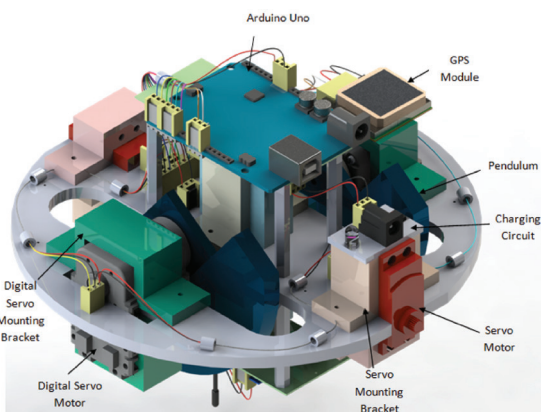
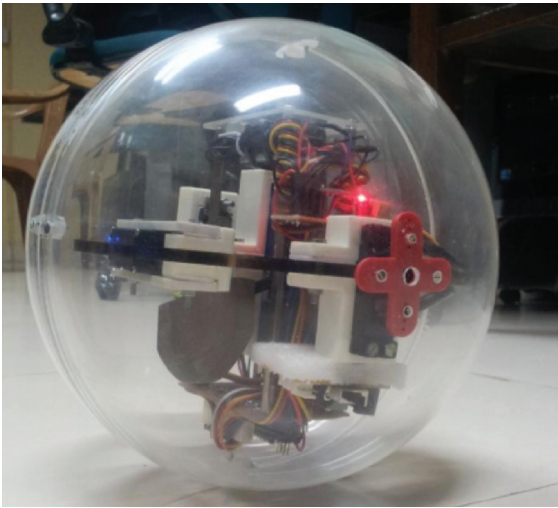


## Design of gearless spherical robot



- The robot, which is completely covered, can maneuver in any direction
- Design is based on pendulum and yoke assembly
- Entire electronics is within a spherical shell
- The gearless design supports jerky movements so that the application is not limited to a planar environment
- Each part inside the shell moves when the robot moves. Major challenges such as placement of electronic and mechanical components for weight balance and non-winding of wire during the movement, were addressed
- Two-pendulum design is developed to avoid gears in the assembly
- Controller using position measurements is designed for autonomous navigation of the spherical robot from a given source and target position using position measurements
- Outdoor experiments using GPS measurements are performed using this controller.