Acknowledgement iii

ACKNOWLEDGEMENT

I would like to express my deepest thanks and gratitude to my supervisors Dr J.A. Wilson and Dr W.E. Jones for all their valuable comments, useful suggestions, help and encouragement throughout this work.

I like also to thank the CVCP for the provision of an ORS award and the School of Chemical Environmental and Mining Engineering especially Professor B.J. Azzopardi for providing financial support.

Special thanks to all my friends at Research Room 6: Anca, Ayse, Chibuike, Cristiane, Diego, Fabio, Ian, John S., Liz, Luca, Mark, Mustafa, Paul, Peppe, Tunde and Wayne.

And finally thanks to my mother Fairouz, brothers Ghassan and Hussam, and Aunt Hayat. Without them all, this work may have never been done.