ON IMPROVING THE EFFICIENCY OF THERMAL MACHINES: PROMISING WATER–FUEL EMULSION

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Abstract: The possibility of improving the efficiency of thermal machines is considered on the example of reciprocating internal combustion engines. The prospects of application of water – diesel fuel (DF) emulsions as well as advantages and disadvantages of existing methods of obtaining such compositions are discussed. Special attention is paid to the application of the method of intensive mechanical activation to obtain stable aqueous emulsions of DF. The results of comparative testing of water–fuel emulsions (VFE) are presented. The results of the experimental studies of the structure and temperature regimes of single drops of different VFE (33% water) at their ignition in air at atmospheric pressure are presented.

Keywords: heat engines; internal combustion engines; diesel fuel; water–fuel emulsions; mechanical activation

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