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Design of an Energy Efficient Electric Auto Rickshaw

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Abstract : Three wheeler auto Rickshaw, often termed as 'auto rickshaw' is very common in Pakistan and is considered as the most affordable means of transportation to the local people. Problems caused by the gasoline engine on the environment and people, the researchers and the automotive industry have turned to the hybrid electric vehicles and electrical powered vehicle. The research in this paper explains the design of energy efficient Electric auto Rickshaw. An electric auto rickshaw is being developed at Center for Energy Research and Development, (Lahore), which is running on the roads of Lahore city. Energy storage capacity of batteries is at least 25 times heavier than fossil fuel and having volume 10 times in comparison to fuel, resulting an increase of the Rickshaw weight. A set of specifications is derived according to the mobility requirements of the electric auto rickshaw. The design choices considering the power-train and component selection are explained in detail. It was concluded that electric auto rickshaw has many advantages and benefits over the conventional auto rickshaw. It is cleaner and much more energy efficient but limited to the distance it can travel before recharging of battery. In addition, a brief future view of the battery technology is given.

Keywords : conventional auto rickshaw, energy efficiency, electric auto rickshaw, internal combustion engine, environment
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