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# Coal Fired Solid Fuel Engine

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### Abstract:

The less amount of production of petroleum fuels and rising demand of the petroleum fuel has resulted into search for alternative fuels. The various categories in the fuels are liquid fuel, gaseous fuels like methanol, ethanol, LPG, CNG etc. But solid fuels used as direct fuel for diesel engines is a new concept and coal being used in powder form as direct fuel making the engine to be solid fuel engine. The investigation revealed that the powder coal has to be pulverised to size of 10 to 75 micron and it can be injected or inducted in the engine cylinder. The use of injection of coal -diesel slurry or coal water slurry resulted into slurry being used as fuel and most important is the use of water as fuel is possible. The investigations show that this type of engine has number of problems and research areas in which investigations are required. The pulverization technic for 5-10-micron size of coal and highly volatile coal is able to provide high speed operation of engine. The problems of feeding coal either by induction which requires proper mixing using coal carburettor or injection using coal injectors. The problems remain with combustion of fuel and for faster combustion high volatile and low size fuel is needed. The wear of components is the major concern because solid particles provide more wear. The life of engine seems to be less and corrosion of components seems to be high.

**Key Words:** solid fuels, solid fuel engine, pulverized coal, coal fired diesel engine