The thesis contains the study of corrosion on the following aspects.

1) The corrosion of metals in brines and bitterns of different densities at room temperature and at high temperature.

2) Study on the use of inhibitors in the above brines and bitterns for aluminium and mild steel.

3) The potential and polarization characteristics of aluminium and mild steel in 10° Be' brines and 36° Be' bittern.

4) Study on the atmospheric corrosion of metals at (a) Bhavnagar (b) Experimental Salt Farm, Bhavnagar, (c) Rajkot (d) Porbandar.

5) Determination of ammonia in the polluted atmosphere to evaluate corrosion effect with respect to ammonia.

Statement 1: The entire investigation presented in this thesis is my original contribution to the advancement of knowledge on corrosion of metals in brines, bitterns and in marine atmosphere.

The study on the corrosion rate of ferrous metals like mild steel and stainless steel and non-ferrous metals like brass, bronze, copper, monel, zinc and aluminium have been carried out, at room temperature as well as at high temperature, with and without inhibitors.

The corrosion rates of common metals in marine atmosphere and marine-cum-industrial environment have also been determined. The determination of ammonia in the polluted atmosphere and its relation with the corrosion rate has been discussed.

Suitable paints for preventive measure have been studied also.

Statement 2: The sources on which this work is based have been reviewed throughout the text and also clearly indicated in the reference.
The results and discussions which are based on the research work carried out by me, have been presented in the thesis.

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