

Abstract

Water purification technology includes four important concepts, namely deposition, filtering, absorption and adsorption. One of the adsorption materials is ZnO photocatalyst. This research was conducted to obtain a prototype design of a blue methylene purifier with a ZnO-based purifier as mixed with activated carbon. The success of this research is the prototype's ability to measure the level of turbidity of methylene blue, before and after the purification process. This test uses various comparisons of composition of ZnO and activated carbon. As much as 2500ppm of two liters of methylene blue was put into the prototype. Percentage of turbidity using the ZnO: KA ratio of 25gr: 50gr results in a turbidity reduction of 21%. The most optimal sample weight occurs at a weight of 20 grams with a percentage purification of 17%. And the best time for the biggest percentage decrease occurred at 100 seconds with a turbidity percentage of 39%. This prototype can measure the level of clarity of 0-100 NTU.

Keyword: ZnO, turbidity sensor, photocatalyst.