Study of engine control for the hybrid electric vehicle system

劉兆俊、張舜長

E-mail: 9707929@mail.dyu.edu.tw

ABSTRACT

HEV (Hybrid Electric Vehicle, HEV) is a kind of union internal combustion engine and the electric motor zero pollution characteristic make a high power, the endurance is good and low noise, low pollution also the environmental protection concept vehicles. Under today environmental protection, HEV can provide the proper attention to both and low pollution, it may be said will be in a future vehicles big gospel. This study is for the purpose of discussing the compound power vehicles to be able to operate under the high economic efficiency in order to enable the hybrid power system the vehicles to achieve true low pollution and also saves the energy the goal. The first will have first in entire compound dynamic system only to be able to have the waste gas internal combustion engine control and also can maintain the low fuel consumption, under the pollution condition in the high efficiency operation. In this study for the internal combustion engine can be maintained in the best operating point operation, prior to collect a lot of papers at domestic and abroad, to use as reference for the development of the internal combustion engine controller. Ultimately choose to study proportional, integral, differential (PID) Controller, to make the internal combustion engine controller experimental tests and the way to confirm the development of the internal combustion engine controller is able to meet demand. Finally, we have produced to the development of the internal combustion engine controller system used in the combination of experimental platform. Use ECE40 driving cycle test, collocation fuel consumption meter, A/F ratio meter, the exhaust gas analysis meter experimental equipment to confirm results of the internal combustion engine controller of control. After the complex power system on the experimental platform after the test found that we produced by the internal combustion engine controller really allows the internal combustion engine to achieve fuel consumption and exhaust emissions are reduced, and the output power can remain within the target set.

Keywords : Hybrid Power System ; Engine Controller ;PID Controller ; ECE40Driving Cycle

Table of Contents

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