CHAPTER-III

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The overall aim and scope of the present study was to carry out indepth investigation on the dissolution and dealloying process in Stainless steel, Copper and its alloy to identify the suitable inhibitor system for minimizing dissolution of metal. Even though Stainless steel, Copper and its alloy have been widely studied and considerable information available on the dissolution of such metal, there is still a wide gap in the understanding of the actual process, factors influencing the same, the rate determining steps etc. Lot of information will have to be generated in order to identify the most effective method of minimizing this dissolution failure and also to make a clear understanding of the exact mechanisms that could be proposed as a suitable model and be recommend as a most appropriate inhibitor system.

Bearing the aforecited aspects in mind, the scope of this present investigation thus included the following:

1) To investigate the dissolution of stainless steel in 1.0N Hydrochloric acid and Natural Sea water environment and its inhibition using green inhibitor of *Vinca rosea*.

2) To investigate the dissolution process of copper in 1.0N Hydrochloric acid and Natural sea water and its inhibition by using *cynodon dactylon* as a green inhibitors.

3) To investigate the dezincification of brass (Cu-40Zn) in 1.0N Hydrochloric acid and Natural sea water and its inhibition by leaves of green inhibitor of *Jatropha curcas*. 
4) To investigate the dissolution process of stainless steel in 1.0N Hydrochloric acid and Natural sea water and its inhibition using leaves of *Solanum trilobatum* as green inhibitor.

5) To investigate the dissolution process of copper in 1.0N Hydrochloric acid and Natural sea water environment and its inhibition using flowers of *Hibiscus rosa-sinensis* as green inhibitor.

6) To investigate the dezincification of brass (Cu-40Zn) in 1.0N Hydrochloric acid and Natural Sea water environment and inhibited by using *Arachis hypogaea* as green inhibitor.

7) To investigate the adsorption mechanism of various green inhibitors on the metal surface.