BASITHA FEBRINDA HIDAYATULAIL. 091425053003. Design Device Automation System of Blue Diode Laser in Photoinactivation Bacteria for Infection Therapy of Staphylococccus aureus Bacteria on Skin Deaseas in vitro. Thesis supervised by Dr. Suryani Dyah Astuti, M.Si. and Prof. Dr. Moh. Yasin, M.Si., Master of Biomedical Engineering Program, Sekolah Pascasarjana, Airlangga University

ABSTRACT

This research aimed to evaluate design and manufacturing of automation system of blue laser for photodinamic pathogenic bacteria with adding chlorophyl and external oxygen. Light source was blue laser diode, chlorophyl was from extract leaves of sonokembang and oxygen source was gas cylinder. pathogenic bacteria was S.aureus bacteria. Treatment groups was divided to be 6 groups i.e. sample group without treatment, sample group with adding klorofil, sample group with laser irradiation, sample group with adding oxygen, sample group with laser irradiation and adding oxygen and sample group with combination of three parameter. Result of treatment illustrated that all treatment showed decrease colony but they were not different with sample group without treatment. Result of treatment which had more decrease colony was sample group with laser irradiation for 40 s and adding chlorophyl. The explanation about treatment will be discussed in discussion.

Keywords: photodinamic, laser, chlorophyl, oxygen, S.aureus.