

ACKNOWLEDGEMENT

My highest praise I give to God because only by His favor I can complete this research. And I would like to say my gratitude to several people for helping me in this research. First for my advisors Mr. Arianto Fahmi and Mr. Rendy Munadi that has given their best guidance during my research.

I also want to thank my family, my father Samin Sianipar, my mother Santi Siahaan, and all my brother Robet, Ronal, January for their unbelievable supports towards me. For their pray and effort.

The last I want to thank all my friends from Optical Laboratory exclusively, Hadi, Andry, Fariz, Sigit, Lanang and all my friend in Telkom University. Thank you for your all supports.

I hope my research can give positive impacts to the society and can encourage researches and researchers to develop a better system in the future.

"There's always blessing in the storm"

Rudi Sianipar