

Chapter 1

Acknowledgements

“I do not want to end up like one of those scientists, obsessed with his/her research that is performed in a dark laboratory in some basement.”

This is what I told my mother eleven years ago after visiting the open day of Delft University of Technology. I had decided to enroll in the BSc program for Applied Physics because I loved physics in high school, but clearly there was a slight prejudice against scientific research. Ironically, it was exactly in such a dark lab in the basement that I changed my mind. I specifically remember one of the first days of my Msc research project when my advisor, Gijs, told me “Common, lets rotate a single spin with our hands”. We were watching the light emitted by a single electron trapped in a diamond sample and as we rotated a knob to generate different magnetic fields we could see the signal drop as we hit the sweet spot where the magnetic field was on resonance with the spin of the electron. In essence we were manually operating one of the worlds smallest and most precise MRI machines. Of course this is just one example and I consider myself lucky to have met so many inspiring people during my time in Delft who have motivated and supported me throughout my PhD