ABSTRAK

EKSTRAK DAUN PANDAN SEBAGAI INHIBITOR KOROSI BAJA St37 DALAM LARUTAN NaCl 3% DENGAN SUHU PERENDAMAN 27 DAN 40 ^{o}C

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Ekstrak daun pandan digunakan sebagai inhibitor korosi pada baja St37 direndam dalam medium karosif NaCl 3%. Untuk mengetahui pengaruh konsentrasi inhibitor dan suhu perendaman terhadap korosi baja dilakukan dengan variasi konsentrasi inhibitor yaitu 0, 1,8, 1,2, dan 1,6% dan variasi suhu yaitu 27 dan 40 ^{o}C. Pengujian laju korosi dilakukan dengan metode kehilangan berat. Peningkatan laju korosi seiring dengan meningkatnya kehilangan berat sampel. Laju korosi pada suhu perendaman 27 ^{o}C lebih rendah daripada laju korosi pada suhu perendaman 40 ^{o}C. Inhbitor ekstrak daun pandan yang paling efesien yaitu pada konsentrasi 1,2% dengan suhu perendaman 27 dan 40 ^{o}C. Sampel juga di karaktersasi XRD dan SEM-EDS. Hasil XRD menunjukkan bahwa terbentuk puncak Fe tertinggi pada sampel yang menggunakan konsentrasi inhibitor 1,2% dan puncak Fe terendah pada sampel tanpa inhibitor. Hasil karakterisasi SEM juga menunjukkan bahwa pada sampel tanpa inhibitor terlihat lebih terkorosi, dan pada sampel yang menggunakan konsentrasi inhibitor 1,2% terlihat sedikit terkorosi. Hasil ini diperkuat dengan persentase produk korosi yang ditunjukkan pada hasil EDS.

Kata kunci: Inhibitor korosi, daun pandan, baja karbon St37, NaCl

ABSTRACT

THE EXTRACT OF PANDAN LEAF AS CORROSION INHIBITOR ON St37 STEEL IN NaCl 3% WITH TREATMENT TEMPERATURE AT 27 AND 40 ^{o}C

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The extract of pandan leaf used as corrosion inhibitor of St37 steel in NaCl 3% solution. To determine the effect of inhibitor concentration and immersion temperature on steel corrosion was done with variation of inhibitor concentration there were 0, 1,8, 1,2, and 1,6% and temperature variation at 27 and 40 ^{o}C. Corrosion rate testing was done by weight loss method. Corrosion rate at 27 ^{o}C temperature was lower than corrosion rate at 40 ^{o}C. Increased corrosion rate along with increasing sample weight loss. Inhbitor pandan leaf extract were the most efficient at concentration of 1.2% with soaking temperature at 27 and 40 ^{o}C. Samples were also in the characterization of XRD and SEM-EDS. The XRD results showed that the highest Fe peak was formed in a sample using a 1.2% inhibitor concentration and the lowest Fe peak in the sample without inhibitor. The SEM characterization results also showed that in samples without inhibitors look more corroded, and in samples using 1.2% inhibitor concentrations look slightly corroded. These results were reinforced by the percentage of corrosion products shown in EDS results.

Keywords: *Corrosion inhibitor, extract of pandan leaf, St37 carbon steel, NaCl*