

## Fabrication of the Solar Air Coller

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**Abstract:** - Building and construction is one of the major industries around the world. In this fast moving life construction industry is also growing rapidly. But the labours in the construction industry are not sufficient. This insufficient labour's in the construction industry is because of the difficulty in the work. In construction industry, during the work in tall buildings or in the sites where there is more risky situation like interior area in the city. There are some other reasons for the insufficient labour which may be because of the improvement the education level which cause the people to think that these types of work is not as prestigious as the other jobs.

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### I. Introduction :

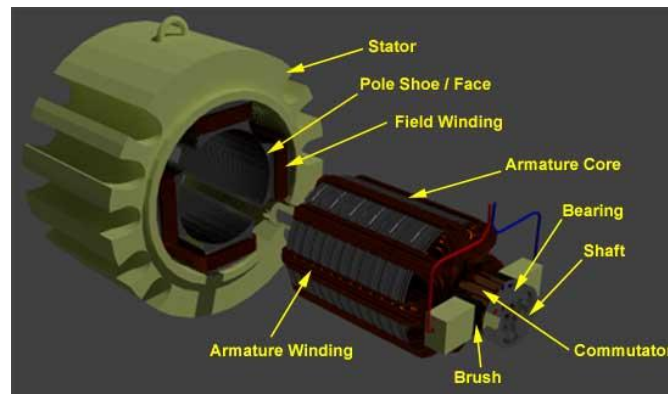
This automatic wall painting robot is not designed using complicated components. This robot is simple and portable. The robot is designed using few steels, conveyor shaft, roller and a controller unit to control the entire operation of the robot. This robot is compact because of high speed and pressure capabilities they have. They also have a very small weight to power output ratio and predictable performance i.e. losses are minimum due to less number of moving parts and so gives expected performance.

### II. Components Used:

#### DC Motor



#### DC Shunt Motor:



The shunt winding as shown in fig. is made of small-gauge wire with many turns on the coil. Since the wire is so small, the coil can have thousands of turns and still fit in the slots. The small-gauge wire cannot handle as much current as the heavy-gauge wire in the series field, but since this coil has many more turns of wire, it can still produce a very strong magnetic field.

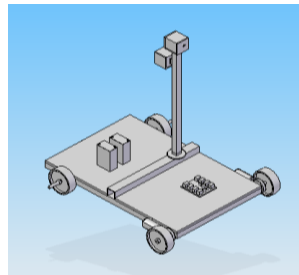
#### WORKING PRINCIPLE:

Power screw is connected to the nut through this rotational motion is converted to linear motion; one lead screw is for vertical movement which carries whole painting arm equipment. Another lead screw is for horizontal movement of arm which is connected with roller. For painting wall machine will move to the wall surface to a suitable distance so that roller touches the wall surface simultaneously pump will supply paint from

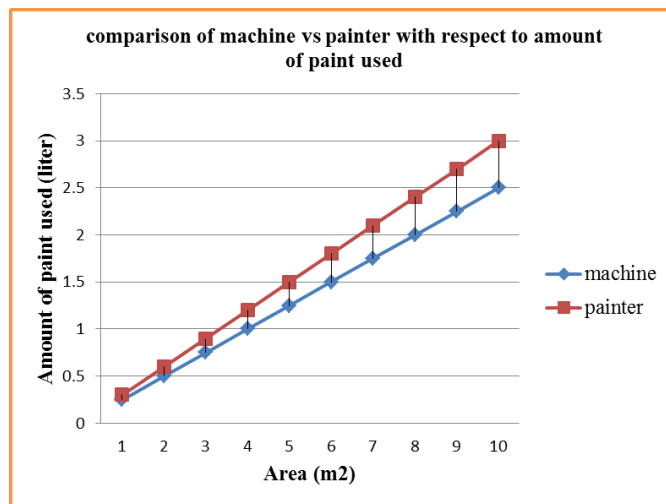
paint tank. Wall surface will painted by moving vertical lead screw up and down, after one column getting painted horizontal arm will move and same process will repeat for remaining surfaces.

**DESIGN AND FABRICATION**

Fig.shows assembles of base frame, plate, 4 wheels and vertical support with gear housing. Two motors are used to drive the machine which are connected with the front wheels of the machine. Vertical stand is welded to the base frame.



**III. Result And Discussion:**



This means that the Automatic painting machine used 0.05L or 16.66% less paint compared with the Painter to paint a square meter of area. The results showed that the Automatic painting machine was better than the manually painter in terms of the amount of paint used to paint the same area. This proved that the Automatic painting machine worked as good as or even better than the painter. It might seem that it was only a small saving of paint. But taking a bigger amount of area to paint, the Automatic painting machine would save you a lot of paint and money.

**IV. Conclusion:**

By using the machine in the construction, it is for sure will save a lot amount of money in buying paint, paying painters salary and also reimbursing painters medical expenses caused by injuries. The painting machine is the future of painting in the construction business as it is proven to be more efficient compared to the manual paint roller.

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