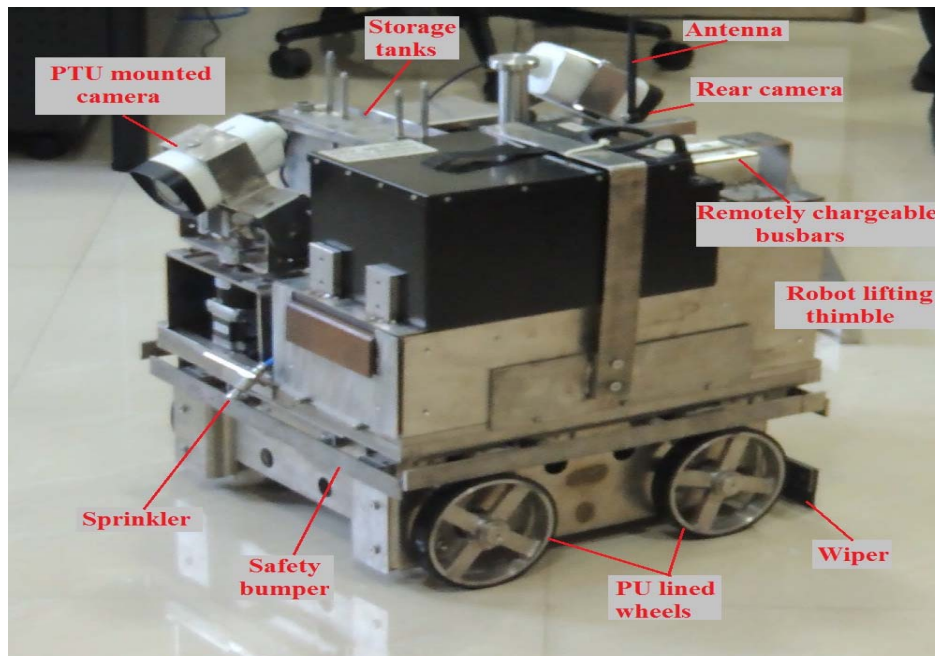


Decontamination Mobile Robot for WIP

Various activities carried out towards treatment and management of radioactive waste lead to spillage and accumulation of radioactive contaminants on floor, equipments and walls inside the cell. In order to stop the spreading of contamination and limit ambient dose inside the cell, it is necessary to periodically carry out cell decontamination. A mobile robot (500x500x500mm) has been designed and developed for performing floor decontamination of radioactive areas. The robot primarily consists of four sub-systems which include locomotion sub-system, cleaning sub-system, viewing sub-system and remote command/control sub-system. Robot locomotion is based on four wheeled differential drive using skid steering approach. The onboard cleaning system includes cleansing liquid spraying arrangement and retractable scrubber and wiper heads. The viewing sub-system comprises front camera mounted on a Pan-tilt unit and a fixed rear camera to provide visual feedback to the operator at cold side. Other important features provided in the robot include automatic remote engagement/disengagement of scrubber and wiper in each campaign, remote liquid refilling of onboard storage containers and remote charging facility. The onboard control electronics are shielded inside a thick lead enclosure box to enhance their operating life. The front end software along with joystick provides a unified interface to remotely operate the robot by wireless command updates and status feedback to/from the onboard controller. The system has been deployed inside a mock cell of WIP and cleaning trials have been carried out successfully.



Decontamination Mobile robot