Acknowledgement

This is an attempt to demonstrate my intellectual autonomy, so, please do not read this segment with the (underlying) thoughts...

Just to see if your own name is mentioned,
To discover my underlying feelings towards other persons (as they are written or not just written down, but can be discovered in cryptograms).

It’s quite clear to everyone that a researcher cannot complete a Ph.D., alone. The completion of my dissertation and subsequent Ph.D., has been a long journey. It’s true that “Life is what happens” when you are completing your dissertation. Life doesn’t stand still, nor wait until you are finished and have time to manage it. Much as happened and changed in the time, I’ve been involved with this project. Many (my guide, friends, family members etc.) have questioned whether I would finish my dissertation, as have doubted my commitment to it. I, on the other hand, barring losing confidence so many times I’ve lost count, getting writer’s block just as many times (thanks to the internet), ending one relationship, moving, beginning another relationship, computers crashing, needing to work as much as possible, and pure frustration in general, knew I’d compete my Ph.D. I just had to do it in my own time and on my own terms (including this acknowledgement part).

My dissertation has always been a priority, but as most know, there are several priorities in a person’s life at any one time. Unfortunately due to life’s challenges and the changes that followed, my dissertation could not always be the number one priority. At any rate, I have finished, but not alone and am elated. I could not have succeeded without the invaluable support of several, especially the select group I’m about to mention.
First and foremost, I want to thank my research supervisor and guide Dr. R. Ravikumar. It has been an honor to be his first Ph.D., student. I have been very fortunate with him and I would like to demonstrate my deepest gratitude for all the support, patience, advices, (almost blind) confidence, friendship and freedom to pursue various projects without any objection in these years. For this, I cannot thank him enough. I am forever grateful. Thank You Sir!

I'm very much grateful to the management of Jamal Mohamed College that allowed me to do great jobs both in teaching and research. This study would not have been possible without the support of the Principal of my college. I express my sincere thanks to him.

I also thank Dr. S. Ahmed John, Associate Professor and HOD of Botany for always being so helpful and the staff members for always being friendly and I’m glad to have interacted with them.

I’d like to give special thanks to Dr. N. Komalavalli who stepped in as my doctoral committee member. Her flexibility in scheduling, gentle encouragement and relaxed demeanor made for a good working relationship and the impetus for me to finish (at the time of Synopsis). Thank you, Mam!

I’d like to thank Dr. M. M. Shahul Hameed, or as I (we) call him, “The English Man”. I cannot begin to express my gratitude and feelings for this gregarious man. His enthusiasm and love for teaching is contagious. He is not only my HOD but also my mentor. His patience, flexibility, genuine caring and concern, and faith in me, enabled to attend to life (my casual leaves), while also earning my Ph.D. He’s been motivating, encouraging, and enlightening. He has never judged nor pushed when he knew I needed to juggle priorities. We’ve laughed together and he’s also been kind when I needed to cry (his invaluable support on track, facilitating my landing in the department, when myself and Jaabir were immersed in the chaos of moving away from Jamal in 2009). He has always encouraged and helped me to see life and science in their full depth. He appreciates
my work and has enlightened me through his deep intuition about where it should go and what is necessary to get there (our articles got published in popular newspapers). I am also thankful for the excellent example he has provided as a successful man in profession and in person. It has been an honor to learn from him. He has been invaluable on both an academic and a personal level, for which I am extremely grateful and this Ph.D., thesis, is in a way dedicated to him.

Jaabir (as he likes to be called), a wonderful and generous friend, colleague and an excellent researcher who believed in me and without whom I would never have done this work. In fact, Jaabir (as my daily supervisor) never looked over my shoulder and turned out to have an (uncanny) ability to turn almost all my attacks of raging fury into screaming laughter. He had firsthand knowledge of the dissertation process and what I was experiencing. This understanding was priceless for both of us. He has played the part of friend, confidant, conscience, rear end kicker, humorist, phone comrade, etc., etc., I need not say more. He’s been as tough on me as He’s been supportive and caring. In him I have a life-long friend and colleague. For all these reasons and many, many more, I am eternally grateful. Thank you, Jaabir! for being persistent and encouraging, and for the many precious memories along the way.

For this research, Dyes and effluent were essential. Very few people helped with this, for which I would like to thank The Director and (in particular) Mr. Sankaranlingam, of United Bleachers (P) Ltd., wholeheartedly, for inviting us, providing valuable information and materials (dyes and effluent) for this study. Without their generosity there would be nothing to work with.

I also extend my sincere thanks to Dr. Ravi (an eminent chemist), Mr. Sangalimuthu and Mr. Mahibalan and all other officials at Karpagam University (Coimbatore), for inviting us to attend a workshop on Bioinstrumentation. I owe them many thanks! They made our stay very pleasant and comfortable, for all their hospitality extended and for their inputs in this study (analytical reports in chapter III).
It was a pleasure to work with my wonderful student Krishnamurthy (my first M.Sc., Project student in Jamal). I would like to recognize many valuable contributions from Balaji, Selvaraj, Venkatesan, Yuvaraj and TS Balaji (M.Sc., project students). Shamsheerali (M.Sc., project student from Hans Rover College), is the one, whom anyone will instantly love and never forget, once they meet him. He distracted me completely and joyously (Intros to Face book and Orkut) and has been so nice and friendly. Good luck my boy! Shariq Afsar (final year student), a smart and nice guy all around, who has helped with bringing our needed chemicals and supplies and with the stockroom in general. He is a wonderful person with great lab skills. In fact, I've learnt from him about how to be an independent worker. My best wishes to you! I thank Yasar and Akram (final year students), for their help, in the past several months with paperwork. They are talented guys and have helped to fix many of my careless mistakes. You three (Shariq, Yasar and Akram) kept things light and me smiling.

Special thanks to the Vanniyambadi guys, an interesting group and each person has played some kind of role in my time here. They were adept in mixing cleverness and kindness in unprecedented ways. There had been few times when I have worked so hard and even fewer times when it was so worthwhile. Many other students have been involved also deserve recognition. It is, however, not possible to list them all here. Their support in this effort is, however, greatly appreciated. I thank the students whom I was privileged to teach and from whom I also learned much.

I would specially like to thank my colleagues (Biotechnology department) Dr. K. Mohamed Rafi, Dr. J. Sebastin Raj (Thanks for the treat at Kannappas), Dr. (Mrs). T. Nargis Begum and Ms. G. Priyalakshmi, who were all very funny, complementing each other wonderfully well and more than anything, were fantastically normal and human. Mrs. Humera Begum, I like to think of her, as a person who appreciate my quirkiness and sense of humor, and as the guardian angel of our department students (especially for ‘B’ Section, last year) before she left to start her new position in Pondy. I wished she could have continued here (in Jamal) few years for my synopsis and viva-voce (even
Jaabir’s). I’m glad to have her as a colleague and as a friend. The Tamil translation of the abstract and graphical (statistical) representations would not have been possible without the expert guidance of my colleague and friend Mr. P. Sivasanmugam. Not only was he readily available for me, but also read and responded to the drafts of my work more quickly than I could have hoped. Although he is a man of many words, his comments are always extremely perceptive and helpful. Thanks to Naveed Ahmed for his support, a student turned colleague and a sincere friend now. Thanks to Mr. Venkatesh (Iyer) for his friendship and for sharing the glory and sadness of seminars we attended. I also thank Anwar Bhai, a wonderful staff in our Department (as well as in Physics Department, now) for always being so helpful and friendly. Thanks to Mr. A. Raja (Dept. of Microbiology), for the wonderful chat, friendship and for providing access to Gel Doc, when I needed it most.

During the development of this dissertation, I was partially supported by the Helsinki University and Finnish Forest Institute, with a student scholarship to attend a conference (Biogeomon 2009) in Helsinki, Finland. The days I spent in Helsinki would not have been as wonderful without my (foreign) friends. I thank them for the wonderful friendship and for the (beautiful) photographs of mine in such exotic places which otherwise would not have been possible. Special thanks to Lisa (METLA).

The examiners have approved my thesis, meaning my Ph.D., is finally earned. Let the glory go to Dr. G. Melchias! (St. Josephs College). I will always be thankful for his friendship.

Mr. A. Veeramani (a Senior Professor) was a nice fellow scholar, with whom I enjoyed talking about everything but work. I’ll never forget the many wonderful lunches that we had together.
I have been fortunate to come across many funny & good friends, without whom life would be bleak. Special thanks go to Vijayaraagavan (IfKanna, how can I miss you Radha ?) for fifteen years of friendship, support, movies, dinners, discussions, concerts, plays etc., etc., that we enjoyed together.

My parents (Thiru. S. Sadasivam and Tmt. T. Muthunayaki) have given me their unequivocal support throughout, as always, for which my mere expression of thanks likewise does not suffice. Thank you for bringing up who I am today!! I would like to thank my brother (Ram) for his support in all its forms and critiques.

Above all, I would like to thank my wife Aruna (even though she would not consider this necessary) for her (great) patience, love and encouragement at all times. Without her I would be a very different person today, and it would have been certainly much harder to get a Ph.D., in my life. No ‘thanks’ to my daughter Vaishnavi, and only (sincere) apologies for all the disappointments I had given her, particularly in those many in which I spent more time with my computer than with her. *All I can say is, it would take another thesis to express my deep love for you both*…

And last, but definitely not least, my uncle Thiru. Rengaswamy, aunty Tmt. Swarnamala (opening doors & food) and their family. Work is not my (entire) life. I really like working, but my family is far more important to me. It’s great to be part of his (uncles) family and his ability to put things in perspective has helped me a lot. The Sundays with all of you (my family) are great, and I just want to thank you all for not being scientists.

There are some supporting people that I might have forgotten: exhaustion plays havoc on memory. My humblest apologies to those who consider having earned for themselves being cited amongst these lines.
Let me thank all the people who pushed me *(last year)*, pulled and accompanied me on the way. Of course, despite all the assistance provided, I alone remain responsible for the content of the following *(thesis)*, including any errors or omissions which may unwittingly remain. I hope that this document will make a positive contribution to the extension of wastewater use in agriculture and the improvement of wastewater use practices.

After all, thanks for my own dissertation itself, which confers me with a prefix and a suffix, this year in particular *(Jamal’s Diamond jubilee year)*. Yes! It’s the Dr. and the Jamalian, which I feel like heaven.

I finish with a final silence of gratitude to the almighty.

*Truly, Senthil Kumar (Nov, 2010).*