

ABSTRACT

Underwater Optical Wireless Communication (UOWC) is a branch of Optical Wireless Communication which use underwater source as a light conductor. In this research will be review turbulence in underwater optical wireless communication, which variation at refraction index in propagation line which caused by humidity fluctuations, salinities, and underwater temperatures who caused major changes in signal intensities at receiver. This research aims performance analysis turbulence influences in underwater optical wireless communication system with using BER and SNR parameters.

In this final project, a simulation was carried out by analyzing performance turbulence in underwater propagation media using LED as *transmitter*, then underwater propagation media are clear water, coastal, dan turbid. For distance between 5 m, 10 m, 15 m, dan 20 m. Angles formed 0° , 15° , dan 30° . Defined paramater as turbulence values, BER, and SNR.

This Final Project contributes to determine the effect of turbulence influences, BER, and SNR in each propagation distances and angles formed. Ideal turbulence value was involved in turbid media because it has the worst condition so that has a weaker performance value at 5 m propagation distance. It defined by 0,197 at 0° , 0,203 at 15° , and 0,224 at 30° . SNR values are 61,89998 dB at 0° , 61,8988 dB at 15° , and 61,89608 dB at 30° . BER values are $1,80786 \times 10^{-15}$ at 0° , $1,80887 \times 10^{-15}$ at 15° , and $1,81144 \times 10^{-15}$ at 30° .

Keyword : *UOWC, Turbulence, LED, Receiver, Transmitter, BER, SNR*