

The Effect of Adding Papaya Leaf Extract Inhibitor to Battery Electrolyte Solution on Controlling Electrode Corrosion Rate with Variations in Mixture Content

By

Ryan Bachtiar

Automotive Engineering Study Program, Engineering Department
Jember State Polytechnic

ABSTRACT

The use of corrosion inhibitors added to the battery electrolyte solution is one method that is considered quite easy and economical to inhibit the rate of corrosion in batteries. The purpose of this study was to determine the effect of adding papaya leaf extract inhibitors to the battery electrolyte solution on the corrosion rate and battery performance. In this study, batteries with the addition of papaya leaf extract to the battery electrolyte solution as a corrosion inhibitor can reduce the corrosion rate on the battery electrodes where in battery B with 5% papaya leaf inhibitor can reduce the corrosion rate by 25.8%. While battery C with 10% papaya leaf inhibitor can reduce the corrosion rate by 36.7%. However, on the other hand, the use of papaya leaf extract inhibitor in batteries has a negative effect in the form of decreased performance where in a 30-day research period, Battery A or standard battery obtained an average voltage value of 12.8V with a decrease in CCA (Cold Cranking Ampere) value of 27.2%, Battery B with the addition of 5% inhibitor obtained an average voltage value of 12.6V with a decrease in CCA of 54.5%, while battery C with the addition of 10% inhibitor can produce an average voltage of 12.1V with a decrease in CCA value of 72.7%.

Keywords: Inhibitor, Corrosion, CCA, *Cold Cranking Ampere*