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**Ab initio modeling of primary processes in photosynthesis :
protein induced activation of bacteriochlorophylls for efficient
light harvesting and charge separation**

Wawrzyniak, P.K.

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Afterword

Here I am, sitting in the library in the night writing the last words to the thesis. When I look back in time over those years spent in Leiden, I clearly see how blind I was. During that tremendous journey, with lots of turns, ups and downs and detours, I have been confronted with many challenges of various nature. From today's perspective I see clearly a shortcut, a straight line connecting then and now. But I guess this is the purpose of a Ph.D. — to learn about the world, people and yourself. I am convinced I have learnt a lot and that time, albeit difficult, has not been wasted.

This thesis would not have been written without a constant support of my beloved wife Marzena. Your understanding, patience and warm words gave me the necessary hope in the worst moments of resignation and doubts. I also appreciate your cheerful joy which you shared with me for each good news I was bringing home. Thank you so much for everything you have done for me, this thesis is largely your merit. Next warm words go to our daughter Julia, who being only 2 years old cannot read them now, but I am pretty sure will enjoy them one day. Julia, I feel guilty I sometimes had to stay at work until late and could not kiss you for good night or that I was not in a mood to play. I very much admire your understanding and your efforts to make me smiling. I promise you that when all this is over, all three of us will take a long holidays to enjoy time together.

Then my thoughts go to my parents and sister. Mamo, Tato, dziękuję Wam za Waszą miłość i wsparcie. Pomimo dzielącego nas dystansu tysiąca kilometrów byliście obecni w naszym życiu i mogliśmy razem z Wami wspólnie przeżywać radości i smutki, a to jest bardzo ważne. Dziękuję również za

wszystkie pomocne rady i Waszą troskę. Ania, thanks for your love and friendship. I am glad that we can share our life with you and I am very grateful for all your help and frequent visits, even though you are very busy with your own Ph.D. You are the best sister ever. Kocham Was bardzo!

I would not be here right now without my curiosity for exploring the surrounding world. This interest, and especially the interest in chemistry, originates from the extraordinary attitude of my parents that have put a lot of energy into my uprising. Also, several other people helped to cultivate this gift and I would like to thank them here.

Chciałbym podziękować nauczycielom z lat szkolnych i uniwersyteckich za wiedzę i umiejętności, które mi przekazali. Jestem szczególnie wdzięczny Barbarze Kołton oraz Stanisławie Jeż za rozwój mojego zainteresowania chemią, Marzenie Tyszeckiej za wspaniałe lekcje życia i stymulację w realizacji marzeń oraz Lechowi Bernasiowi za wkład w moją edukację informatyczną.

Obviously, I cannot forget about the great friends Łukasz and Arek who accompanied my university times. We had hundreds ideas per second and together we made many crazy things, having fun but also establishing some unusual traditions at our department. That was extremely enjoyable time and that is why I miss every second of the student life. But more importantly, our discussions in Jaszczurka supported by large amounts of beer and subsequent tradition of the Thursday's Dinners with additional presence of Kuba, kept the excitement with science on a high level.

My adventure with the professional science started with the theoretical group at the University of Wrocław, which adopted me almost at the beginning of my studies. I would like to express my gratitude, especially to Jarek, Aneta, Andrzej, Sławek, Krzysiek, Agnieszka and Prof. Latajka, for all the valuable advices packed additionally with incredible amount of humor. Thank you for this opportunity; it was a very remarkable time for me. Then a milestone point was my stay in Helsinki, where I met Jan and Ermelinda. Jan, I am very grateful for your coaching, patience, generosity and all the other good things that I have experienced. Ermelinda, thanks for your discussions, advices and all the fun we have had. All together you helped me to make a final decision to pursue the Ph.D. studies.

During my first days in Leiden I was confronted with rainy and windy Dutch weather but also with kind hospitality of Ania and Tomek, who helped me to feel like at home. Being initially accommodated at the 400-years old house of Mrs. Tweehuysen, a very generous and helpful lady, I had a great opportunity not only to feel welcome but also to learn about the Dutch culture and history. At the university the friendly and vigorous company of Anna, Swapna, Shipra, Prashant, Geerten, Esha, Eugenio and Rob blended me quickly into the social life of the group. Thanks for making my first months here so nice.

Francesco, your professionalism and knowledge but also understanding and empathy helped me to successfully arrive to the end and saved the research from ending in a blind street. I very much appreciate your scientific curiosity, which makes you a true scientist who enjoys what he does and does what he enjoys. This is how I always envision science - as a passionate journey of a passionate man to understand the world we live in. It is actually a pity that there are not so many of those left in today's world. Huub, your valuable comments regarding all the manuscripts and this thesis have been of great help. I appreciate your constant commitment to improve the quality and impact of our work.

Especially, working with Swapna and Anjali gave me lots of fun. I enjoyed our discussions and the thrill of excitement as new parts of stories were unfolding. Additionally, I am grateful that Anjali agreed to translate the thesis summary into Dutch. I am also glad to had such good students. Mattijs, Roland and Maarten — you all worked very hard and gave a significant contribution to my project. I am very happy and proud that your names appear already in research papers. An important support has also came from Mark and Roar of the theoretical group, who were solving technical issues on the computing clusters in minute time. Finally, I would like to acknowledge Jörg for the possibility of observing him in a classroom. That was a very stimulating experience to learn from such a remarkable teacher.

Working in the multicultural and diverse environment of the SSNMR and BOF groups, the NMR and TOA units, and the undergraduate students was a true experience. Every single person (too many to list all of them here)

has its own contribution to my memories and all together, the present and former members, created an interesting group of people. I have spent most of the time at the department with Karthick and Thierry in our LCP 2 office. It was great to share various tips, talk about hobbies and future plans or just simply enjoy our magic drawer full of sweets. I liked very much our drinking sessions and jokes, as this resembled me the university times. And despite the office being off the main pathway, Niels used to visit us frequently, what was a great addition to the team. Niels, we have spent many hours on memorable and interesting discussions about nearly everything and they were very stimulating. It was also handful to exchange our experiences, frustrations and victories, and to support each others on the way towards the degree.

As in each profession, also in science bureaucracy and administration occupies a significant position. Going through number of forms and procedures was relatively easy due to the help of Liesbeth and Esther. I was amazed with your ability to handle the things and to push them quickly over the counter. Also many things were possible because of the help from Trudie, Arjan and Paul who were always smiling and positive about the future. Separate acknowledgements go to Jan for introducing me to a wonderful world of IVAO.aero. This has definitely elevated my interest in aviation to a new dimension. I hope we will still meet many times on the European sky and traditionally I wish you an equal number of take-offs and landings.

Last but not least, I would like to thank all my friends from the “outside” of the university. I especially owe big thanks to Przemek for keeping me alive by constantly updating me about lots and lots of interesting topics, which went a bit aside during my work here. Throughout our long friendship you were always able to provide simple solutions for difficult problems and your ability to see things from different than mine perspective was very useful during some of the hard moments here. I am grateful for your support and interest, and I do hope that ND will come back to its glory one day. Also Edyta and Karol were a sure source of a nice company and we have spent some valuable time with you, loaded with tons of jokes and laugh. Lots of inspiration comes as well from the family of Renata, Piotrek and Maciek. Thanks for all the good time together.