B Acknowledgments

I would like to thank Prof. Karsten Horn, who gave me the opportunity to study such interesting topics in his research group. I had the chance to follow my interests and shape the experiments according to my ideas. The discussions with him were always inspiring.

Dr. habil. Thorsten U. Kampen guided me through my research work. Together we performed the numerous experiments at BESSY. I especially want to thank him for all the patience he had with me during beamtimes and for all his experience, practical and theoretical, he shared with me. I learned a lot from him and the beamtimes together I will always remember.

I am thankful to Prof. Nacho Pascual for accepting to be my second supervisor. His advice was always helpful.

Special thanks go to Prof. Wolfgang Kuch, who took the time to read my thesis before submission. The feedback I got from him brought me a big step ahead.

I want to thank the whole Department of Molecular Physics and in particular the director, Prof. Gerard Meijer.

My whole Ph.D. research was done in the context of the International Max Planck Research School: Complex Surfaces in Materials Science (IMPRS-CS). The time spent together with the fellow IMPRS students was special, from a scientific but also from a personal perspective. The workshop at Ringberg castle organised together was indeed unique.

Most of my experiments were performed at BESSY. I am really thankful to the BESSY staff for all their help and support. Especially I would like to mention Birgit Zada and Dr. Willy Mahler, the beamline scientists at the UE56/2. They always did their very best to make my work easier, not to mention the numerous non-scientific discussions I enjoyed with both of them. The many nights spent at BESSY I will never forget.

It was my pleasure to work with all group members of Prof. Horn. Dr. Hugo Dil should especially be mentioned. He helped me on several occasions during beamtimes at the beginning of my Ph.D. work, and his input in our discussions was always valuable.

I greatly acknowledge Dr. Christine Kolczewski from the group of Prof. Klaus Hermann. She performed the StoBe calculations of the stilbene. These results were a step forward for this project. The gas phase experiments would not have been so successful without Dr. Ralph Püttner, who shared his knowledge with me.

Experiments together with cooperating research groups have been part of my work during the last three years. It was a pleasure to work with Prof. Maria-Novella Piancastelli and Dr. Jeong-Won Kim, former group members of Prof. Horn. They performed the first experiments on the C1s-CD. There is a very close cooperation with the group of Prof. Enrique Ortega. Beamtimes spent together with Miguel Ruiz Osés were not only productive but also very enjoyable.

Working at BESSY implies sharing shifts with other experimentalists, in my case quite often members of Prof. Kuchs's group. Their dedication, enthusiasm and their good mood was always motivating. For almost a year Prof. Dr. Arantzazu Mascaraque and Dr. Rocio Cortez joined our group for STM experiments. Working with them was an enjoying and inspiring experience.

I am greatly thankful to Manfred Erdmann. He always got me out of technical difficulties with his special friendliness and many ingenious ideas.

Finally I want to especially thank my family for everything — all their help, support and their good thoughts in all these years. My parents, Ute and Calle, were always encouraging me. They found the right words in every moment. Without my wife Ramona I would not have managed. She always stood by my side no matter how difficult times were. For it was her making every day for me so special. And my little sunshine Luis, my so unbelievably cute and always smiling son. He is the extraordinary joy in my life. My never ending source of luck and strength.