Utilizing Low-Cost Hybrid Technology to Decrease Emissions in Motorcycles

Wagher, Nikhil (School: Rivermont Collegiate)

I have designed and tested a plug-in hybrid motorcycle “backpack.” Essentially, it bolts onto the back of a large variety of motorcycles with little-to-no modifications. It is cost efficient and the materials are easily sourced. Utilizing the adaptability that a friction drive has, it can be used on a variety of different kinds of motorcycles, from small mopeds to 700 lb. Harleys. Although it is not designed for highway speeds under solely electric power, it can be used for up to 15 mph. It also has a USB output to charge a small device. The engine can be completely shut off and the motorcycle will drive under full electric power. By utilizing cost effective hybrid technology in motorcycles, emissions can be decreased during low speed travel, braking, and accelerating. This device is a solution to the growing problem of pollution in developing countries. After creating a cost-effective hybrid device to attach to a wide variety of pre-existing motorcycles, their emissions and mpg can be improved during low speed travel. The experiment was successful, as the prototype worked. After recording data in a controlled environment before and after adding the hybrid backpack, it was proven that the system works. To further improve it, I will design a way to charge the battery while driving the bike instead of having to plug it in to charge.

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