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Effect of Nutrient to *Chlorella* sp. Growth in Removing CO₂ Emission

Okik Hendriyanto Cahyonugroho^{1*}, Sonia Nilla Nindhita¹

¹Department of Environmental Engineering, University of Pembangunan Nasional Veteran Jawa Timur, Surabaya, Indonesia

Abstract : Carbon capture and storage is an alternative biological technologies to reduce carbon in the environment. *Chlorella* sp., one of autotroph microorganism or microalgae, have been used to reduce carbon due to it through carbon fixation. Aim of this study is to reveal the effect of nutrient composition to *Chlorella* sp. growth in removing CO₂ emission. This study applied various nutrient ratio of nitrate and phosphate 25:75; 75:25; 50:50; 100:0; 0:100 without and with 12 hours UV light exposure in laboratory scale. Chlorophyll-a, phosphate, nitrate, and CO₂ concentration was measured to obtain the aim of this study. Sample was taken once per two days for 9 days running. The results shown that UV light exposure caused increasing the efficiency of *Chlorella* sp to remove CO₂ emission, which is shown with increasing productivity of chlorophyll-a. With UV light exposure, nutrient ratio 50 : 50 caused increasing phosphate concentration at the lowest level, increasing chlorophyll-a production and increasing adsorbed CO₂ simultaneously into the highest level. While, nitrate concentration under UV light exposure have shown the lowest concentration at nutrient ratio 25 : 75.

Keywords : CO₂ fixation, *Chlorella* sp., nutrient, UV exposure.

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