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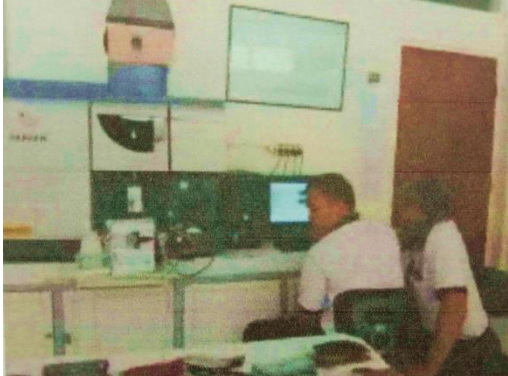
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The problem is caused by the loss of ship construction due to hull corrosion and metal degradation. On the internship opportunity that I did from 1st to 31st August 2019, I chose to research the analysis of the metal composition of the aluminum anode and zinc anode using the ICP-OES (Inductively Coupled Plasma Optical Emission Spectrometer) instrument, which was carried out at the Chemistry and Materials Laboratory (LABINKIMAT) Indonesian Navy. Steel is a metal that is widely used in marine structures that are strongly influenced by humidity and atmospheric temperature. It is easy to rust and corrodes. Therefore it is necessary to prevent it by using anodes to reduce the corrosion rate.

The method used is a comparative method where this method is a comparison between theories or the accuracy used as a standard with the results obtained. The principle in this research for corrosion control is cathodic protection, namely other metals that act as anodes and iron as cathodes. Aluminum metal is used to protect the iron from seawater corrosion. Cathode protection uses electrochemical principles, wherein the oxidation reaction in a galvanic cell is concentrated at the anode and suppresses corrosion from the cathode in the same cell.

Sample preparation was carried out by dripping 1% HCL solution on the entire surface of the anode aluminum rod and zinc anode. The sample obtained can be tested using the ICP-OES instrument by passing the sample in an electric induction to produce a beam or light from the energy of the ground-state atom. The test results on aluminum anode samples AL 50/Kim A and AL 50/Kim B on various parameters such as Cu, Fe, In, Hg, Zn, Al indicate that AL 50/Kim A and AL 50/Kim B cannot be used in materials ship because it does not meet US specifications. Military specification A-24779 (SH).

The test results for zinc anode samples were divided into zinc anode ZA 49/Kim, and ZA 49/Kim D3 on parameters such as Al, Cd, Cu, Fe, Pb, Zn showed that the samples ZA 49/Kim and ZA 49/Kim D3 did not meet the speck. US Military Specification A-8001-K and cannot be used as ship material.

No.	Photo	Explanation
1.		Aluminum and zinc sampling
2.		Addition of HCl solution
3.		Samples are stirred
4.		Samples were analyzed using ICP-OES