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## A hybrid system for non-hybrid vehicles

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The environmental impact of automobile usage has been on the rise for the past several decades and has become one of the world's major ecological and social problems. Alternate technologies such as electric cars, hybrid vehicles, and fuel cells are necessary and should be implemented to monitor or avoid the future worsening of Air Quality Index. The emergence of hybrid electric vehicle (HEV) technology, it is seen as a ready-to-use alternative option in terms of infrastructural limitations. Over the past few years, several manufacturers have implemented hybrid systems across several vehicle models to increase fuel efficiency and to reduce emissions. City traffic jams nowadays are constantly devastating. The continuous short stops of vehicles can cause the frequent occurrence of idle engine conditions and excessive fuel consumption. Usually, the hybrid car achieves higher fuel economy and lower emissions than traditional internal combustion engine cars, leading to fewer emissions. Hybrid vehicles will reduce air pollution by up to 90% from smog-forming pollutants and slash carbon dioxide emissions in half. Therefore, hybrid vehicle demand is growing, ensuring energy saving and reduction of emissions by equipping with hybrid idle system and brake energy recovery system and driving assistance. The aim of this project is to design a hybrid system for non-hybrid vehicles with a view to improving fuel efficiency and reducing the potential for greenhouse gas emissions. An attempt was made to develop a hybrid system that includes idle start-stop driving assistance using cheap microcontrollers. To validate this hybrid system, it can be equipped with an electronic fuel injection system on any form of non-hybrid vehicle.

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