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DEPARTMENT OF
SCIENCE & TECHNOLOGY
सत्यमेव जयते

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TECHNOLOGY
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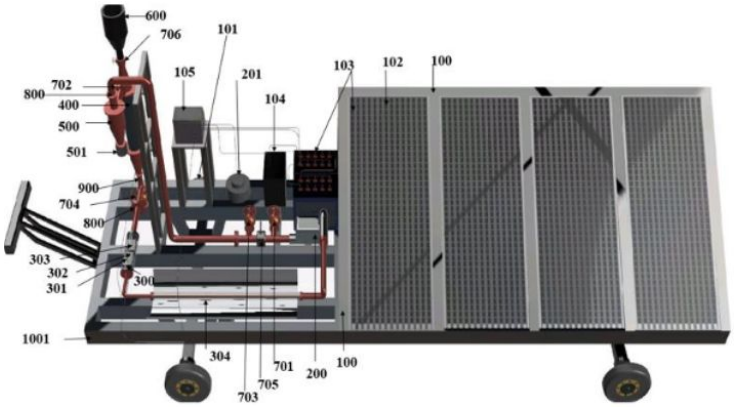
PENDING

(IN202513007774) Integrated solar photovoltaic (PV) and parabolic trough grain fluidized bed dryer



NEED

Traditional drying systems often rely on energy-intensive methods, leading to higher costs and environmental impact. A solar-powered fluidized bed dryer addresses these issues, providing a sustainable drying solution for agricultural products.

MARKET ANALYSIS

The global market for solar energy in agriculture is expected to grow at a CAGR of 11.5% from 2023 to 2033 [Source: Grand View Research, 2023]. The growing demand for energy-efficient farming technologies drives adoption.

TECHNOLOGY OVERVIEW

The solar-powered fluidized bed dryer integrates solar heating and backup air pre-heating for efficient grain drying. It uses a parabolic trough collector and a solar tracking system for optimal energy use, with precise control over temperature, air velocity, and moisture content.

Target Industries

Renewable Energy, Agriculture, Industrial Equipment. , Solar energy developers, grain processing companies, agricultural technology platforms, energy-efficient equipment manufacturers, system integrators in sustainable farming.

TECHNOLOGY KEY FEATURES

Solar energy-powered, adjustable parabolic trough collector, integrated pre-heaters, precise air velocity control, multiple nozzle shapes for improved efficiency. Reduces reliance on grid electricity and enhances drying performance.

AT A GLANCE

- SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action)

Read more here

Technology is available for licensing/ co-development.

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