

Tutor Evaluation of Bachelor Thesis

Author Name: Eliška Mihačová

Thesis Title: Application of ultra-weak photon emission imaging in plant research

Tutor Name: MSc. Ankush Prasad, Ph.D.

Criteria N.	Evaluation criteria	Points (0-5)
1	Work activity	4
2	Interest in thesis topic (frequency of discussions with the tutor, knowledge of relevant scientific literature)	5
3	Manual skills	4
4	Diligence and reliability	5
5	Evaluation and interpretation of experimental results	5
6	Independence during thesis writing	3
Total points		26

Max.
30

Comments:

In the current work, using *Arabidopsis thaliana* as a model plant, Ms. Mihačová accessed different abiotic stresses reflected by ultra-weak photon emission. Charge-coupled device (CCD) camera was used as a low-noise detector to image ultra-weak photons emitted spontaneously and/or under abiotic stress condition. An enhancement was measured in all stress-induced cases and spatiotemporal distribution showed the localization for instance, at the site of mechanical injury/ wounding. Further, spectral analysis of photon emission was achieved using optical filters mounted on the objective lens. The presented results provide a comprehensive dataset showing research areas where CCD imaging can be used/ applied.

Ms. Mihačová performed rigorous experiments during the end of her project work and managed to complete the project with her hard work and diligence. A part of the result obtained during the study will form a part of an article that is now under preparation.

My opinion of the student is positive.

Comments and questions to the thesis:

Q1. What is the variability in ultra-weak photon emission between different samples for instance, with variable age of the plant, chlorophyll content, etc.?

Q2. What other stress can it be applied to?

Conclusion: I recommend this thesis for defence.

In Olomouci on 23.05.2022

Signature: 

Thesis evaluation according to total points:

A – 26-30

B – 21-25

C – 16-20

D – 11-15

E – 6-10

F – 5 and less