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Review Paper on Modification of Existing Treadmill cycle

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***Abstract:** This Paper deals with the Modification of treadmill cycle. It's based in Re-design of previously existing treadmill cycle. It's designed to provide a safe, convenient, and easily handling treadmill cycle which fulfils the requirement of users and love to ride on it by users. Many nature lover who loves to run or walking while feeling the nature, but stuck due to busy schedule and cannot use inconvenient treadmill cycle for traveling short distance, due to this reason, modification of treadmill cycle was required. Basically, the concept of treadmill is to transfer human energy into motion of machine. We want to give the best treadmill ride to the riders. And we have believed that, it will be the best suited device for health-conscious people. The existing treadmill cycle frame and handle are made up of mild steel and we are replacing mild steel with aluminium alloy. We are completely removing the heavy mechanism on the rear wheel and implementing simpler and easier mechanism to reduce weight of treadmill cycle. By modifying the existing treadmill cycle, we are replacing normal spoke wheel with an alloy wheel. In treadmill frame heavy rollers are completely replaced by light weight rollers.*

I. INTRODUCTION

The Modification deals with the optimization of the existing treadmill cycle with respect its weight there by making the right easier and more comfortable. Treadmill cycle is a new and innovative device for running, while covering traveling distances and enjoying nature. By using the treadmill cycle we can get an experience of walking and running. If we talk about our previous working treadmill cycle, we have observed some obstacles while riding such as unbalanced ride, speed bumps, high effort required, and heavy weight. People are not able to use treadmill cycle on daily basis due to these inconvenient obstacles. In our modified cycle, we have tried to provide safe, less effort required, and well-balanced position on treadmill to the riders. It is made up of various mechanical component combining with DC motor, that will give a better speed while walking. As, Treadmill transfer human energy into motion of machine. So, when the rider walks on the cycle, the belt pushed in backward direction, by every footstep. The belt butts up against the rear wheel propelling the bike forward. It is fuel free and made of aluminium alloy which will give us a durable, light weight, convenient and smooth working cycle. This will make simple for people to use the treadmill cycle on the daily basis, while continuing their work and enjoying nature.

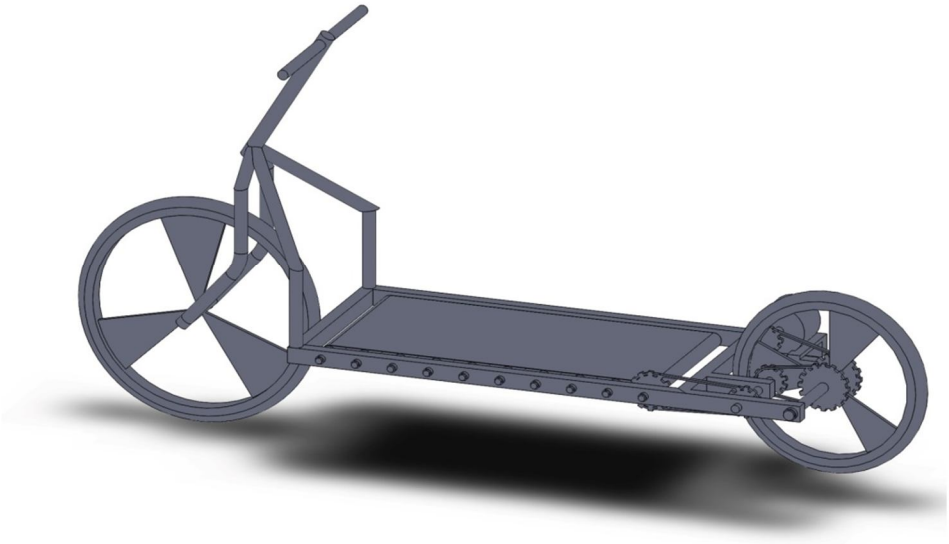


Fig. Design of treadmill Cycle

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II. PROBLEM IDENTIFICATION

A. In existing treadmill bicycle the centre distance between two end rollers is more, hence there is chance to unbalance the bicycle, to overcome these problems we try to decide to modify it in short length
B. Weight is main parameter in every machine; hence we try to minimize the weight by using aluminium alloy.
C. To control the stability of treadmill bicycle rear side one side assembly will remove totally and make bicycle balance.
D. To maintain the incline slop for comfort position, need to replace the rear wheel in less diameter as compare to front wheel.

III. MATERIAL USED

We have used Aluminium alloy 6061 which provides enough strength and light in weight. Density of 6061 aluminium alloy is 2.7 g/cm3. 6061 aluminium alloy is heat treatable, easily form, weld-able and corrosion resisting material. The first digit of 6061 represents main alloying elements, second digit of 6061 represents standard alloy and last to digit represent Specific alloy.

1) 97.9% Aluminium
2) 1.0% Magnesium
3) 0.6% Silicon
4) 0.28% Copper
5) 0.2% Chromium

Mechanical properties	Metric
Modulus of Elasticity	68.9 GPa
Ultimate tensile strength	310 MPa
Tensile yield strength	276 MPa
Rockwell B Hardness	60
Elongation of Break	16%

IV. OBJECTIVES

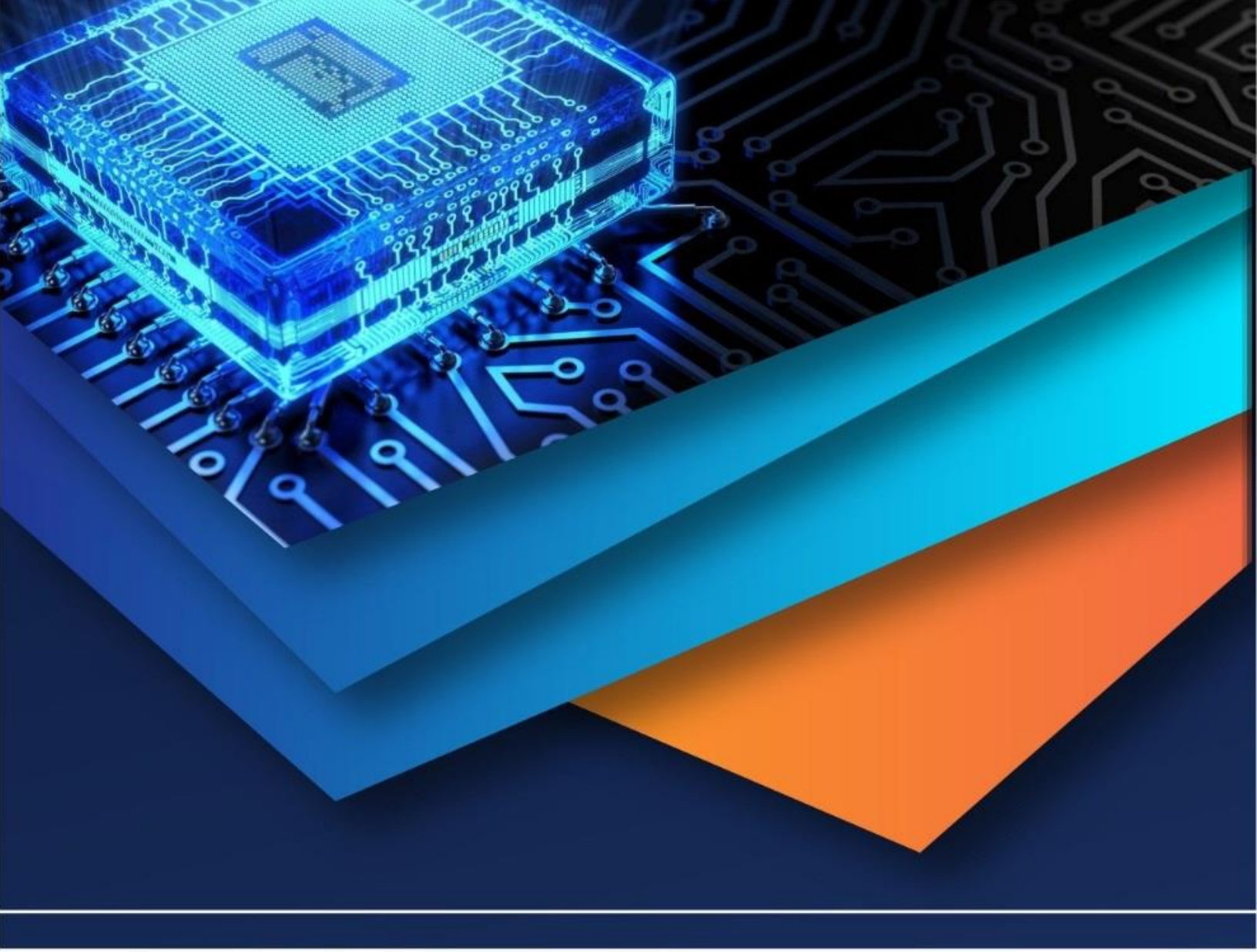
A. The modified power health cycle is totally a new gateway of transportation.
B. The modified light weight assistance cycle that takes very minimal effort on walk, and easily handling by the riders.
C. The components have been used which makes our cycle, safe, easily handling, smooth working and durable.
D. This cycle is convenient to use on daily basis also to cover short distance while maintaining health.
E. By this rise in pollution our eco-friendly cycle helps to save environment and also make people exercise while they traveling to various destinations.

V. APPLICATION

A. Treadmill cycle can be used as alternative transport mode for small distances.
B. It can be used for commuting in malls parks and outdoor places nearby.
C. This is the best mode of transport which reduces fuel consumption and also can be used for exercise.

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