

## **Housekeeping Robot: From Concept To Design**

### **Abstract**

Service robots are emerging from the laboratory as commercial products. Floor cleaning, material transporting in radioactive and other hostile environments and security robots are some of the facets of a service robot. This paper focuses on one such service robot for housekeeping purposes, the concept and a design aspect of the developed robot is presented. The design philosophy that emphasizes compromise and practicality in design is being explained. This philosophy is used in the design and integration of a housekeeping robot system and sensor systems to provide new functionality for the user. The robot navigation problem is solved through a hybrid sensor system. The developed robot system comprises of a mobile platform, hybrid sensor system and a gripper system. This paper also discusses the design concepts and realization of a housekeeping robot to perform picking and placing tasks.