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ABSTRACT

In the present research work a laboratory test rig has been developed for biodiesel production based on principal of hydrodynamic cavitation. In this process thumba oil mixed with required quantity of methanol and catalyst (sodium hydroxide) is continuously passed through an orifice hole. The favorable cavitation conditions are generated in the down stream for transesterification reaction. The mixture is continuously re circulated through a pump and the estimated time for biodiesel production is 45 minutes.

A performance testing has been done on a four stroke four cylinder Indica diesel engine for pure diesel and three biodiesel blends (B-10, B-20 and B-30). The various performance parameters such as torque, brake power, specific fuel consumption, brake thermal efficiency and opacity are studied and compared in reference to pure diesel. The performance testing results of biodiesel blends is quit comparable with pure diesel.

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