

عنوان مقاله:

Comparative Analysis of Exhaust Emission Pollutants from Two Gasoline Engines

محل انتشار:

مجله تحقیقات بیومکانیک و بیوانرژی، دوره 2، شماره 2 (سال: 1402)

تعداد صفحات اصل مقاله: 11

نویسندگان:

.Reza Yeganeh - Department of Mechanical Engineering of Biosystem, Agriculture Faculty, Ilam University, Ilam, Iran

.Bahram Ghamari - Department of Mechanical Engineering of Biosystem, Agriculture Faculty, Ilam University, Ilam, Iran

.Goudarz Rezaei - Department of Mechanical Engineering of Biosystem, Agriculture Faculty, Ilam University, Ilam, Iran

.Shaban Ghavami Jolandan - Department of Biosystems Engineering, Faculty of Agriculture, Shahid Chamran University of Ahvaz, Iran

خلاصه مقاله:

In order to investigate the impact of four types of consumed fuels on the emission of exhaust gases from two common car engines (TYPE I and TYPE II) under identical conditions, an experimental study was conducted in Islam Abad Gharb, the central location for automotive technical. The study followed factorial completely randomized design with six replicates. After preparing the engines according to relevant standards, sampling was carried out while the engines were idling at a low RPM with the gear lever in neutral. The fuels examined in this research comprised export gasoline, super gasoline, regular gasoline, and CNG gas. The measured exhaust gases exhausted from the engines included oxygen (O₂), carbon monoxide (CO), carbon dioxide (CO₂), unburned hydrocarbons (HC), and nitrogen oxides (NO_x). These gases were compared with international standards and those set by automotive technical inspection centers. The results indicated that the volumetric percentages of oxygen produced during the combustion of export gasoline are ۰.۱۴% and ۰.۰۴% for TYPE II and TYPE I engines, respectively. Additionally, carbon monoxide percentages are ۰.۰۱۶% and ۰.۰۲۳% for TYPE II and TYPE I engines. Furthermore, carbon dioxide emissions are ۸.۵۶% and ۱۰.۲۰% for TYPE II and TYPE I engines, respectively. The TYPE I engine exhibits a lower impact on hydrocarbon emissions across all fuels. In terms of nitrogen oxide (NO_x) concentrations, the TYPE I engine consistently plays a lesser role compared to the TYPE II engine for all tested fuels.

کلمات کلیدی:

Compression Ratio, Engine, Environment, Fuel, Pollutant

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1875395>

