

Solar Powered Seed/Grains Cleaning Systems

Mrs. Anusuya Patil¹, N. Shainaj², K. S. Sowmya³, H. Sujatha⁴, Asra Fatima⁵

Assistant Professor, Electrical and Electronics Engineering¹

Students, Electrical and Electronics Engineering²⁻⁵

Rao Bahadur Y. Mahabaleswarappa Engineering College, Ballari, India

Abstract: *A solar-powered seed and grain cleaning system was developed to provide an energy-efficient alternative to conventional cleaning methods reliant on fossil fuels. The technology addresses the challenges faced by Indian farmers who lack access to grid power and primary processing equipment. A solar-powered pneumatic cleaner was designed and tested for garden pea, bottle gourd, sponge gourd, and radish seeds. It consistently achieved over 99% physical purity and more than 96% cleaning efficiency. Throughput capacities were 80 kg/h for pea, 50 kg/h for bottle gourd.*

Keywords: Solar-powered seed cleaner; Grain cleaning system; Pneumatic separation; Screen cleaning mechanism; Renewable energy application; Cleaning efficiency; Physical purity; Off-grid agricultural processing; Post-harvest technology; Sustainable farming

