Review of: "Performance Evaluation and Analysis of Electric Vehicle Parameters – A Test Bench"

Gholam Abbas Nazri[1]

1 Wayne State University

Potential competing interests: No potential competing interests to declare.

Review of the following paper submitted for publication in**Qeios**

Performance Evaluation and Analysis of Electric Vehicle Parameters – A Test Bench

K. Vijayakumar1 S.Kannan

1. This paper describes the classification of electric vehicles in limited classes of “i) an entirely battery-operated EV, ii) a solar-powered EV, and iii) a hybrid EV”. This classification doesn’t include the progressive development of EVs such as start-stop, mild-hybrid, strong-hybrid, plug-in hybrid, battery electric vehicle (BEV), extended range EV, etc.

In addition, the list of EV manufacturers is also limited, and many major players in the EV market are not mentioned. This section needs to be modified.

1. The description of driving cycles, particularly the standard driving cycles of the Environmental Protection Agency (EPA), is completely missing in this paper, and only some of the European and a limited number of Japanese driving cycles are mentioned.

This section should provide a complete picture of accepted standard driving cycles that are recognized by governments and industries.

1. The paper doesn’t provide a correct picture of the batteries used in EVs and hybrids. The Ni-MH battery has been successfully used by Toyota in (profitable) Prius vehicles. However, Zinc-air has been proposed but is not currently adopted in EVs, as it has a major technical issue related to its rechargeability. The current trend in the usage of lithium batteries among car industries also has not been explored.
2. In some areas, there are inconsistencies in the text, particularly when the EV components are discussed. The paper recognizes 6 major components but mentions more than 8.
3. In this paper, the analysis is based on DC motors that have a very limited use in EVs, and the DC motors are not as efficient as AC motors.
4. The detailed simulation using MATLAB is also missing.

Overall, the paper provides a good background for engineers entering this field, but it requires major revisions before being useful to a wider audience and for publication.