical Engineering (FEE) |
| Department: | Department of Physics |
| Thesis supervisor: | Stanislav Pekárek |
| Supervisor's department: | Department of Physics |

II. EVALUATION OF INDIVIDUAL CRITERIA

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| Assignment | challenging |
| <i>Evaluation of thesis difficulty of assignment.</i> | |
| The thesis was challenging particularly because of the assignment which was very broad in scope. The student had to get familiar with the physics of various gas discharges, plasma-chemical processes in plasmas, and the measurement of electrical parameters. The topic required theoretical knowledge as well as some experimental skills. | |

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| Satisfaction of assignment | fulfilled |
| <i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i> | |
| The assignment contains four guidelines that served as the main objectives of the bachelor thesis. In the thesis, at least one chapter is devoted to each individual objective. Therefore, I am of the opinion that all four objectives have been fulfilled. | |

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| Methods used | correct |
| <i>Assess that student has chosen correct approach or solution methods.</i> | |
| The main objective of the thesis was to measure basic electrical parameters and active species generation in a selected type of non-thermal electrical discharge. The student has chosen the dielectric-barrier-discharge. The method used for the measurement of electrical parameters and ozone and nitrogen oxides concentration was correct, sufficiently precise and accurate. | |

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| Technical level | B - very good. |
| <i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i> | |
| The technical level meets well the requirements set for bachelor theses. The student gained a deeper insight into the research topic by reading relevant sources. Then he did his best to apply the acquired knowledge in his experimental work and his bachelor thesis. The used method is correct, gained knowledge is well presented and the conclusions are justified. | |

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| Formal and language level, scope of thesis | B - very good. |
| <i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i> | |
| The thesis has a proper structure and is well arranged. The most visible unusualness are dots at the end of chapter and section titles. Typos ("then" instead of "than", "in" instead of "is", UF radiation, etc.), language deficiencies and repetitive sentences occurred mainly in the second part of the thesis. The list of references could be improved as well. | |

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| Selection of sources, citation correctness | B - very good. |
| <i>Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.</i> | |

The student quotes 11 papers, conference contributions and handbooks in his bachelor thesis. Even though the list of references could be more extensive, the selection of sources seems to be sufficient. The only source I missed is "Gas discharges physics" from Yu.P.Raizer.

Additional commentary and evaluation

Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.

I do not have additional comments.

III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

Summarize thesis aspects that swayed your final evaluation. Please present apt questions which student should answer during defense

Questions for defense:

In section 3.3.2 on page 14, the author describes the measurement of an average power by the analysis of Lissajous curves. Has the author applied this method in the measurement presented in section 5.1? Is it possible to explain this method during the defense?

Overall, I appreciate the broad scope of the bachelor thesis and its concise and well-arranged structure. The author proved his ability to study a given research topic as well as to obtain and analyze experimental data. In my opinion, the thesis meets all requirements set for bachelor theses.

I evaluate handed thesis with classification grade **B - very good**.

Date: **7.5.2018**

Signature:

