LABORATORY-SCALE COMBUSTION OF COAL-OIL MIXTURES

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ABSTRACT

A study was made of the combustion of the different blends of Coal-Oil mixtures (COM) (15-35% coal, 65-85% bunker oil) in a specially designed & fabricated laboratory-scale combustion facilities.

A finely ground Bislig coal (90 % < 150-200 mesh, 10 % < 100 mesh) was prepared and mixed with bunker oil for the study. The dispersion of pulverized coal in oil called slurry was found to be relatively stable and could be pumped as liquid and burned nicely in a manner similar to pure bunker oil in the fabricated equipments.

The preliminary set of information obtained from the study and of the combustion performance of the different blends of the mixture are reported. Combustion performance of this developed fuel is mainly judged by the amount of combustible matter that burns and reporting this as combustion efficiency. Highest combustion efficiency obtained was 93 % for 15 % COM, 92 % for 25 % COM, and 90 % for 35 % COM, with both the secondary air and the fuel being pre-heated.

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