

***Arduino Based Smart Automatic Mixer Tool Design for Brown Sugar
Processing Process***

By

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ABSTRACT

Lojejer Village, Wuluhan, Jember is a center for making brown sugar. Currently, the tools used by people do not have feedback control, causing users to need more time and energy. For this reason, the author got the idea, to design an Arduino-based Smart Automatic Mixer which is capable of stirring brown sugar automatically. Smart Automatic Mixer is an electromechanical device used to stir raw materials in brown sugar processing. The microcontroller used as a basic controller is Arduino Uno. The movement of the stirrer's rotational speed is operated by an AC motor. The Smart Automatic Mixer designed by researchers is a mixer with a maximum capacity of 5 kg. This tool uses a timer feature to set the stirrer rotation time during the mixing process as needed.

The stage for obtaining research data, the brown sugar mixer tool developed was validated by experts to obtain a feasibility value for the tool developed. The results of the feasibility test analysis via questionnaire showed a feasibility level of 89.6%. In addition, the stress analysis simulation results show that the design meets the required safety standards.

Keywords: *Design, Smart Automatic Mixer, Brown Sugar*