Can a dual clutch be equipped with an energy storage device

Does a dual clutch transmission improve acceleration performance and fuel efficiency?
Abstract: Dual clutch transmission (DCT) which can simultaneously improve acceleration performance and fuel efficiencycompared to automatic transmissions (AT) and manual transmissions (MT) is one of the most noted studies in recent powertrain applications.

Does clutch actuator reduce fuel efficiency of DCT-equipped vehicles?
However,much of energy consumption of clutch actuator reduces fuel efficiencyof DCT-equipped vehicles. In order to reduce energy consumption of these actuators,a method of modifying mechanism and a method of improving it through control have been studied.

Are energy storage devices a problem?
The energy storage device is the main problem in the development of all types of EVs. In the recent years,lots of research has been done to promise better energy and power densities. But not any of the energy storage devices alone has a set of combinations of features: high energy and power densities,low manufacturing cost,and long life cycle.

What is a flywheel energy storage system?
It stores energy on the rotating mass principle. The whole flywheel energy storage system (FESS) consists of an electrical machine,bi-directional converter,bearing,DC link capacitor,and a massive disk. Its high efficiency (90%-95%) is its major advantage in all ESS.

The main benefits of dual clutch transmissions (DCTs) are: (i) a higher energy efficiency than automatic transmission systems with torque converters; and (ii) the capability to ...

Two novel transmission types using brake and clutch components are studied. o The compromise between efficiency and energy storage system mass is characterised. o ...

In order to improve vehicle fuel economy, an energy management strategy is designed. The model of a plug-in hybrid electric vehicle (PHEV) with dual clutch is constructed by combining ...

Adaptive Equivalent Consumption Minimization Strategy With Rule-Based Gear Selection for the Energy Management of Hybrid Electric Vehicles Equipped With Dual Clutch Transmissions ...

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The plot identifies the most appropriate storage device for particular applications according to each storage

potential, capacity, and on-demand energy extraction rate requirement [17]. A ...

Reducing energy losses during manual gearshifts is one solution, which can be achieved by automating the clutch operating and gear shifting processes that would normally ...

Hybrid electric vehicles (HEVs) equipped with dual clutch transmission (DCT) can benefit from engine auxiliary braking force and driving motor regenerative braking force in ...

Comparing the proposed DCT with traditional dual-clutch designs, it can be summarized that it has a reduced energy consumption for clutch control. Particularly, in a fairly common dry dual clutch of the ...

Overall, the synthesis of the energy-saving dry dual-clutch control mechanism providing the same clutch margin for each clutch was developed. The method can be ...

Dual-clutch transmissions (DCTs) can deliver the power from the engine to the output shaft smoothly during the shift process without power interruption ([27], [28]), leading to

This article discusses three types of clutch operations related to mode shifts: simple clutch engagement/disengagement and simultaneous engagement/disengagement of ...

With the increasing pressure on energy and the environment, vehicle brake energy recovery technology is increasingly focused on reducing energy consumption ...

The mismatch between power generation and load demand causes unwanted fluctuations in frequency and tie-line power, and load frequency control (LFC) is an inevitable ...

In EV application energy storage has an important role as device used should regulate and control the flow of energy. There are various factors for selecting the appropriate ...

For vehicles equipped with engines that can generate considerable torque, large clutch-slip energy losses occur during power-on gear shifts and, as a result, DCTs need wet clutches for ...

However, the torque interruption is nearly inevitable for stepped transmission, no matter it is clutch-based dual-clutch transmission (DCT) 8 or planetary-based automatic transmission (AT). 9 Compared to stepped ...

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