

Supervisor report

Václav Šlouf became a PhD. student in our lab in 2009 after successfully defending his master thesis also in our lab. Since the beginning of his PhD. studies he has actively participated in essentially all experimental work and has been active also in various discussions of different research projects carried out in our lab. He quickly grasped the experimental techniques used in the femtosecond laboratory and already as a first year PhD. student was able to design and carry out complicated experiments on his own. Already in the first small project of his doctoral project, a carotenoid band shift in xanthorhodopsin, he developed a specific way of data analysis that led to a significant improvement of understanding of the process. As it is obvious from the thesis, the main stream of Vašek's doctoral project has become a role of carbonyl carotenoids in LH1 proteins of purple bacteria and aerobic anoxygenic phototrophs. This project, which has been essentially driven by him, led to a rather surprising conclusion that interaction of a carotenoid keto group with amino acids in LH1 protein is responsible for activation of an intramolecular charge transfer state. As it often happens, the question we asked at the beginning of the project was completely different, and it was particularly due to Vašek's stubbornness in finding answers to other (very important) questions that the project was extremely successful as evidenced by publishing the key paper of this project in PNAS. It is worth noting that Vašek did not finish there and extended the project further and by patiently studying sequences of various proteins was eventually able to determine which amino acids in LH1 are crucial for activation of the ICT state. He presented his results at numerous conferences, including two oral presentations, and at all conferences, as I may judge from observations, he was truly active participant, vividly discussing various topics regardless his discussion opponent was a world famous professor or a PhD fellow.

Besides his scientific and experimental capabilities, I must also mention his pedagogical and popularization work. During the second half of his PhD. he somehow naturally became a mentor for a new PhD. student and helped both scientifically and socially. Toward the end of his doctoral period he acted both personally and scientifically far beyond the standards expected for a doctoral student. Václav Šlouf is one of the best PhD. students I have ever worked with. It has been a pleasure to be his supervisor because his curiosity, endurance and hard work left me essentially in an observer role, which is the best a supervisor could hope for. It is my great pleasure to give this supervisor statement here today and recommend his thesis for the defense, because this thesis is truly and entirely his own work, with me being just an editor and guide.



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