



COMED KARES
INNOVATION HUB

BANASWADI CENTER

BANGALORE

www.comedkares.org

AUTOMATED GRAIN CLEANING SYSTEM USING SUCTION AND VIBRATING BED TECHNOLOGY

PROBLEM STATEMENT

Agriculture employs more than 50% of the Indian work force and contributes 17–18% to country's GDP. Last year India's net crop production was 305.43 million tones. Winnowing is one of the most challenging tasks performed by farmers to remove impurities and get useful products. Because it employs wind currents with specific rate and winds are unpredictable, it is a cause of concern. The machines currently in the market are very expensive, large in size and also consumes more power so farmers of small fields cannot own the machine.

TEAM MEMBERS



**Arundathi
Jhanavi S
Ritam Patra**

SOLUTION

The solution that we came up with works on the principle of suction and air extraction to separate the grain from impurities. The vibrating bed further helps in the separation of the grains from dust.

The seeds are sucked through the suction pipe and sent to the inlet.

Through the inlet the grains fall onto the bed, simultaneously the fan is switched on. This fan removes any dust and dirt from the falling material. The bed also vibrates which helps to separating the dust from the grains. The dust from the grains is separately collected in a bag and the grains fall out of the outlet into a collecting bag.



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SMART ZIP LINE SYSTEM FOR AUTOMATED MATERIAL HANDLING WITH ULTRASONIC SENSOR AND BLUETOOTH CONTROL

PROBLEM STATEMENT

As per a report by the National safety council, bodily reaction and overexertion was labeled as the second most leading cause of workplace related injury. And among this classification the part of the body that was most affected was the backbone region.

Since Loading and unloading of sacks a very large part of India's primary section of economy it was necessary for invention that would help automate this task and do it more efficiently Existing systems require a very large initial cost and maintenance cost since it requires a lot of moving parts.

These systems also require a skilled worker to operate since they have electronic, mechanical and software components

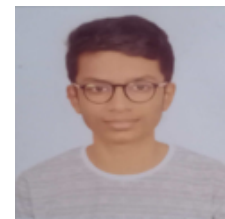
TEAM MEMBERS



Keerthi Gowda H N



Kartik Dhyani



Deekshith Gowda M

SOLUTION

After carefully evaluating all our challenges and prioritizing our problems we came up with the following solution.

We decided to build a system of Zip lines where a box housing ultrasonic sensor and stepper motor be mounted, and the zip lines will be operated by a motor driver powered pulley.

The microcontroller (in our case Arduino) will control the DC motor and record ultrasonic sensor while sending the data through a HC-05 Bluetooth module.

The system will have two modes: automatic and manual.

The automatic mode will sense the stack height using the ultrasonic sensor and unhook the sack using stepper motor. If the stack is very high, it will move to another designated position. This mode will however be needed to calibrate before using to designate the positions.

The manual drive will simply be controlled by the Bluetooth module and commands will be given for hooking, unhooking, and moving back fourth.



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ADVANCED GRAIN SEPARATION SYSTEM USING VIBRATING MESH AND AIR EXTRACTION TECHNOLOGY

PROBLEM STATEMENT

Cleaning harvested grains is crucial, eliminating unwanted materials like straw, chaff, weed seeds, and soil. This enhances grain value, improving drying, storability, reducing dockage during milling, and enhancing milling output and quality. Cleaning also prevents disease damage and boosts yields. Pre-storage cleaning is essential, preventing hot spots and moisture pockets in silos, averting rot and mold. It maximizes storage space, prevents harmful impurities, and ensures a higher return on investment. Grain cleaners are pivotal, making it prudent for producers to invest in this equipment for optimal grain quality.

TEAM MEMBERS



D Dev Tarun



Noorain Fatima N B



Tasmiya Riyaz



Sayed Shahbuddin

SOLUTION

Our solution is a user-friendly machine utilizing vibrating mesh and air extraction to separate grains from impurities, distinguishing lighter and heavier grains. Impurities, such as sticks, broken kernels, and husks, are effectively removed. The model includes a vibrating mesh, funnel, vibrating bed, air extraction fan, and two containers for collecting light and heavy grains. The vibrating mesh, activated by motors, separates dust and finer impurities. The fan, switched on during the process, eliminates additional dust and dirt, while the vibrating bed further distinguishes grains based on their specific densities or mass.



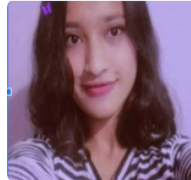
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SANITARY PAD INCINERATOR

PROBLEM STATEMENT

The non-polluting, eco-friendly sanitary pad pot incinerator is an innovative solution designed to address the environmental challenges posed by the disposal of sanitary pads. Traditional methods of disposing of used sanitary pads, such as landfilling, can have detrimental impacts on the environment due to the non-biodegradable nature of these products. However, the introduction of the sanitary pad pot incinerator offers a sustainable alternative that minimises environmental harm.

TEAM MEMBERS



Shruthi T R



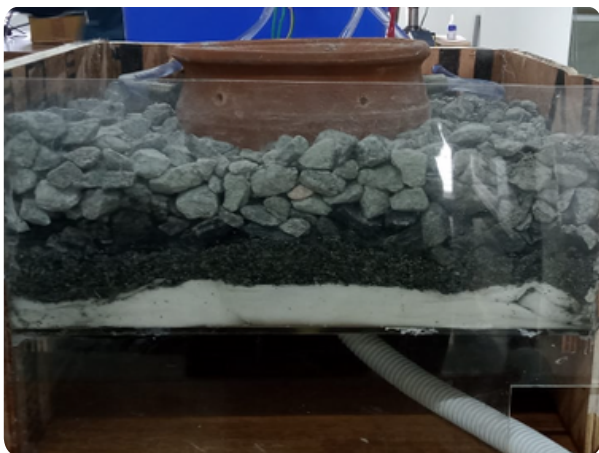
Sanjana Rawal R



Priyanka Sahani

SOLUTION

The incinerator is an effective solution for an eco-friendly method for a proper disposal of sanitary pads. It is pot shaped that ensures the complete combustion of the sanitary pad. It is equipped with an arduino to ensure a safer disposal of the pad without contact. It is manufactured from sustainable materials, making it not only environmentally friendly but also cost-effective and scalable for widespread adoption in various communities, institutions, and public facilities.



AUTOMATIC PILL DISPENSER

PROBLEM STATEMENT

Current pill dispensers lack automation and effective reminders, leading to medication management inefficiencies, missed doses, and inconvenient refill processes. Developing an advanced, user-friendly pill dispenser is crucial to enhance medication adherence and improve overall healthcare outcomes.

TEAM MEMBERS



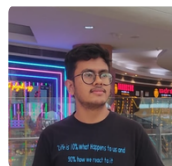
AMINA HIBA SHAIKH



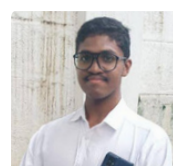
DIVYA DHARSHINI A N



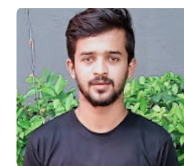
CHANDRA HASA REDDY



ABIRAMA ARJUN NVS



THOMAS K NEBU



VINAY S N

SOLUTION

Developing a smart pill dispenser that addresses issues such as complex dosing schedules, and the impact of forgetfulness in individuals with chronic conditions.

Initially a person need to store the tablets in 2 compartments by separating Individually .When we are turning on the circuit ,The Led will glow and timer will start from 10 seconds. Initially the motor will rotate 90 degrees. Again the timer in OLED start from 10 seconds. After 10 seconds the one motor will rotate in 90 degrees and collect tablet and by second turn it will drop to hand immediately with delay of 1 second. Based on same principal the second motor will work inversely to the first motor. It will rotate in 180 degrees and collect tablet in initial round and with in delay of 1 second the motor will drop tablet to hand.



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NEW BORN BABY TEMPERATURE MONITORING INCUBATOR

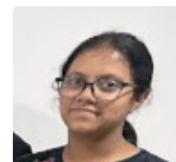
PROBLEM STATEMENT

Accurate temperature monitoring of neonates is vital due to the significant morbidities and mortality associated with neonatal hypothermia there is a lack of consensus regarding which of the currently available thermometers is most suitable for use in neonates.

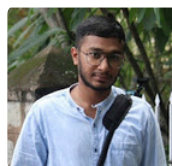
TEAM MEMBERS



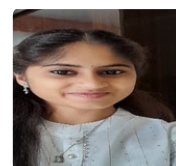
K.S Hemanth



G Muharda Krishna



Mohammed Yaqoob Jalal



B Gouthami

SOLUTION

The incubator incorporates temperature regulation for the baby and a humidity sensor to detect leakages. Through a connected mobile application, parents can easily monitor their baby's well-being and receive emergency updates, ensuring optimal conditions within the incubator.



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MODIFIED WHEELCHAIR FOR EASY TRANSFER FROM BED

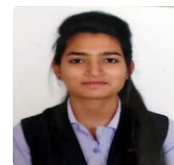
PROBLEM STATEMENT

The main objective is to improve the existing wheelchair in terms of daily usage. It focuses on the use of simulation in analysing the critical parts of the wheelchair model and evaluates it in terms of daily usage. Evaluate the critical part of stress on the wheelchair which consists of seating support and wheel caster.

TEAM MEMBERS



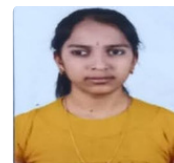
Hruday Shetty



Shifa Shaikh



Nanda Kumar



Harshitha SR

SOLUTION

Automated Wheelchair which can be converted into a bed of 180 degree as well as the lifting mechanism of the seat which can be operated in the pulley system to adjust the height of the chair in accordance with the bed. The patients can be lifted from the wheelchair to the bed



HUMAN-FOLLOWING LUGGAGE-CARRYER BOT

PROBLEM STATEMENT

How might we help General public to transport liggage easily from conventional way of dragging luggagees to making it a hands free luggage follower so as to make it easy to transport the luggage despite Dragging it towards you

TEAM MEMBERS



Nelson Eugene D



Uday Das



Dhriti Raj



Dhanush S

SOLUTION

The actual implementation may involve more complex algorithms for obstacle avoidance and person following, depending on the sensors used . If a person is detected in front of the robot, it adjusts its movement to follow the person



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ADDITIVE MAINTENANCE OF SOLAR PANEL WITH SUNFLOWER TRACKING MECHANISM

PROBLEM STATEMENT

The efficiency of solar panels is significantly compromised by dust accumulation, leading to reduced energy output. There is a critical need for an innovative solution integrating an automatic washing mechanism, possibly inspired by sunflower tracking, to address dust buildup on solar panels, ensuring consistent and maximum energy generation while minimising maintenance efforts.

TEAM MEMBERS



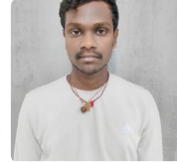
BHANUSHREE M



Aditi Govindappananavar



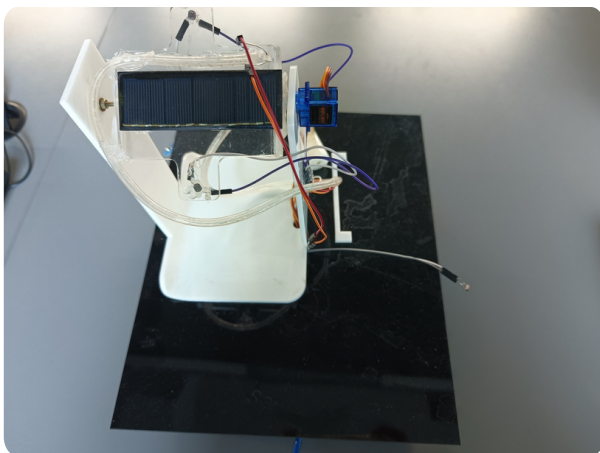
LOKESH DS



R Vishal

SOLUTION

Primary objective is to digitise and alleviate the challenges faced by farmers nationwide, introducing app-based solar tracking for enhanced efficiency, coupled with SMS-based weather alerts as a core feature. Automation and customizable weather modes will serve as additional components, empowering agriculturists with advanced technological solutions.



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RAIN WATER HARVESTING

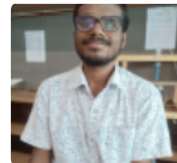
PROBLEM STATEMENT

How might we help citizens, Government, Industries to Reduce Water Scarcity, healthy life from Ancient Method to Implementing efficient technology so as to People / Citizens get healthy life despite of Save water

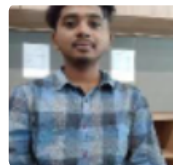
TEAM MEMBERS



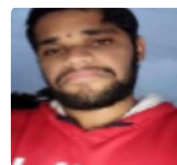
Arpita B



Vinu Prathap.A



Varun.V



Sandeep T

SOLUTION

Idea is to Build Smart Rain Water Harvesting For Multipurpose such as Enhances water storage Ultra filtration, Our idea focuses on separating sewage and rain water separately. . Making use of RO filtration . Using ultra-filtration And To produce Bio Gas



PROBLEM STATEMENT

Humidifiers are commonly used to humidify a single room, and whole-house or furnace humidifiers, which connect to a home's HVAC system to provide humidity to the entire house. Humidifiers are commonly used to humidify a single room, and whole-house or furnace humidifiers, which connect to a home's HVAC system to provide humidity to the entire house.

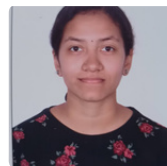
TEAM MEMBERS



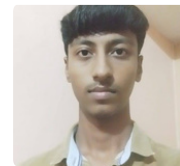
Syeda Saniya



Krithik S



G Muktha Krishna



Mithun

SOLUTION

The air purifier features layers of bamboo charcoal and moss, complemented by a display showcasing real-time gas composition. Equipped with a smoke sensor for immediate detection and an artificial light system fostering moss growth, this device offers a comprehensive solution for both air purification and environmental monitoring.

