ABSTRACT

ADDITIONAL STUDIES OF COMPOUND PINANG EXTRACT (*Areca catechu*, L.) AS INHIBITOR OF CALCIUM SULFATE (*CaSO₄*) With UNSEEDED METHODS EXPERIMENT

By

Silvana Maya Pratiwi

In this research, it has been conducted addition of compound inhibitor pinang extract on the calcium sulfate (*CaSO₄*) scale using unseeded experiments at various concentrations of growth solutions from 0.15; 0.20 and 0.25 M. The various concentrations of inhibitors added were around 50, 150, and 250 ppm. The results based on qualitative analysis using Optical Microscopy and Scanning Electron Microscopy (SEM) showed that size of CaSO₄ crystal without the addition of inhibitor is bigger than with the addition of inhibitor, whereas quantitative analysis using a Particle Size Analyzer (PSA) showed that the distribution of particle size of CaSO₄ crystals with the addition of inhibitor is smaller than without the addition of inhibitor which have an average size of 7.5 nm at 29.26 %, while after the addition of inhibitors have an average size of 6.5 as much as 24.06 %. Based on the percentage (%) of inhibitor ability, the optimum concentration of inhibitor in inhibitiny scale formation of CaSO₄ in the growth solution of 0.15 M is 250 ppm with the result of 24%.

*Keywords*: CaSO₄, inhibitor, pinang extract.