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E-NNOVATE Virtual Innovation Fair

SREENIDHI HUB

AN INNOVATION AND ENTREPRENEURSHIP DEVELOPMENT CENTER

APATBANDHAVA

-THE ASH LEAKAGE DETECTOR

THE HIGHFLYERS

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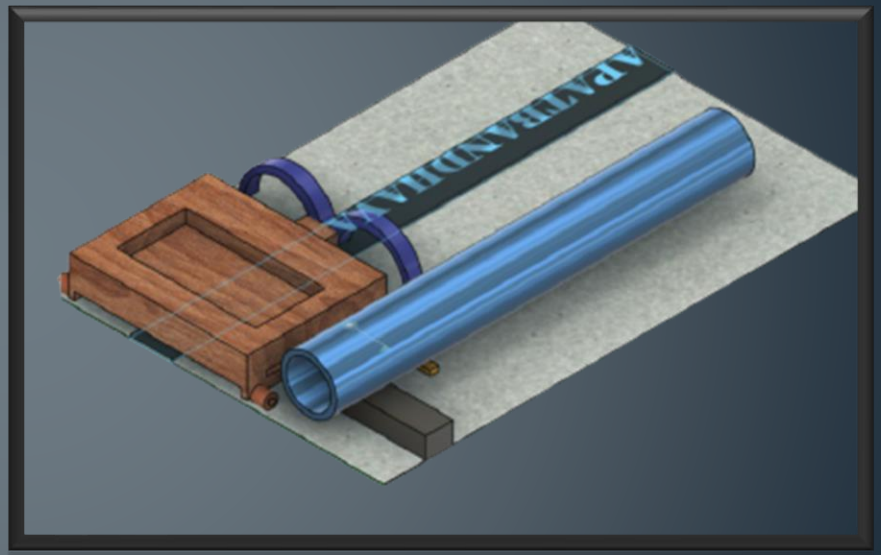
CONTENTS

- INVENTION
- WHY THIS INVENTION ?
- ACCIDENTS THAT OCCURED
- APATBANDHAVA
- CIRCUIT DIAGRAM
- SIMULATION OUTPUT
- CAD DESIGN

INVENTION

- The invention we are coming up with is a APATBANDHAVA-The Ash Leakage Detector.
- The main aim of the cobot is to ensure safer industrial vicinity.
- This cobot(collaborative robot) helps in detection of ash leakages.

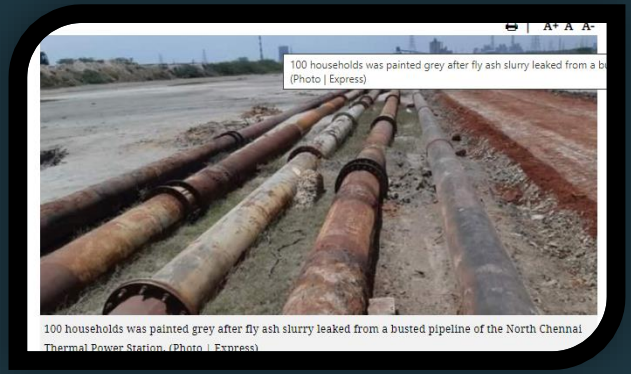


WHY THIS INVENTION?

- Ash leakage is one of the burning issues which is highly neglected by people due to its poor popularity.
- Industries from all over the world has faced ash leakage causing hundreds of people dying and surroundings being damaged due to the toxins that break into air, water, and soil.
- These toxins when inhaled get lodged in the lungs triggering lung diseases, respiratory distress, and heart damage. Not many people are aware of it and is generally ignored.
- This gives us more of a reason to seriously look into this matter to avoid further destruction.

ACCIDENTS THAT OCCURED

- There have been 76 major fly ash accidents across India in the last 10 years and around 17 incidents last year alone.
- -These 17 were reported from Nagpur, Madhya Pradesh, Odisha, Chhattisgarh, Jharkhand, West Bengal and Maharashtra.
- Regions such as Chhattisgarh's Korba, and north -Chennai's Seppakkam and Ennore, witnessed multiple accidents related to fly ash mismanagement.
- -During all these occurrences, death was inevitable alongside some serious damage to the vicinity.
- -Hundreds of workers who cleaned up the fly ash spill are now sick and dying. One reason for increase in recent years could be on account wear and tear of Old pipelines



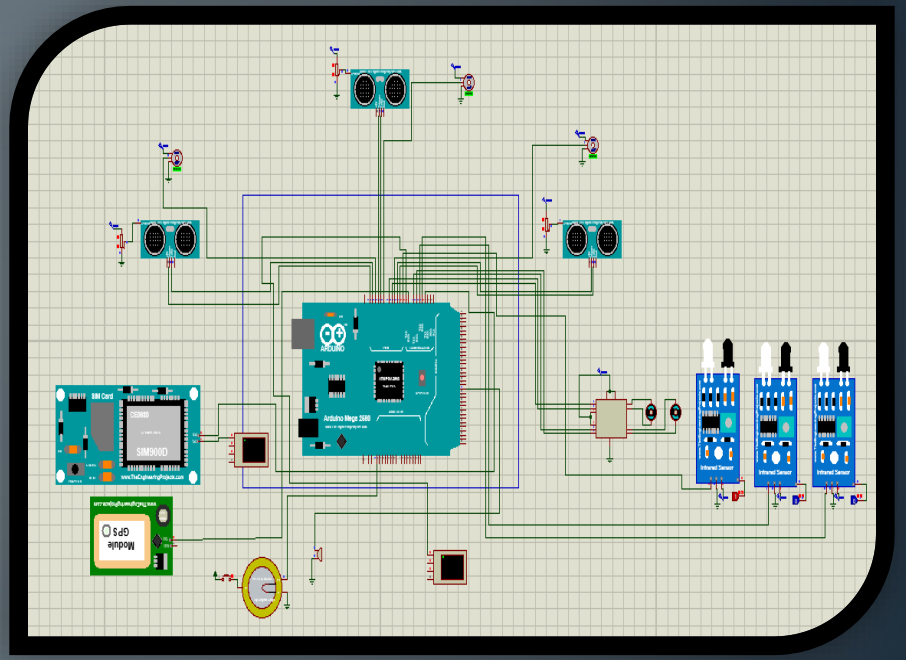
APATBANDHAVA

- This cobot ensures that there are no leakages left undetected in the industries.
- This cobot uses line follower mechanism for its movement.
- The bot is installed with piezoelectric sensors that senses ash particles that would lead to a leakage.
- It is equipped with a buzzer that alerts the workmen when there's an accident additionally giving the exact location.
- It is equipped with ultrasonic sensors and servo motors which helps the bot to overcome obstacles by lifting its piezo wings.

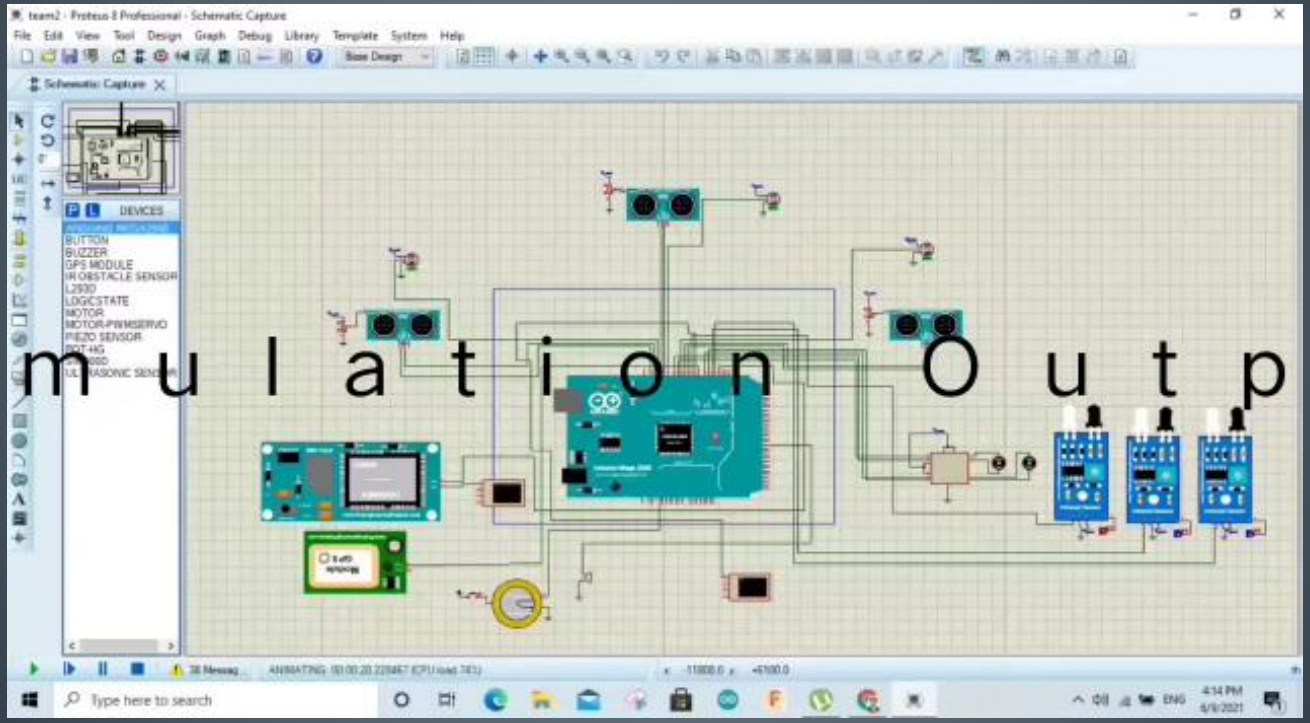
CIRCUIT DIAGRAM

- This circuit consists of the following components.

- ARDUINO MEGA
- ULTRASONIC SENSORS
- BATTERY
- BUZZER
- CONNECTING WIRES
- GSM MODULE
- GPS MODULE
- SERVO MOTORS
- IR SENSORS
- PIEZO ELECTRIC SENSORS
- L298N MOTORDRIVER

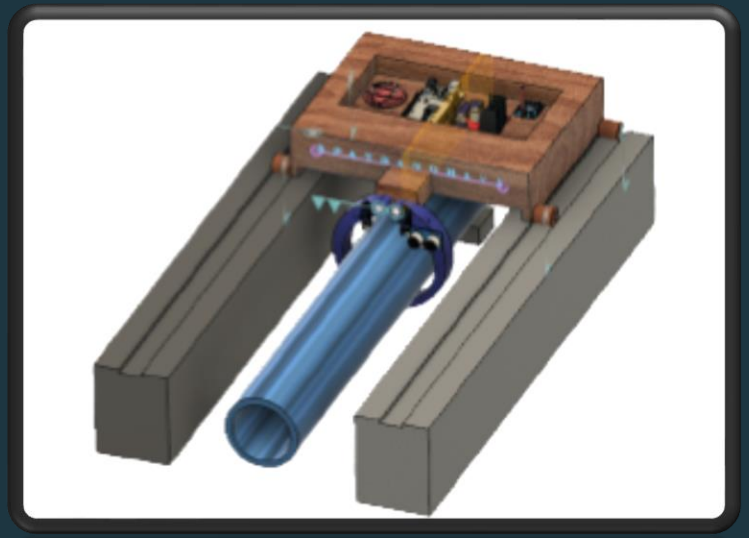


SIMULATION OUTPUT



CAD MODEL

- Here is the CAD model of APATBANDHAVA.



CAPITAL REQUIRED

- The basic price of our product is 6300 INR.
- This price includes the installation charges.
- Our target customers can be reached through B2B.
- B2B – power plants.

THE HIGHFLYERS

-Life Saving Solutions