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Neyachenko I.I., Yamolov Yu.I. Modeling of Individual Cylinder Fuel Control during Cold Start of Gasoline Engine // Internal combustion engines. – 2006. – 1. – P.133-138.

The known phenomenological X-wall-wetting-fuel model for an inlet system of a gasoline engine was taken as a base to present a control model of fuel metering. In this work the Matlab-Simulink computer model of a mixture preparation was modified to correspond with peculiarities of a cold start PFI-engine behaviour. A target of the control algorithm is an achievement of a preset air/fuel ratio (AFR) in cylinders. To reach the above target an individual cylinder computing of 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.

Model parameters were measured by means of experimental test procedures on an engine dynamometer in a cold chamber under corresponding steady-state mode of engine operation. AFR dynamic response was measured by universal exhaust gases oxygen (UEGO) sensor positioned in exhaust pipe. II. 3. Bibliogr. 9 names.