

## EXPERIMENTAL INVESTIGATIONS ON WORKABILITY AND EXHAUST PRODUCTS OF PETROL ENGINE

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### ABSTRACT

**Aim:** Tests were done out to estimate the workability of 4-S, mono cylinder, petrol engine with cuprum coated engine [CCE, Cu-(covering a layer of 0.3 mm) layer on top portion of piston, and interior side of head of cylinder] attached oxidizer with sponge iron as oxidizer with different test fuels of pure petrol, C<sub>2</sub>H<sub>5</sub>OH mixed with petrol (80% petrol) and CH<sub>3</sub>OH mixed with petrol (80% methanol) and correlated with base engine (CE) with petrol operation.

**Variables of Study:** Workability variables of engine rotational speed, ratio of compression, BTE, EGT) were changed with variable BMEP.

**Methodology:** The products of exhaust CO and UBHC were determined with variable BMEP. The engine was attached with oxidizer with sponge iron and manganese ore as oxidizers. Air injection facility was incorporated in to oxidizer. The workability was judged with one oxidizer with other oxidizer.

**Brief Results:** There was an increase of BTE with C<sub>2</sub>H<sub>5</sub>OH mixed with petrol with both versions of the engine. There was rise in BTE with CCE with respect to CE with both experimental fuels. Ratio of compression had effect on BTE, while there was marginal effect on speed. Products of exhaust decreased with CH<sub>3</sub>OH rather than C<sub>2</sub>H<sub>5</sub>OH, which was reflecting on both versions of the engine. Air spray in to the oxidizer had great effect in reducing emissions with variable experimental fuels and different shapes of the engine.

**KEYWORDS:** Petrol Engine, C<sub>2</sub>H<sub>5</sub>OH, CH<sub>3</sub>OH, CE, CCE, Workability, Exhaust Products, and Oxidizer