

**PEMBUATAN LAPISAN TIPIS TiO<sub>2</sub>-DOPED LOGAM M (M= Ni, Cu dan Zn) DENGAN METODA DIP-COATING DAN APLIKASI SIFAT KATALITIKNYA PADA PENJERNIHAN AIR RAWA GAMBUT**

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**ABSTRACT**

Preparation of TiO<sub>2</sub>-doped M (M = Ni, Zn and Cu) has been prepared on glass substrate using dip-coating technique. Titanium isopropoxide (TIP), Ni(OAct)<sub>2</sub>.4H<sub>2</sub>O, Zn(OAct)<sub>2</sub>.2H<sub>2</sub>O dan Cu(OAct)<sub>2</sub> were used as starting materials and diethanolamine (DEA) as additive in isopropanol solution. Solutions were prepared by mixing of various concentration of metals (1, 3 and 5 mol %) in 0.5 M TIP solution. Thin films were performed by immersion of glass substrate into solution by withdraw speed of 20 cm/min. Coated glass were dried at 100 – 110°C and heated at 500°C the process were repeated for several time. The product was characterized by XRD and showing TiO<sub>2</sub> layer of anatase structure. EDX analysis has shown that thin films have found of Ti and doped-metal. Their crystallized sizes were calculated by Scherrer formula shown that it obtained in various in range of 12-21 nm. According to transformation effectively of titania doped M in peat swam water shown that catalytic activity 34.4 – 53.7% for the irradiation during 24 hours.

**Keywords :** *titania, thin films, photocatalytic properties*

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