

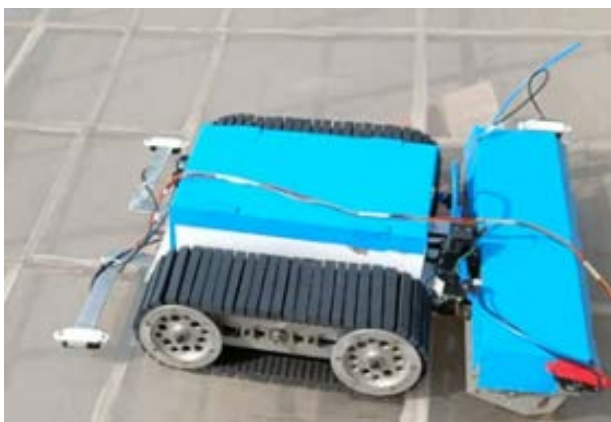
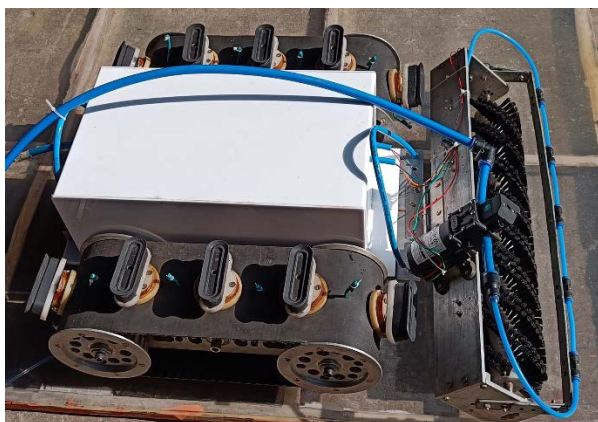
GLASS FAÇADE CUM CANOPY CLEANING ROBOT

Technology in Brief

Glass façade cleaning robot (GFCR) can be a more effective solution to avoid manual cleaning in a very high-risk work environment of multi-story buildings. The glass façade cleaning robot technology encompasses mechanisms for locomotion and adhesion, and control strategies aimed at optimizing coverage path planning for cleaning of glass façade. The robot consists of two components. One of the main components is the GFCR with roller brush cleaning and its locomotion and adhesion mechanisms, and the other component is a three-degrees of freedom (DOF) rooftop-assisted device. The purpose of having the roof-assisted device is to safeguard the GFCR in case of any pneumatic vacuum supply and locomotion failures and also to help the GFCR to position from one glass façade to others very easily. This robot exhibits 10 kg payload capacity and achieves a peak locomotion speed of 5 meters per minute. In rigorous testing, the GFCR has demonstrated its efficacy in cleaning with a water consumption rate of up to 5 liters per minute, resulting in cleaning efficiency of approximately 150 square meters per hour.

Salient Features/Advantages

- Compact size, Ease to transport and install
- Robot Locomotion Speed: 5.0 mtr./min.
- Payload Capacity: 10 kg
- Cleaning Efficiency: 150 square mtr./hour



End Product(s)	Developed prototype of the robot and conducted successful working trials
License/Commercialization	NA
TRL	6
Environmental Impact	Environment friendly and User safety.
Setup - Equipment required	General fabrication workshop facility.