Acknowledgements

The long march to finalise this thesis is ready and this would not have been possible without the help of many people. First of all, I want to thank my supervisor, Prof. dr. ir. H.J. Heeres, to give me the chance to work in his group, although my oral English was poor when I came to the Netherlands. Erik, I’ll never forget your patience, valuable guidance and countless support during my PhD time. You have done much extra works to make me graduate successfully, for example, to come to Beijing and Guangzhou to discuss the chapters of the thesis. Thank you for teaching me a lot, including in scientific research methodology and how to treat foreign students with a good understanding of their culture.

Special thanks go to the reading committee, Prof. A.A. Broekhuis, Prof. F. Picchioni and Prof. K. Seshan for spending their precious time to read and correct my manuscript.

I acknowledge the Dutch CatchBio Program, part of the Smart Mix Program of the Netherlands Ministry of Economic Affairs and the Netherlands Ministry of Education, Culture and Science for financial support. I am grateful to our project partners from Utrecht University and the University of Twente: Prof. B.M. Weckhuysen, dr. P.C.A. Bruijnincx, Prof. K. Seshan, dr. T.M.C. Hoang and dr. I. van Zandvoort. Thank you all for your cooperation, helpful discussions, comments and contributions to publications.

I also want to especially acknowledge our technical and analytical team. Marcel de Vries, Anne Appeldoorn, Erwin Wilbers, Leon Rohrbach and Jan Henk Marsman, thank you all for your hard work and interactions. I would also like to thank Marya de Jonge for all support with administration.

I would like to thank my previous supervisors Prof. dr. ir. H. You and J. Yao. Thank you to allow me to go abroad, although my leave brought some inconvenience for our program in the Harbin Institute of Technology. I also thank you for your help after I left Harbin. You are the best supervisors in China and make a good example for university teachers.
I would like to thank my special friends, dr. Erping Li and dr. Shiliang Wu. Erping, this thesis would not have been possible without your encouragement and support when I faced hard life problems. Brother Wu, you and your family helped me when I bought my first apartment and still support me without telling me that you also faced some financial hard time. I’ll remember your great friendship forever.

My PhD time at the University of Groningen was a cocktail of challenges and interesting and funny encounters with other lab members. Herein I would like to acknowledge my colleagues and ex-colleagues: Maria Jesús Ortiz Iniesta, Zheng Zhang, Arjan Kloekhorst, Ionela Gavrila, Ignacio Melián-Cabrera, Leon Janssen, Esteban Araya, Rodrigo Araya, Patricio Raffa, Shilpa Agarwal, Jan Henk Marsman, Laurens Polgar, Agnes Ardiyanti, Yusuf Bin Ab Ghazali, Anna Piskun, Yin Wang, Miftahul Ilmi, Louis Daniel, Lidia Lopez Perez, Jenny Soetedjo, Boy Arief Fachri, Ria Abdilla, M. Iqbal, Joost van Benekom, Jan Willem Miel, Martijn Beljaars, Eric Benjamins, Cynthia Herder, Angela Kumalaputri, Susanti, Diego Wever, Frank van Maastrigt, Bilal Khan Niazi, Leon Rohrbach, Sjoerd van der Knoop, Claudio Toncelli, Teddy Buntara, Andrew Phua, Graham Ramalho, Arne Hommes, Inge Noordegraaf, and Arjen Kamphuis. I hope I did not forgot to mention any names, otherwise please accept my apology in advance and, as a Chinese proverb says, “barracks stand by endless like steel whilst soldier always flow like water”.

My heartfelt thanks also to my Chinese friends which I met in Groningen, especially for the members of the “happy old man football club in Groningen”. Founder dr. K. Liu, captain dr. L. Zheng and vice-captain T. Zhang, you created a lot of fun for our Chinese students in Groningen. People will remember you until the end of time! I also thank Yajun Gao, Weiguo Xia, Zhiyuan Zhao, Zhaopeng Wang, Boyun Liu, Xiaoming Miao and Huyu Si. I love you guys and our no bottom jokes always came back in my dreams with funny laughs.

Certainly, I would like to thank my family for their constant support. Thanks to my parents, you are the greatest parent in this world. I am sorry that I cannot give you a better life when I am almost forty years old. You always understand me without putting extra-pressure on me when I try to catch my far and misty dreams. Special thanks to Wanyan Sun, you came to my life when I was deeply disheartened and you always accompanied me in hard times. To marry you was the most important decision in my life. Finally, thanks to Qianying Wangsun, my dear son, you gave me a lot of fun when I prepared this thesis. This thesis was born with your laugh, cry and inexhaustible childlike interests, and you remind me to the heavy responsibilities I have as a man and a father.

Yuehu Wang.