SUMMARY

Batik waste is the most produced waste and has the potential to pollute the environment if it is not managed properly. There is a danger caused by dye waste in the textile industry which contains a lot of materials that are toxic to humans, so research is carried out to determine the manufacture of a thin layer of semiconductor material, namely titanium oxide (TiO_2) doped by nitrogen (N) with thetechnique *doctor blade* as a photocatalyst in batik waste. The purpose of this research to determine the effect of adding the percent doping of N to the band gap energy and knowing the effect of variations in visible and UV light intensity on photocatalysts in batik waste. This research was conducted by varying the percent concentration of Ndoping$_2$ by 0%, 10%, 15%, 20% and 25%. The characterization carried out in this study was using the Uv-Vis spectrophotometer,tests *X-Ray Diffraction* (XRD) and *Scanning Electron Microscope*(SEM). Based on the results of thetest *spectrophotometer* uv-vis, the band gap value of TiOobtained$_2$/N . was respectively, namely 3.11eV 3.01 eV, 2.92, 2.87 eV and 2.78 Ev. Thus, the energy band gap gets smaller with increasing doping percentage. The results of XRD data analysis show TiO_2/N in the form of *anatase* with a crystal size of 22.80 nm. The results of the SEM analysis show that TiO_2/N has a uniform morphology, which is round with particle diameters ranging from 0.16 m – 0.26 m. TiOdegradability ability$_2$/N . against batik waste found in TiO_2/N 25% with the percentage of light intensity degradation of 3000 lux in 4 hours which is 80,61%.