

**The isoxazolidines: a new class of corrosion inhibitors of mild steel in  
acidic medium**

**Prof. SHAIKH ASROF ALI**

**Dept. of Chemistry , College of Science ,  
King Fahd University of Petroleum & Minerals**

<http://www.kfupm.edu.s>

**ABSTRACT**

The cycloaddn. of the cyclic nitrene-1-pyrroline-1-oxide with a variety of alkenes, Ph isocyanate and Ph isothiocyanate afforded a multitude of cycloaddn. products (isoxazolidines). One of the cycloadducts on reaction with benzyl and propargyl chloride gave quaternary ammonium salts. All these new isoxazolidines are tested for corrosion inhibition of mild steel in 1 M HCl at 60 °C by gravimetric and electrochem. methods. The inhibition efficiency of this class of compds. are detd. for the first time. All compds. have shown excellent corrosion inhibition efficiency (IE%) in acidic soln.; IE% in the range 86.7-99.5 are measured by the gravimetric method. Comparable results were obtained by the electrochem. method using Tafel plots for the inhibition efficiency of some of the selected synthesized compds.