IMPLEMENTATION OF *PROGRAMMABLE LOGIC CONTROL* (PLC) CONTROL SYSTEM IN PULP SHREDDING AND PROCESSING MACHINE

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ABSTRACT

This study aims to design and implement an automatic control system for a paper shredding and pulp processing machine using a Programmable Logic Controller (PLC). The current process of converting waste paper into pulp is often conducted manually, resulting in inefficiencies and safety risks. By utilizing a PLC-based control system, the machine can operate automatically through the integration of sensors, motors, water pumps, and other components to enhance production efficiency, safety, and accuracy. The system is designed with a structured control scheme using input signals from sensors and push buttons, and output to drive shredding motors, water pumps, and mixing motors. Testing shows that the system operates in accordance with the logic programmed into the PLC, with sequential activation based on time and input conditions. The resulting prototype, enclosed in a control panel, successfully performs automated paper shredding and pulp processing as planned.

***Keywords**: PLC, paper shredding machine, paper pulp, automatic control system, sensors, motors.*