UDC 621.43.068.4

Neyachenko I.I., Egorov V.A. Fuel Metering Control during Cold Start & Warm-Up of Gasoline Engine // Internal

combustion engines. – 2007. – № 1. – P. 119-124.

This investigation presents a course of research work

with well known phenomenological X- wall-wetting-fuel

model for an inlet system of a gasoline engine. The MATLABSimulink

computer model of a mixture preparation was

adapted to correspond with peculiarities of a cold start and

warm-up PFI-engine behaviour. A target of the control algorithm

is an achievement of a preset air/fuel ratio (AFR) in cylinders.

To rich the above target an individual cylinder computing

of a fuel metering with taking into account a fuel film dynamic

in each cylinder and a current engine state parameters –

such as an engine speed, a cylinder air charge and engine temperature,

was performed.

Due to developments of a control algorithm more precise fuel

metering was achieved. Updated control algorithm includes a

new two-component fuel film model, a new sub model of

«combustion chamber» temperature and a new sub model of a

cylinder air charge. An additional program module with «observer

»-function was incorporated into control model, this

makes extending of a working range on a fuel cut-off mode. Il.

3. Bibliogr. 5 names.