



Bonum59159Confidential

Supervisor's Review of USB RIFCH PhD Thesis

Surname of the PhD student: Irina Kuklina	Name of supervisor: Assoc.Prof. Pavel Kozák, Ph.D.
Title of PhD thesis: Crayfish as bioindicators of water quality	

OVERALL COMMENTARY ON THE PhD THESIS

Although the theme of the dissertation project seemed to be very interesting and simple at first sight, the position of Ira at the beginning of her study was very difficult. The topic is the main part of one of the six WP of the Cenakva project, WP5: "Development and innovation of continuous water quality monitoring system which uses fish and crayfish as bio-indicators and innovative procedures within management of water-supply reservoirs". The equipment for her study was not developed yet, and although we expected the running system in a few months after her arrival, the system development took more than 2 years or it is better to say it is still in the developing process up to now. It was not Ira's fault. Contrariwise, I am very glad to say that at the end of her study we have the system for biomonitoring using crayfish as a bioindicator. The application to patent this system was submitted, and we developed the special sensor as a utility model as well. It is admirable that even when there were not equipment for her study at the beginning, and then, when we had to be careful with publishing of data because of the future patent, she was able to develop and construct the system in cooperation with Petr Císař and Alex Pautsina from the Institute of Complex Systems in Nové Hradky, conducted the experiments, presented their results at several international conferences, and also published required for Ph.D. completion papers in scientific journals in time. She was even able to popularize her work for the Czech audience, giving public lectures devoted to Crayfish Biomonitoring in České Budějovice and Pardubice within seminars "Quo Vadis, Scientia", participated in "Open doors" of the faculty, popularized crayfish for people in the field together with laboratory members, gave lectures on biomonitoring for bachelor and master students etc.

The Results of the thesis are logically divided into 3 main Chapters. The evaluation of crayfish as a good model object for biomonitoring is described in Chapter 2 comprised of 4 scientific articles (1 review, 1 field study and 2 experimental work). It is also necessary to mention an accepted Chapter which is also devoted to using crayfish in water quality monitoring in the new crayfish book edited by T. Kawai et al. The developed system for biomonitoring is briefly described in Chapter 3 including the application for patent and utility model. Although it is a short part of the thesis, the work of the system took a lot of Ira's time (almost all 4 years). She did it with high quality, precisely and independently focusing on her part of job. Chapter 4 contains the results of experiments with testing crayfish reactions to natural and chemical stressors that were run using biomonitoring system. These results are not published yet (except conference abstracts) due to two reasons. The first is that construction of the system (hardware and software) took almost all the time of her Ph.D. study. Second is that we had to wait with the publishing of the obtained results, in order to submit the patent application (April 29, 2014) prior to publishing. I have to say that it was a little bit risky for her and for me as well at the beginning of her study to do everything in such a way, but in my opinion, the risk was justified by Ira very well.

Finally, I evaluate the PhD thesis as extremely successful and useful for future research work and application as well.

Besides, I would like to say some words personally about Ira and her character. She has shown excellent abilities of human relations in the laboratory, as well as elsewhere, and she is very popular and respected among colleagues. She worked on her thesis independently from the planning of methodology to the evaluating of results and compilation of publication. She was always ready to help everybody and everybody likes her help because she is handy and precise in the laboratory and field work, and writing of scientific papers as well. It was real pleasure to be her supervisor.



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FINAL RECOMMENDATION

- can be recommended for defence of PhD Thesis
 can be recommended with reservations for defence of PhD Thesis
 can not be recommended for defence of PhD Thesis

2.5.2014

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Date and place


Pavel Kozák

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surname and signature