PEMANFAATAN LIGNIN DARI EKSTRAK BATANG SINGKONG (*Manihot esculenta Crantz*) SEBAGAI INHIBITOR KOROSI BAJA LUNAK DALAM MEDIUM ASAM KLORIDA

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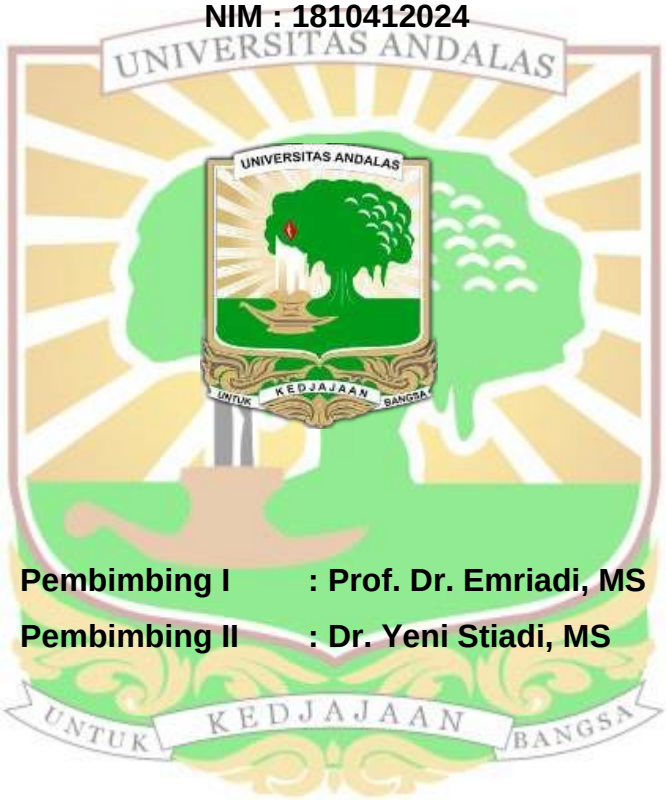

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ABSTRACT

UTILIZATION OF LIGNIN FROM CASSAVA STEMS EXTRACT (*Manihot esculenta Crantz*) AS CORROSION INHIBITOR OF MILD STEEL IN HYDROCHLORIC ACID MEDIUM

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The use of corrosion inhibitors in 1 M hydrochloric acid (HCl) medium by lignin extract from cassava stems (*Manihot esculenta Crantz*) was investigated using weight loss methods. There are 3 analysis used, namely Fourier Tansform Infrared (FTIR) analysis, UV-vis spectrophotometry, and optical microscopy analysis. The results of the weight loss method show that the higher the temperature, the higher the corrosion rate. Meanwhile, the higher the added concentration, the lower the corrosion rate. The higher the inhibition efficiency as the temperature and concentration of the inhibitor increased. The highest inhibition efficiency value was obtained at the extract concentration of 10 g/L with a temperature of 60°C by 90,163%. The adsorption of lignin extract from cassava stems followed the Langmuir adsorption isotherm pattern. The results of FTIR analysis and UV-vis spectrophotometry showed that there was an interaction between the lignin extract from cassava stems and the steel surface. Surface morphology analysis using an optical microscope showed that lignin extract from cassava stems could function as a corrosion inhibitor by forming a protective layer on the steel surface.

Keywords : corrosion inhibitor, cassava stem, lignin, weight loss