

FABRICATION OF MODIFIED HOVER BOARD

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ABSTRACT

Our aim is to reduce pollution from vehicles and make transportation pollution free. We plan to do this by making all new means of travel. This invention will reduce the amount of vehicles sold and the amount of fuel used and put into the air. We plan to create the world's first environmentally safe hover board. The hover board is the first transportation product to stand, balance, and move in the same way. It is a truly 21st-century idea. The aim of this research is to study the theory behind balancing hover board vehicles. An experimental model has been designed and implemented through this study. The model has been identified in order to serve as an educational experimental platform for hover board.

I. INTRODUCTION

A hover board resembles personal transportation like a skate board but has magnetic induction usage instead of the mainstream wheel usage alone. The board levitates to provide the transport. A hover board is typically known as a self-balancing two-wheel board or hover board which works on a rechargeable battery and has a platform above its wheels where the rider stands. The hover board has different techniques that can be mastered and must be known enjoy the ride safely. There are more than dozens of brands and companies that offer their hover boards with attractive features, designs and enhancements. These portable hover boards provide great pleasurable experiences. They are made of several components that help it to work. The technical parts include the motors in front of wheels and battery placed in it. Switches are also present in the handle. The hover board is charged with a provided battery and charging port along with a power switch. Future technology of this hover board will be powered by scientifically enhanced helium. We will invent a type of helium that is stronger and lifts more weight. We plan to compress the helium into small packets. When the helium is compressed, it does not float. When you put the packet into the helium tank, it is decompressed and becomes a gas. When you want the hover board to rise, it releases streams of helium into the hover chamber, which levitates the hover board. When you want to descend, the helium is slowly recompressed and stored in the helium tank for reuse.

II. MATERIALS

A 12volt DC motor with 300rpm, 250watt, torque upto 90kgcm. The size of the tyre is 11inches. Two small wheels are attached at front and rear portion of foot board for convenient balancing and turning. Switches and battery are used.

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III. WORKING PRINCIPLE

Cut out the frame from 2 thin pieces of plywood and also cut out the frame from the thicker piece of plywood. You have 3 sheets of plywood all the same size. The shape of the frame does not matter and only needs to be wide enough to fit your feet and a battery. Next cut a square out of 1 of the thinner pieces of plywood. The square should be the size of the battery. Now cut the piece of 2" x 2" wood to the same length that the frame is wide. Drill holes slightly bigger than the wheel's axles into each end. You can then proceed to fill each end with epoxy and mix the epoxy for 1 minute while it is inside of the hole. Use a generous amount of epoxy and do not use the dollar store stuff. This will give the wood strength.

Attach the wheel and axle assembly onto the thin piece of plywood with the square cut out of it. Cut 2 more pieces on 2x2 wood as shown and attach them using wood glue and screws. Next you will build the bottom part which will hold the battery. Using the same 2x2 pieces of wood and another one of the thin pieces of plywood, build the structure shown. You can then attach the bottom part of the frame to the middle frame (the one with the wheel assembly). In the picture you can see I removed the wheels for this to make it easier to work with. You can also disregard the driving assembly visible there, that was all removed later. Once you epoxy the wheels in place, you should not remove the wheels like I did. You may find it beneficial to leave epoxying the wheels into place until after the frame is complete and dry. I then attached a 2x2 piece off the back to hold a rotating wheel. This back wheel will give us balance. The motors are then held in and attached with duct tape. I tried glue and epoxy but neither held it reliably. Make sure that when you attach the motors, the wheel on the end of the motors will line up with the hover board's wheels. After it is completely wired, the top of the hover board (the thicker piece of plywood) can be screwed in. Only screws should be used and no glue.

IV. CONCLUSIONS

Thus the fabrication of modified hover board personal transporter is aimed at providing a zero pollution environment to a considerable distance at lower cost. To overcome toppling wheels are attached to the base thereby increasing stability. In future solar panels can also be installed to recharge the battery, thereby making the power source renewable.

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