

## عنوان مقاله:

Experimental Study of Performance of Spark Ignition Engine with Gasoline and Natural Gas

## محل انتشار:

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## خلاصه مقاله:

The tests were carried out with the spark timing adjusted to the maximum brake torque timing in various equivalence ratios and engine speeds for gasoline and natural gas operations. In this work, the lower heating value of gasoline is about ۱۳.۶% higher than that of natural gas. Based on the experimental results, the natural gas operation causes an increase of about ۶.۲% brake specific fuel consumption, ۲۲% water temperature difference between outlet and inlet engine, ۳% exhaust valve seat temperature, ۲.۳% brake thermal efficiency and a decrease of around ۲۰.۱% maximum brake torque, ۶.۸% exhaust gas temperature and ۱۹% lubricating oil temperature when compared to gasoline operation. The results also revealed that, over the entire range of engine speed and equivalence ratio, the exhaust gas temperature and the lubricating oil temperature for gasoline operation is higher than that of natural gas operation while the exhaust valve seat temperature for natural gas operation is higher.

## کلمات کلیدی:

Engine Performance, Spark Ignition Engine, Gasoline, Natural gas, lower heating value

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