



Confidential

Review of USB FFPW PhD Thesis

First name(s), surname, titles of the PhD student: Ložek Filip, Dipl.-Ing.	First name(s), surname, titles of supervisor: Prof. Dipl.-Ing. Pavel Kozák, Ph.D.
Title of PhD thesis: Crayfish cardiac and locomotor activity as a tool for study of pharmaceutically active compounds effect	
REVIEWER:	
Surname: Huber	Institution: Bowling Green University, Ohio, USA
Name: Robert	
Titles: Dr.	E-mail: rhuber@bgsu.edu
Please describe your professional relationship to the PhD student: colleague working in similar field	Please describe your field of expertise: neuroscience and pharmacology

QUESTIONNAIRE

Originality, scientific importance, perspectives and impacts of results presented in the PhD thesis for basic and/or applied research

Evaluate competitiveness of the PhD thesis in the international context and compare its level with the current state of the art in the field (**extent ¼ - ½ page**):

The content of this work is of great interest in the field of aquatic toxicology and the work applies an innovative strategy towards measuring the drug-associated effects. Invertebrates have emerged as useful study models for a wide range of behavioral, genetic and physiological effects. The dissertation is timely and well-crafted, it progresses through several levels of technical complexity in an intuitive way, and I found the train of thought easy to follow.

Elaboration of the PhD thesis, objectives of the work and deliverables

Evaluate the overall level of elaboration of the PhD thesis (structuring of the main text, comprehensibility, logicity of the chapters and their ordering) and the originality of the selected approaches to solve the objectives; evaluate publications and whether the results described correspond to objectives of the PhD thesis (**extent ¼ - ½ page**):

Lozek's dissertation has several sections which follow the logical arc in a natural sequence as it starts



with a thorough review of our current knowledge on the topic. He manages to frame his questions in a wider context through a set of goals outlined at the end of chapter One. Chapter Two introduces the techniques used in this project. As a completed manuscript to the Journal of Visualized Experiments it demonstrates considerable technical prowess in developing an integrated utility for this purpose, and a sophisticated, multidimensional analysis of cardiac signals in response to a host of environmental toxins. This study greatly enhances our ability to characterize internal, physiological parameters using non-invasive technology and thus manages to significantly advance our ability to explore the effects of physiological determinants in behavior. Representing an impressive conceptual and technical effort, he is harnessing a designed set of sensor hardware for the capture of complex physiological parameters. Chapter Three includes an impressive body of work which summarizes efforts to extract a level of specificity from a rather general physiological response related to stress-induced increases in heart rate. I found the results of this section rather surprising and I would like to congratulate Lozek on a set of investigations that are a true tour-de-force.

OVERALL COMMENTARY ON THE PhD THESIS

Please write comments in extent of 1-2 pages:

see accompanying letter

FINAL RECOMMENDATION

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

2020/07/15 in Toledo, OH

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Date and place

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Name and signature