

---

---

## Curriculum Vitae

---

The author was born on 25th of November, 1980 in Vlaardingen, the Netherlands. At the age of four he came back from Hong Kong and continued at a primary school in Vlaardingen. After finishing high school at *Aquamarijn College*, Vlaardingen, in 1999 he entered the Technical University of Eindhoven (TUE) for a double majored first year university program; computer science and applied mathematics. Although there was interest towards different exact sciences, he chose to continue with mathematics. During his master study he went to the department of Aeronautical and Vehicle engineering at The Royal Institute of Technology (Kungliga Tekniska Högskolan) in Sweden to work as a trainee on researching the liner of a turbo jet engine. Thereafter his curiosity and interest in science grew. Back in the Netherlands he started to work on a phenomenon in dynamics of vortices observed by the Turbulence and Vortex dynamics group (from the TUE) under supervision of prof.dr. J. Molenaar, which resulted in his master thesis, entitled *2-D flow evolution in bounded domains*. In 2005 he received a master degree in applied mathematics.

In 2005 he started his Ph.D. research with Prof. dr. Hans Fraaije in the Soft Matter Chemistry group at the Leiden University. During his Ph.D. research the author attended the Ph.D. school in Han-sur-Lesse and also several Ph.D. workshops has been attended (courses include: "Polymer Physics", from the national research school PTN (Polymeer Technologie Nederland); "Understanding molecular simulations", from CECAM). The author also participated in workshops outside the chemistry field, including: "Mathematics for Industry" study group and the workshop: "Fast Numerical Solution of Partial Differential Equations" in Utrecht. Poster presentations have been given by the author at the "Vloeistoffen en grensvlakken" meetings in Lunteren, the Netherlands. His Ph.D. work has also been presented orally in his research group and at the meetings in "Vloeistoffen en grensvlakken" in Lunteren.



---

---

## Acknowledgments

---

In the end I would like to express my gratitude to people, who in one way or another influenced my life and the realization of this thesis.

First I would like to thank my office mates from the Soft Matter Chemistry and Colloid and Interface Science for creating a good working atmosphere. My special thanks to Hana Robson, Valeriya Ratushna, Frank Versluis and Ahmed el Jilali for having sense and nonsense talk about life. Where with the latter two the (non)sense discussions often continued after office hours during our walk from the office to the train station. During my PhD I was also very glad to meet Edgar Blokhuis. A person hard to forget since he triggered my (educated) gambling addiction, thanks Edgar!

I would like to express my gratitude to the rector magnificus of the Technical University of Eindhoven, Hans van Duijn, who sent me away from TUE to experience how others handle/solve problems (until today I am not sure whether he doesn't want me in Eindhoven or it was a sincere advice). Which brings me to Hans Fraaije, who gave a mathematician the opportunity to work in the physical chemistry field. I am very grateful for this opportunity and also the physical insight that I have gotten from him. Although the physics can be explained, really understanding and being conscious about physical phenomena takes time. One might want to compare the process of realization of this thesis as one whole minimization process, where finding the global minimum is the goal. This thesis provides an acceleration technique for accelerating the slow modes and avoiding critical slowing down. Unfortunately this technique is not present in real life and in the process of thesis realization. However when I got stuck (staying in a local minima) or moving in the wrong direction, there was always Agur Sevink (the accelerator?) who provided me valuable advice and prevented me from getting off road (critical slowing down). Thanks for your help and being present!

My life would not have been the same without Camron and Olivia Chau. I will never forget our wonderful and meaningful discussions day and night. It was very interesting to experience how you approach and solve problems, which certainly will be cherished in my memory.

Last but not least, my sincere gratitude towards Cheryl Chang and my family for their endless patience and for just being there.