

In oil and gas exploitation, corrosion attack exists almost in every process of the whole industry. The internal corrosion in the multi-phase fluid of the pipes is mainly electrochemical corrosion in the presence of CO₂ and H₂S. The corrosion behavior is influenced by environmental factors such as temperature, CO₂ partial pressure, acidity, degree of mineralization, the water content in crude oil, flow rate of fluids, presence of solid particles in fluid, H₂S concentration, presence of bacteria (SRB), scale on the substrate, and so on. The external corrosion in the petroleum industry is commonly atmospheric corrosion. Countless diverse coatings have been developed to alleviate atmospheric corrosion attacks, including metallic, organic, inorganic and composite coating.

The scope of this Special Issue will focus on papers including but not limited to the following topics:

- Corrosion protective and preventive coatings mechanisms
- Failure analysis on the degradation of anticorrosion coating
- Corrosion behavior and mechanism in oil and gas exploitation, processing and transportation
- Corrosion protection, including corrosion inhibitor and cathodic protection.