

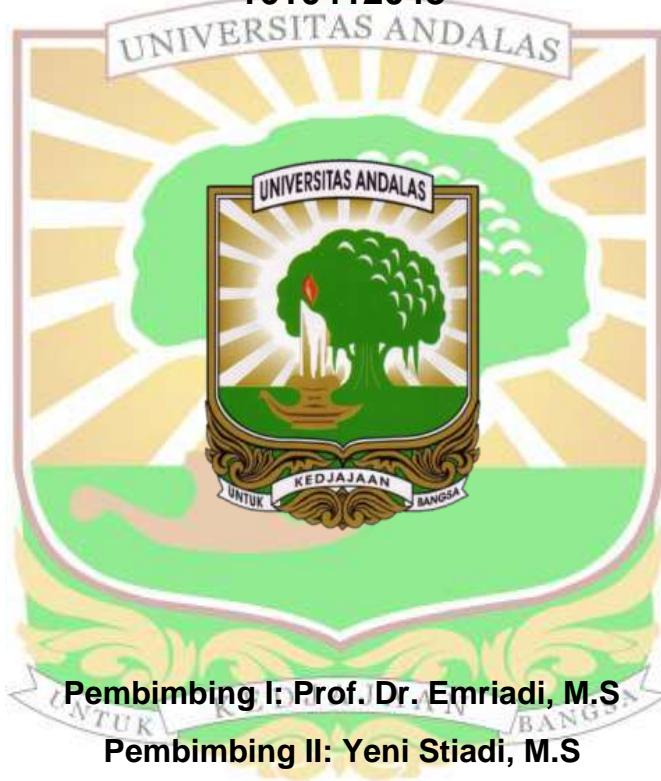
**EKSTRAK DAUN TERONG BELANDA (*Solanum betaceum*)  
SEBAGAI INHIBITOR KOROSI BAJA DALAM MEDIUM ASAM**

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**PROGRAM STUDI SARJANA**

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**FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM**

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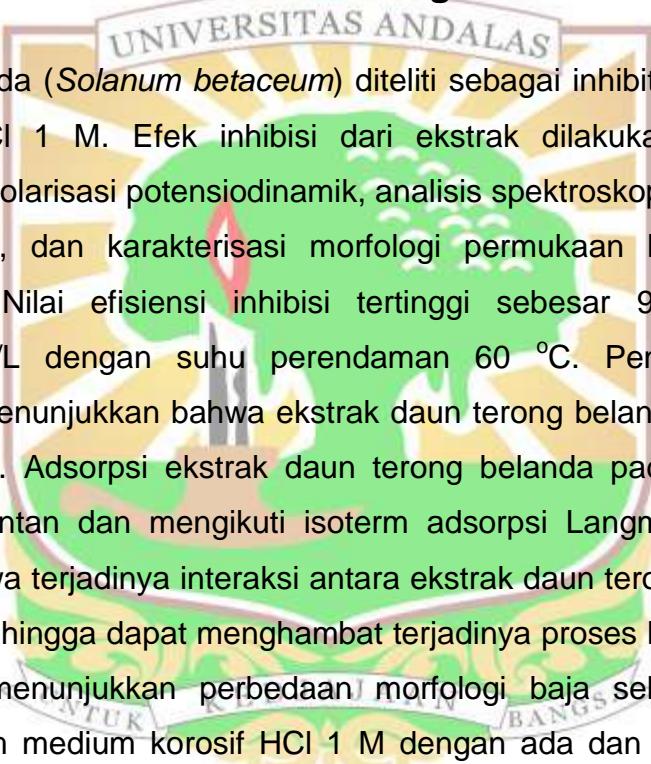
## INTISARI

# EKSTRAK DAUN TERONG BELANDA (*Solanum betaceum*) SEBAGAI INHIBITOR KOROSI BAJA DALAM MEDIUM ASAM

Oleh:

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Daun terong belanda (*Solanum betaceum*) diteliti sebagai inhibitor korosi pada baja dalam larutan HCl 1 M. Efek inhibisi dari ekstrak dilakukan dengan metode kehilangan berat, polarisasi potensiodinamik, analisis spektroskopi *Fourier Transform Infra Red* (FT-IR), dan karakterisasi morfologi permukaan baja lunak dengan mikroskop optik. Nilai efisiensi inhibisi tertinggi sebesar 94,43% yaitu pada konsentrasi 10 g/L dengan suhu perendaman 60 °C. Pengukuran polarisasi potensiodinamik menunjukkan bahwa ekstrak daun terong belanda merupakan jenis inhibitor campuran. Adsorpsi ekstrak daun terong belanda pada permukaan baja terjadi secara spontan dan mengikuti isoterm adsorpsi Langmuir. Analisis FT-IR menunjukkan bahwa terjadinya interaksi antara ekstrak daun terong belanda dengan permukaan baja sehingga dapat menghambat terjadinya proses korosi. Karakterisasi mikroskop optik menunjukkan perbedaan morfologi baja sebelum dan setelah perendaman dalam medium korosif HCl 1 M dengan ada dan tanpa penambahan ekstrak daun terong belanda.

**Kata kunci:** *Solanum betaceum*, baja lunak, inhibitor korosi, kehilangan berat, adsorpsi

## ABSTRACT

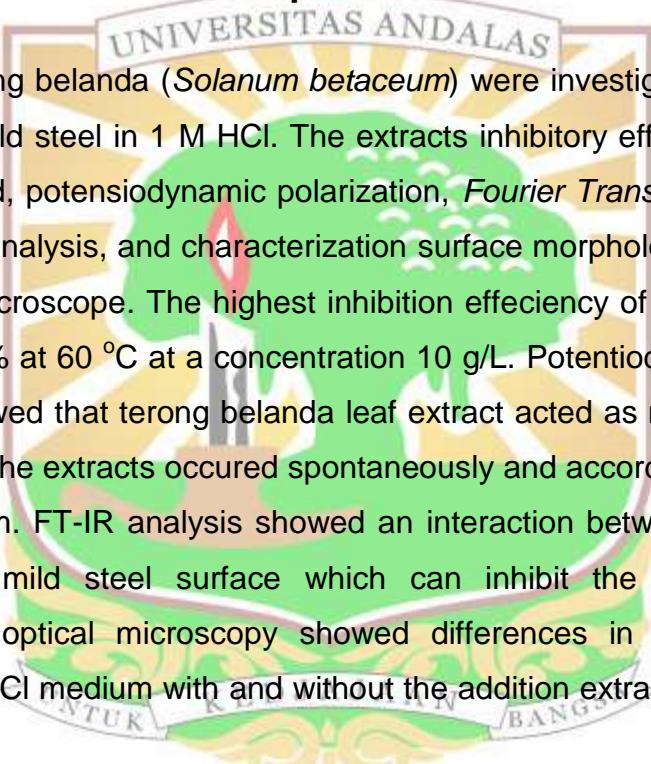
### TERONG BELANDA (*Solanum betaceum*) LEAF EXTRACT AS A CORROSION INHIBITOR OF MILD STEEL IN ACID MEDIUM

By:

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The leaves of terong belanda (*Solanum betaceum*) were investigated as a corrosion inhibitor against mild steel in 1 M HCl. The extracts inhibitory effect were studied by weight loss method, potentiodynamic polarization, Fourier Transform Infra Red (FT-IR) Spectroscopy analysis, and characterization surface morphology of the mild steel was by Optical Microscope. The highest inhibition efficiency of terong belanda leaf extract was 94,43% at 60 °C at a concentration 10 g/L. Potentiodynamic polarization measurement showed that terong belanda leaf extract acted as mixed type inhibitor. The Adsorption of the extracts occurred spontaneously and according to the Langmuir adsorption isotherm. FT-IR analysis showed an interaction between terong belanda leaf extract with mild steel surface which can inhibit the corrosion process. Characterized by optical microscopy showed differences in the steel's surface immersed in 1 M HCl medium with and without the addition extract of terong belanda leaf.

**Keywords :** *Solanum betaceum*, mild steel, corrosion inhibitor, weight loss, adsorption