

## **Effect of Addition of NaNO<sub>2</sub> Inhibitor and Papaya Leaf Extract to Battery Electrolyte Solution on Electrode Corrosion Rate Control**

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### ***ABSTRACT***

*The application of corrosion inhibitors is one way to inhibit corrosion of the material that is easiest in terms of use and is economical. The objectives of this study were to determine the effect of NaNO<sub>2</sub> and papaya leaf extract mixed into a battery water solution on the voltage and current in the battery and to determine the effect of NaNO<sub>2</sub> and papaya leaf extract mixed into a battery water solution on the corrosion rate of the battery plate. In this study, 3 GS Premium KID batteries were used by comparing standard batteries without inhibitors, batteries with the addition of papaya leaf extract inhibitors and batteries with the addition of sodium nitrite inhibitors for 1 month. From the research that has been done on batteries with the addition of inhibitors of papaya leaf extract, fluctuations in current and voltage occur but have a very high current of 17.30 A and the lowest is 2.42 A and have the highest voltage of 13.06 V and the smallest voltage. of 8.48 V. While the battery with the addition of NaNO<sub>2</sub> inhibitor also fluctuated but the current and voltage produced was relatively small with the highest current of 6 A and the lowest current of 0.21 A and having the highest voltage of 12.41 V and the smallest voltage 6.27 V. The highest corrosion rate is found in the battery with the addition of sodium nitrite (NaNO<sub>2</sub>) inhibitor of 16.43 mpy with a percentage of inhibitor efficiency of -35%. While the lowest corrosion rate is a battery with a papaya leaf extract inhibitor of 4.28 mpy with an inhibitor efficiency of 67%.*

**Keywords:** *Corrosion, Inhibitor, Papaya Leaf Extract, NaNO<sub>2</sub>*