

عنوان مقاله:

Effect of fuel filter life on exhaust emissions parameters of a gasoline engine: RSM optimization approach

محل انتشار:

مجله علم مهندسی خودرو، دوره 11، شماره 3 (سال: 1400)

تعداد صفحات اصل مقاله: 13

نویسندگان:

Mani Ghanbari - *Department of Mechanical Engineering of Agricultural Machinery, Faculty of Agricultural Engineering, Technical and Vocational University (TVU), Tehran, Iran*

Lotfali Mozafarivanani - *Department of Auto Mechanic, Faculty of Mechanical Engineering, Technical and vocational University (TVU), Tehran, Iran*

Masoud Dehghanisoufi - *Department of Agrotechnology, College of Abouraihan, University of Tehran, Tehran, Iran*

خلاصه مقاله:

The fuel system in internal combustion engines is one of the most accurate and sensitive parts and its operation has a significant effect on the quality of combustion process and the content of exhaust emissions. In this study, the effect of fuel filter life on lambda and exhaust emissions of engine has been investigated using the response surface method (RSM). The results showed that the elevated values of lambda (1.042) and CO (0.88%) occur at the engine speed of 5000 rpm with a fuel filter life (FFL) of 60,000 km. Also, the highest CO₂ content was obtained as 14.9% at 1000 rpm with a new fuel filter (0 km). Moreover, the highest amount of HC emission (215 ppm) was measured at 1000 rpm and using FFL of 60,000 km. The results showed that increasing the fuel filter life increases the exhaust emissions of the engine. Therefore, timely replacement of the fuel filter, in addition to increasing engine performance, will reduce air pollution, especially in big cities.

کلمات کلیدی:

Gasoline Engine, Fuel Filter, Lambda, Exhaust Emission

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1865288>

