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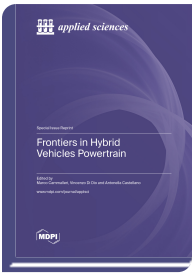
Special Issue Reprint

Frontiers in Hybrid Vehicles Powertrain



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The increasing concern regarding environmental issues has led to the adoption of stringent regulations worldwide to facilitate the urgent move towards green mobility and sustainable transportation. In this regard, electrified powertrains are bound to replace conventional thermal engines to reduce greenhouse gases and pollutant emissions. The synergy between the internal combustion engine and the electric unit in hybrid electric vehicles (HEVs) significantly reduces fuel consumption and emissions while maintaining high vehicle performance and driving comfort. Moreover, unlike pure electric vehicles, the hybrid electric powertrain fulfills even the most demanding energetic requirements, ranging from light- and heavy-duty vehicles to agricultural machinery, vessels, and aircraft, thus becoming the optimal sustainable solution in the short term. Nonetheless, the full potential of HEVs can only be exploited using a multidisciplinary approach to design the mechanical and electrical equipment and implement the optimal energy management strategy. This Special Issue, “Frontiers in Hybrid Vehicles Powertrain”, provides a broad perspective on the current challenges and research trends of the hybrid electric powertrain collecting nine peer-reviewed papers dealing with the main mechanical, electrical, controls, and energetic issues of HEVs.

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