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A Mini-Review on Effect of Magnetic Field and Material on Combustion Engines

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Abstract : At present, research on automobile engineering is in high demand, particularly in the field of fuel combustion. A large number of fossil fuels are being used in combustion, which may get exhausted in the near future and are not economical. To this end, research on the use of magnetic material in combustion engines is in progress to enhance the efficiency of fuel. The present review describes the chemical, physical and mathematical theory behind the magnetic materials along with the working principle of the internal combustion engine. The effect of different magnets like ferrite magnet, Neodymium magnet, and electromagnets was discussed. The effect of magnetic field on the consumption of the fuel, brake thermal efficiency, carbon monoxide, Oxides of Nitrogen, carbon dioxide, and hydrocarbon emission, along with smoke density, have been discussed in detail. Detailed mathematical modelling that shows the effect of magnetic field on fuel combustion is elaborated. Required pictorial representations are included wherever necessary. This review article could serve as a base for studying the effect of magnetic materials on IC engines.

Keywords : magnetic field, energizer, fuel conditioner, fuel consumption, emission reduction
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