



# AIUB DSpace Publication Details

**Title:** Bloom Box Powered Electrical Vehicle with Carbon Nanotubes Wound Motor Drive Train

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## Abstract:

The electrical energy is the main concern to run of an electrical vehicle. This electrical energy is generally obtained from a bank of batteries. These batteries require lot of space, and they are heavier. These facts affect the performance and efficiency of an electrical vehicle. Bloom box can utilize both fossil (natural gas) and renewable (stream air) sources to produce electricity. Its operation is noiseless. It can supply higher energy although it is smaller in size. Its size and weight is more less than batteries which are used in electrical vehicles. So battery can be replaced by bloom box in the power distribution panel of an electrical vehicle to supply electricity. In addition, carbon nanotubes offer higher conductivity and thermal stability than copper. So copper can be replaced by carbon nanotubes based yarn of electrical motor in the drive trains to reduce energy loss, increase efficiency and reduce size and weight of the motor as well as whole electrical vehicle. In this paper, the carbon nanotubes assisted motor drive train is proposed for an electrical vehicle which is powered by bloom box. The performance of proposed electrical vehicle has been verified using various mathematical calculation and simulation works. The simulation has been done using COMSOL Multiphysics 5.0 for Bloom Box layout and Matlab/Simulink model for direct current (DC) series wound type motor.

**Keywords:** Battery, bloom box, carbon nanotubes, DC motor, electrical vehicle, fuel cell, stator windings