International Journal of ChemTech Research
CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.10 No.2, pp62-69,2017

Synthesis of TiO_2/Chitosan Photocatalyst, TiO_2/Bentoniteand Adsorption of Zeolite to Purify Unnes's Water Reservoir

Emas Agus Prastyo Wibowo*,Navela Rahma Aji,Nuni Widiarti

Department of Chemistry, Faculty of Mathematic and Natural Sciences, Semarang State University, D6 building 2nd floor, Indonesia

Abstract: The condition of water reservoir is alarming now because it looks more cloudy and dirty. Water had contaminated not only organic trashes, but also inorganic. So it can not be used for rainwater catchment as the first function by residents and the surrounding area as well UNNES to recreation .The purpose of this study is to provide solutions in an attempt restoration of water reservoir with purification process based on TiO_2/chitosan photocatalysts, TiO_2/bentonite when exposed to visible light will generate OH radical compounds that function as degrading organic pollutants and compounds superoxide. In addition to the photocatalyst, the study also did zeolite adsorption. Based on the results of SEM (Scanning Electron Microscopy) above it can be concluded that: In the SEM magnification 100X, 250X, 500x, and 1000x seen that the coated material has not been good and still lumpy and uneven. The result of the formation is characterized by using X-Ray Diffraction, Fourier Transform Infrared (FTIR). TiO_2-bentonite composite formation has not changed is still the same at wave number. Based on the results of BOD and COD was found that with the technology photocatalyst TiO_2 /chitosan, TiO_2/ bentonite and zeolite adsorption can degrade organic pollutants in the water and can reduce BOD and COD in Air embung UNNES.

Key Words : Air Embung, TiO_2/chitosan, TiO_2/bentonite, zeolite adsorption.

*****