

Preparation and evaluation of poly [2-amino-4(1-benzyl-1H-indol-3-yl) thiophene-3-carbonitrile] as corrosion inhibitor of C- steel in the acidic medium

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The inhibition performance of poly [2-amino-4(1-benzyl-1H-indol-3-yl) thiophene-3-carbonitrile] as a new polymer has been investigated for carbon-steel in 0.5 M H₂SO₄ and the polymer is synthesized at different molecular weight. Notably, gives high inhibition efficiency even at low concentration. The corrosion inhibition capability of the polymer is due to the adsorption of its functional groups at the C-steel surface. The conjugation resulted from the indole/thiophene ring plays an important role in the improvement of the inhibition efficiency. The structure of polymer had been approved by NMR and IR. The type of adsorption of the polymer was elucidated by different adsorption isotherms. FTIR analysis was performed to confirm the adsorption between the

polymer and C-steel surface. The morphological changes on the surface of steel were monitored by scanning electron microscopy (SEM).

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