Coherent X-ray scattering of charge order dynamics and phase separation in titanates

Shi, B.

Publication date
2017

Document Version
Other version

License
Other

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
Acknowledgments

I am reading an adventure novel recently. From its plot, I found quite some similarities with my PhD. To obtain a physics PhD is somewhat like surviving in the wild, if you are not Bear Grylls, then you definitely need to be lucky to get a lot of help from others. Many unforeseen obstacles and challenges, are ready to bewilder you along the path, not even mentioning the unknowns that you are pursuing. With the countless synchrotron days and nights, I became a beamline geek and a programming maniac. On a more positive aspect, as a reward, I acquired a physicist’s mindset, which allows me to treat puzzles and unknowns in terms of mathematical models supported by facts, causality, logic and philosophy. I have been working in industry for two years now. This way of thinking continuously helps me out along the maze of finding root causes of complicated issues. It is now an absolute pleasure and honor to think back, when all the 'pains' become memorable 'invaluable' experiences.

Among those great helps I got during my PhD, firstly, I would like to express my great gratitudes to both of my daily supervisor dr. Jeroen Goedkoop and my promoter prof. dr. Mark Golden. Thank you so much for admitting and guiding me through this fantastic research field. Jeroen, you are a knowledgeable experimental physicist and an cello artist, who certainly pursues perfection. You taught me so much on condensed matter physics and diffraction theory. In those years, you were still active at the beamlines, where I learned with your great patience to carry out proper diffraction experiments. During the 4 years, you also helped me a lot on my personal life. Thank you Jeroen for all of these, and a special thanks to you for the hard works that we spend towards this thesis. Mark, you are such a cool professor of van der Waals-Zeeman institute with the spot-on humors and attractive personality. I still remembered our first appointment, when you explained me the current understanding of superconductivity on an A4 paper. That was so vivid and impressive. Through the years, you often emphasized and discussed with me the 'big picture' of physics beyond techniques, which helped me immensely. Thank you so much for your guidances and great efforts on me.

Besides my dear supervisors, I would also like to give my thanks to two kind ladies. Dieuake, thank you for driving me and my equipments to Hamburg during my driver-license-less period. Thank you for always giving me support during my PhD. Maria, many thanks to
you also for concerning the progress of my thesis and for encouraging me on finishing my PhD thesis.

I was so lucky to also have the chance and honor collaborating with many esteemed scientists during my PhD period. Dr. Christian Schüßler-Langeheine, I was privileged to be able to work with you. You are such a dedicated experimental physicist and a kind teacher. I had learned a lot from you since our first beamtime. I was so grateful to be able to access your all-round equipment storage for kicking the technical difficulties away. Thank you for all the helps to make our experiments happening. Thank you very much for being one of my committee members.

Dr. Anne de Visser, thank you so much for being one of my thesis committee members (I remembered that you were also among my master thesis committee). You are so important in my big times. Thank you Anne. I am very grateful.

Professor dr. Christian Gutt, it was a pleasure to work with you during LCLS beamtime. You are so knowledgeable on coherent X-ray diffraction and very easy going. I certainly enjoyed those nice discussions. Thank you Christian also for being one of my committee members.

Professor dr. Hermann Dürr, thank you for letting me into the ultrafast domain of x-ray scattering. Starting from the summer school in SLAC, we worked together during Flash and LCLS beamtimes. Thank you for all the discussions about our experiments, and your sharp views on transition metal oxides. Thank you Hermann also for being one of my committee members and coming all the way from the States.

Professor dr. Frank de Groot, thank you for being one of my committee members. I really appreciated your kindness. I enjoyed a lot of your CTM4XAS workshop and I certainly learned a lot from your multiplet textbook. Thank you Frank.

Dr. Micheal Sprung, we did our most successful experiments at your P10 beamline. We benefited a lot from your expertises. I have no doubt that the best hard X-ray coherent scattering beamline in the world belongs to you. :)

At the same time, I am also very grateful towards my dear colleagues of quantum matter group at University of Amsterdam. Erik Slooten, you are awesome. It was such a pleasure to be your teammates for many beamtimes. You are such a skillful experimental physicist, and I enjoyed to work with you. I found that many Dutch guys have hidden talent, and you are not an exception. You are a rock star and I would also like to congratulate you for becoming a father. Thank you Erik.

Nick, it’s cool to work with you on experiments and also to team up with you among those soccer games in USC. Congratulations for your PhD and best wishes for your new career. A special thanks to you and Erik for being my paranymphs.
Emmanouil, thank you for reviewing part of my thesis. I learned many things from you during your time at UvA. It was a pleasure to go together with you to the APS meeting in the States and to drive through Rocky Mountains. Thank you Emmanouil. Wish you all the best for your academic career in France.

Yingkai, you are such an expert on growing perfect samples. Your avant-garde insights in new technologies and your humbleness always reminds me my ignorance. I learned a lot from you. Thank you so much.

Erik (big), I still remembered that you helped me on tracking the moving ‘satellite’ peak after one of the X-ray diffraction experiments. Thank you so much for your help.

Pan, you are the second Chinese student in our group since I joined. It was a pleasure to have you in the group and I enjoyed a lot to talk with you. Certainly, thank you for your help during my thesis printing process. Dr. Dong Wu, it was great to know you for one year. I learned many things from you. Wish you all the best in China.

Berend, I certainly got a lot help from you during my last beamtime in BESSY on XMCD experiments. You are a self-driven and energetic young physicist. I enjoyed the beamtime with you. Wish you a lot successes in UBC.

Bay, Artem, Alona, and Shayma, thank you guys for all the fun times we spent together.

Freek, and Jochem, thank you for helping me in many IGOR programming bottle necks. Sanne, thanks for the discussions on LSMO data.

Hulb, during the first year of my PhD, I received a lot help from you. Thank you very much. You are always patient and kind. You were the 007 in our institute. Hugo, thanks for helping out also in many situations.

I would also like to thank the administrators of IoP, Ineke, Rita, Luuk, Joost and all. Thank you so much for all the kind helps.

During my PhD, I met and worked with several great young physicists from external institutes. And of course, a lot thanks to them.

Alessandro, the beamtimes that I spent with you appears in my mind vividly, which feels like yesterday. I enjoyed to work with you. No matter it was ALS or Petra III. You always stayed cool and gave people hopes, which I knew that came from your confidence and experiences. I learned a lot from you. I also enjoyed the summer school in Sicily together with you. Thank you so much for introducing me the technique of X-ray microdiffraction.

Marcel, you worked exactly on the same topic as me. I am so glad to have you in the team with you skillful hands and sharp insights. Congratulations for your PhD. Thank you for your nice coffee during those beamtimes. Wish you all the best for your new career.
Christoph, we overlapped mostly of our PhD time. You got the magic to tame the machine beasts. Some of the equipments only became corporative when you were around. Thank you for helping out through my PhD. Wish you all the best in your academic career.

Josef, thank you for helping out on the ASI X-ray camera calibration. It was a great pleasure to work with you. You are an extremely skillful programmer and detector physicist. Thank you so much.

At the finishing point of my PhD, I got to know Harry. You are such a nice career coach. I benefited a lot from your empowerment sessions. Thank you so much Harry. Also a special thanks to Mr. Hans Roeland Poolman. Thank you Hans for the opportunity that you gave me. I cherished it a lot.

I came to Netherlands eight years ago. Back then professor Bernard Nienhuis had helped me greatly. You had a deep care to international students as the coordinator of master program. Thank you Bernard. Also a particular thanks to Professor Erik Verlinde, thank you for being my master thesis supervisor and bringing me into research. Without your guidance, I could not think about a PhD later. Your marvelous physics insight will continuously inspire me.

I would also like to thank all my friends. Xiong Hui, thanks for being my training buddy, and being there for me when the downtimes came. You are a great friend. Congratulations on your PhD and your marriage. Wish you all the best in your next career. Zheng Zhengzheng, Sun Fei, Hu Ninghang, Tian Yu, Li Zhenghao, Chen Qingwen, Wang Fan, Wu Yong, Zhang Yanxia, Jessica Li, Tan Shijin and more, thank you so much for bring me trust and fun. And to my dear colleagues in ASML & BS, Martijn, Alok, Neehar, Leon, Stijn, Carel, Marcel, Peter, Rita, Roel, Rutger, Aditya, Marcel, James, Barry, Vinita, and all others, thank you for always having faith in me and supporting me during the past two years. It is certainly possible that I forgot someone. Please accept my apology and my thanks to you here.

Finally, I would like to give my enormous gratitudes to my family. To my wife, thank you so much for being there and going through all these difficulties together with me. Thank you for dragging me away to holidays that helped me to regain energy. Thank you for being a great chef during my PhD period. To my parents, thank you for raising me up and being there for me with your immense and unconditional love.