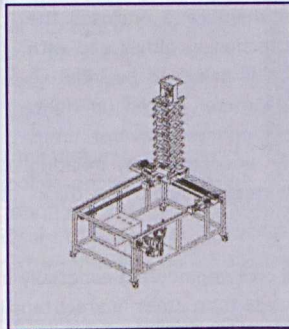# Painting Robot for Houses and Buildings
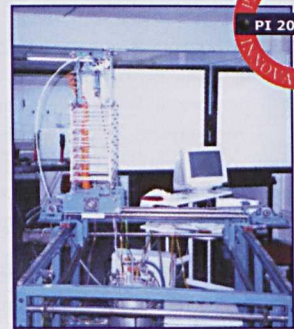
Award**Winner**

Nowadays robots are widely used in many applications such as in factories, the mining industries, the automobile industry etc. Currently, the application of robot is still not widely implemented in construction industry. In construction industry, robots are designed to increase speed and improve the accuracy of construction field operations. It can also be used to do hazardous and dangerous job in construction. For example, house painting is done manually. This process can be simplified using a special dedicated robot. It is very difficult and troublesome for human to work in an upright position especially for painting, cleaning and drilling or screwing in the ceiling for a long time. Painting in an upright position is also very dangerous for the eyes. To overcome this difficulty, a painter robot system has been developed at UPM.

The painter robot comprising a vertically extendible frame structure adapted to receive an end effector operational tool such as spray gun mounted onto a support frame assembly. The vertically extendible frame structure can move to and fro along a longitudinal X-axis of the support frame assembly. It can also move to and fro along a longitudinal Y-axis of the support frame assembly. An electronic processor control is used to receive and process electronic signals of the position of the end effector operational tool and other components of the

PI 20024902

3D Schematic diagram of the painting robot

Robot capable of painting houses & buildings automatically

painter robot and to activate the movements of the extendible frame structure to a desired spatial position as well as the painting. It can improve painting quality, reduce labour and operation costs and reduce accident rate. It needs less maintenance and it is easy to operate.

It is patent-pending under Malaysian Patent registration number PI 20024902.

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