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## Automated Small Scale Powder Dispensing System

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### ABSTRACT

Powder dosing is a widespread practice in a variety of industries, including food processing, sail manufacturing, and material handling. There is a global trend toward automating manufacturing line handling operations in order to improve product quality and save labor costs. Powders should be weighed and distributed as part of the standard manufacturing process in various industries. In these scenarios, employees must individually prepare power batches according to material requirements. The overall efficiency of manufacturing is degraded by this manual procedure. Existing powder dispenser systems have issues such as waste of material and time, as well as human-caused measurement inaccuracies. Due to their toxicity, employees should avoid direct contact with specific powders. This research proposes a screw conveyor system with a digital weight measuring technique. Automatic quantitative and speed control elements are also included in the suggested system. Screw conveyors also have an agitator that creates vibrations to ensure that the powder reaches the screw conveyor in an efficient way in less time. The powder then leaves the container and continues dispensing into it through the screw conveyor. The load cell system keeps track of data and calculates how much powder falls through the conveyer. The conveyor's speed is controlled by a PID controller. Food additives, tastes, and perfumes, flour, milk powder, protein powder, solid drinks, sugar, monosodium glutamate, pesticides, veterinary drugs, detergents, catalysts, and other powders can be measured with this equipment. The dispenser system is 85% more efficient and 90% more precise than the methods currently in use in local manufacturing facilities.

**Keywords:** *Powder, Screw conveyor, Dispenser, Weight measurement*