Chapter 1

Introduction

The cleaning of floor spaces and general sanitation has been given a lot of impetus in recent years. It is common knowledge that sanitation is absolutely vital to maintain hygiene, which leads to better overall health, and also to improve the aesthetics and visual/olfactory/tactile appeal of a particular space.

Sanitation is of paramount importance in the healthcare and food industries. However, it is also important to maintain a sanitary or otherwise clean environment in places where humans work and live – such as manufacturing industries, office spaces and homes.

If a particular 4-walled room was to be considered, there would be 6 surfaces on the inside – the 4 walls, ceiling and floor. It is common experience that the floor is generally the dirtiest surface when compared to the other 5 surfaces. It is for this reason that extensive efforts are taken to maintain floors clean. In places where sanitation of floor spaces is done, teams of people are employed to clean floor spaces on a regular basis.

The cleaning process would consist of the following 4 basic steps, which are to be done consecutively in the order given:

1. Vacuuming
2. Wetting
3. Scrubbing
4. Drying

The employment of people to perform the cleaning task entails certain management problems which are unavoidable. The problems include, but ae not limited to, absenteeism, strikes, demands of higher payment, unprofessionalism, unsatisfactory work, fixed timings, etc.

It is for this reason that a new system of cleaning floor spaces is proposed – one that eliminates the necessity for humans to be involved in the cleaning process. A new robotic device, called an ‘Autonomous Sanitation Module’ is proposed as the solution to alleviate the disadvantages associated with employing people to do the cleaning process. Not only can the proposed device perform the cleaning operation efficiently, it does it better and at an overall cheaper cost.