

## عنوان مقاله:

Development of an optimized chemical kinetic mechanism for HCCI combustion of n-Heptane and natural gas fuels mixture using genetic algorithm

## محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

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## خلاصه مقاله:

HCCI combustion in vehicles requires hydrocarbons chemical oxidation mechanism investigation and their dominant kinetics. This kind of combustion also possesses enormous potential to reduce exhaust pollutants especially nitrogen oxides and it may decrease fuel consumption. Furthermore, one of the basic difficulties within HCCI combustion is its limited narrow performance. One of the main controlling procedures of HCCI combustion is the use of different hydrocarbons mixtures, which in this case, use of two fuel mixture of normal-heptane and natural gas for controlling of HCCI combustion could be considered. In this study, combined chemical kinetic mechanism for CNG and n-heptane mixture will be presented in which reaction rate parameters will be optimized by using genetic algorithm. The optimized chemical kinetic mechanism has been developed by utilization of a multi-zone combustion model. The results show that the optimized chemical kinetic mechanism can predict combustion and performance parameters properly to be in good agreement with experimental data.

## کلمات کلیدی:

HCCI Combustion, Chemical Kinetic Mechanism, Multi Zone Model, Genetic Algorithm

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/77601>

