Decontamination Mobile Robot

A compact tele-operated mobile robot has been indigenously designed and developed to perform floor decontamination of radioactive areas. The robot is equipped with specialized features to make it compatible for operating in hazardous environments. The major sub-systems of the robot 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. For floor cleaning, the robot is equipped with two independent sprinkler heads, retractable scrubber and wiper heads. A front camera mounted on a pan-tilt pedestal and a fixed rear camera is used to provide visual feedback to assist the operator for remotely navigating the robot. The robot is equipped with inbuilt automated mechanisms and functionalities to enable remote maintenance such as remote engagement/disengagement of scrubber and wiper, remote liquid refilling of onboard storage containers and remote charging operations. 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.