Abstract

Mixing rate controls system coupled with AC-motor is desired to support an efficient and stable mixing process in paper recycling plant. This project aims to design an automatic control system for mixing in paper recycling process. Mixing rate control is substantially needed to operate AC-motor producing optimal electric current and voltage. Angular speed of 6254 – 13798 Rpm and voltage range of 92.2-219.3 volt were used in mixing operation with volume fraction between paper and water 1:1.1 to 1:11.6. The designed control system present stable mixing within allowable range of mixing rate. The Settling Time ($t_s$) and Error Steady State (Ess) of this control system are 11 s and 5.75 s, respectively.

Key words: Mixing Rate Control, Paper Recycling, Settling Time and Error Steady state.