

عنوان مقاله:

Numerical investigation on RCCI (Diesel/Gasoline) flame propagation and pollutants formation process within a combustion chamber

محل انتشار:

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خلاصه مقاله:

The environmental problems caused by global warming have led to strict regulations to limit greenhouse gas production. These laws have accelerated the changes in the automotive and transportation industries. RCCI combustion has always been considered one of the concepts that can increase the efficiency of internal combustion engines by more than 50%. In this research, by using 3D simulation, we investigate the basis and theory of RCCI combustion. Investigations have shown that flame propagation in RCCI combustion is different from conventional combustions, so that the onset of a flame kernel and the start of energy release are similar to diesel combustion, but the flame propagation is quite different. In RCCI engine, the whole combustion chamber is ignited so fast with forming several new flame kernels. In the following, the formation of NOx and soot pollutants is investigated, and the process of formation reactions of these pollutants is accurately analyzed.

کلمات کلیدی:

Flame Propagation, RCCI, NOx, Soot, Low-Temperature Combustion

لینک ثابت مقاله در پایگاه سیویلیکا:

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