

Studi penggunaan campuran ekstrak andaliman (zanthoxylum acanthopodium D.C.) dan alpha-tocopherol sebagai green corrosion inhibitor pada baja api 5L dalam lingkungan HCL 1M = Study of the use of mixture of andaliman extract (zanthoxylum acanthopodium D.C) and alpha tocopherol as green corrosion inhibitor for api 5L steel in HCL 1M solution

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Abstrak

Tesis ini mempelajari mengenai pengaruh injeksi ekstrak Andaliman dan Alpha-Tocopherol sebagai green corrosion inhibitor pada baja API 5L dalam larutan HCl 1M. Dengan pengujian weight loss diperlihatkan bahwa inhibitor campuran antara ekstrak Andaliman dan Alpha-Tocopherol mampu menurunkan laju korosi dengan efisiensi 92.07 pada konsentrasi inhibitor 2 ml Andaliman 0.5 ml Alpha-Tocopherol. Dari pengujian polarisasi ditunjukkan bahwa inhibitor campuran antara ekstrak Andaliman dan Alpha-Tocopherol menggeser kurva polarisasi ke arah anodik dan katodik mixed type inhibitor, yang menunjukkan ciri utama sebagai inhibitor dari bahan organik. Pengujian dengan FTIR dan GCMS memperkuat dugaan bahwa inhibitor ekstrak Andaliman dan Alpha-Tocopherol sebagai inhibitor adsorpsi/film forming.

.....This thesis is intended to study the influences of Andaliman extract and Alpha-Tocopherol injection as green corrosion inhibitor for API 5L steel in HCl 1M solution. By weight loss analysis, it shows that mixed inhibitor from andaliman extract and Alpha-Tocopherol can reduce corrosion rate with efficiency up to 92.07 % under inhibitor injection about 2 ml Andaliman + 0.5 ml Alpha-Tocopherol. By polarization, it is shown that inhibitor shift polarisation curves for both of anodic and cathodic polarisation (mixed type inhibitor), shows that inhibitor have characteristic as inhibitor from organic material. By FTIR and GCMS analysis can be concluded that inhibitor from Andaliman and A-Tocopherol act inhibition by adsorption/film forming corrosion inhibitor.