

## ACKNOWLEDGEMENT

Thanks to Almighty God, Jesus Christ who always blessed to complete this thesis and provide health, wisdom, strength, knowledge, and always give mercy so that this thesis research could be done on time.

The title of thesis is “Analysis and Development of Chemistry Lab Manual For Grade XI of Senior High School on Learning Colloidal System” that arranged to obtain the degree of Sarjana Pendidikan in Chemistry Department, Faculty of Mathematics and Natural Science (FMIPA), State University of Medan (Unimed).

The writer would like to said my gratitude to Prof. Dr. Herbert Sipahutar, M.S., M.Sc., as the Dean of FMIPA Unimed, Dr. Iis Siti Jahro, M.Si., as the Coordinator of Bilingual Program in FMIPA Unimed, Nora Susanti S.Si Apt., M.Sc., as the Secretary of Bilingual Program in FMIPA Unimed, Mr. Iqbal and Mr. Syamsudin as administrator of Bilingual Office for their advices and other necessary administrative business and also Agus Kembaren, S.Si., M.Si., as Head of Chemistry Department.

In this opportunity, the writer would like to express the thanks and great appreciate to Dr. Marham Sitorus, M.Si., as Thesis Supervisor for his valuable time spent in giving guidance, advices, motivation, and suggestion during completing this thesis and also thanks to Drs. Jamalum Purba, M.Si as Academic Supervisor for her support and advice when learning in colloge. The great thanks also go to Prof. Dr. Albinus Silalahi, M.S., Dr. Iis Siti Jahro, M.Si., Dra. Ani Sutiani, M.Si., as Thesis Examiner Lecturer. In all daily activities of them, The writer was lucky because they always guide and give advices, brilliant suggestion, and constructive comments for this thesis completeness.

The writer also said thanks to Mr. Alberto Colia, M.Pd., as Headmaster in SMA Negeri 1 Berastagi, Mr. Deni Tarigan, S.Pd as Vice Principal who helped and give the writer chances to do research in the school, also thanks to all teachers in SMA Negeri 1 Berastagi especially Korry Nainggolan with her husband Mr. Naipospos which has given place to stay during to do research , Asrida Br

Tarigan, Dra. Mariani Barus who helped the writer, giving suggestion in the making of chemistry lab manual become good and advice in the research. The author also says thanks to all students in SMA Negeri 1 Berastagi, especially XI Science 3 that give time and attention during validity process up to doing research.

A deepest love, appreciation and thanks also goes to parents, Rinsan Simanjuntak and Nurmaida Sirait are the best parents in this world, also Juntak's Family, Sirait's Family, lovely sister Tuesryana Simanjuntak, handsome brothers Trifandi Simanjuntak and Andreas Fourtunando Simanjuntak, and also grandmother and grandfather and all big family for their motivation, advice, prayers and financial support to the author during my university lecture process. Thanks also given to handsome boy, beloved boy and future Hariyandi Pardede, that always gives loves in daily life become beautiful woman, always gives inspiration especially in travelling , motivation, pray and strong girl in this process.

Special thanks are given to all my "Getek's"; Rolina (ros), Wita and Ivana thanks for love,smile, laugh,crazy, stupid, support, tag inspiration, tag happy and sad, gossip in the all places whatever until gets big smile, and all. Thanks girls always helping me in my thesis process. Big hug for you all. Don't forget say thanks to 1 teams in thesis (one thesis supervisor) from the first until now always giving me suggestion, friends sharing, and motivation with the others for Pasa, Sherlyn, Marta, Meli, Rani great to have you and great to know you all. Greatest thanks to all my friends in CESP 2012 that always gives me the best moment in my education process for Arif ,Uti, Descey, Elvi, Ernita Evi, Fany, Hariaty (telkuu) big thanks for the laugh, support, love, crazy and all, Lady, Lestari (kepo), Lisna (nakkuu) you are my girl always take of feels 'BaPer' but i love you always gives suggestion, support, sad, anger, laugh, and all until making happy and crazy, Marianna, Meli, Nova (halohoo) you are fighting in class but you are beloved, Novel, Saadah, Rimbun, Rina, Uni, and bro Taufik thanks to all classmate, all sister in Bilingual Education Study Program 2013-2015 thanks for

support and pray. And also thanks to YBO (Ecumenical Scholarship Foundation) Persekutuan Gereja-Gereja di Indonesia (PGI) always gives support in funds for education. The writer also would like to say to everyone whose name can't mentioned one by one for your support and helping in thesis process.

Finally, the writer hopes this thesis would be useful for everyone who wants to explore more about the learning media, method, and model that suitable to learn colloidal system. The writer realize that this thesis is still far from being perfect therefore critique and suggestion are needed for further improvement of this thesis.

Medan, 2016

Writer,

**Fridayuni Simanjuntak**

**ID. 4123332005**

THE  
*Character Building*  
UNIVERSITY