

Can electric drives be used in armored vehicles?

Discussion The implementation of electric drives on modern armored vehicles is possible because of fully reversible, motor/generators. The best available now are the axial flux permanent magnet motor/generators. They obtain very high instantaneous torque at zero or low rpm. This fact is ideal for heavy vehicles.

What types of energy storage systems do military vehicles need?

Chemical batteries, supercapacitors, flywheels, and fuel cells are potential candidates for the energy storage system. The critical operations of military vehicles present unique requirements for the energy storage system because it requires high energy capacity as well as high power capability.

Can a hybrid power pack be used for heavy tanks?

This study shows a possible design of a serial hybrid electric power pack for very heavy tanks with a weight well over 50 tons. The result is a hybrid power system that improves the overall performance of armored vehicles off-road and on-road, improving the acceleration and the smoothness of the ride.

Is hybrid energy storage a good option for military vehicles?

As given in Table 3, the hybrid energy storage provides a maximum power that is 53% more than the battery of the series configuration. This high maximum power capacity offers the potential to incorporate additional auxiliary devices in a military vehicle that require high instantaneous power.

Can a hybrid electric powertrain be used in military vehicles?

In this study, the development of a hybrid electric powertrain was done by considering the mobility attributes of military vehicles. The proposed configuration replaced the battery and single-speed transmission with a hybrid energy storage system and multi-speed transmission. The main conclusions of this study can be summarized as:

Are electric and hybrid light armoured vehicles possible for the military?

Andrew Holland, Programme Director of the American Security Project, a Washington-based think tank, believes that the latest developments in battery technology make it possible to consider electric and hybrid light armoured vehicles as feasible for the military. In recent years, he says that modern technologies have made a leap forward.

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This review paper covers the subject of vehicle design for protection against the blast of improvised explosive devices. It summarizes the most recent techniques in the ...

The lights and handholds both retract for transportation and storage. ... The ADP allows a bomb squad to be delivered closer to the proximity of a suspicious device eliminating long walking distances in heavy protective ...

The demand for electrical power in ground combat vehicles has been consistently increasing over the years. In the years to come, abundant onboard electrical power, along with a modernized ...

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Aimed at characteristic of regenerative brake of hybrid electric drive system of armored vehicle, hybrid electric drive system of armored vehicle with two energy storage devices (battery and ...

As technological innovations continue to advance rapidly, effective power management for future armoured vehicles is more crucial than ever to ensure the operational readiness of armed ...

Abstract: Aimed at characteristic of regenerative brake of hybrid electric drive system of armored vehicle, hybrid electric drive system of armored vehicle with two energy storage devices ...

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