

## عنوان مقاله:

Multi-Dimensional Modeling of the Combustion Process and Interactions with Flow Field in In-Direct Injection Diesel Engines

## محل انتشار:

هفتمین همایش بین المللی موتور های درونسوز (سال: 1390)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Ramin Barzegar - Lecturer Department of Mechanics, Parsabad Moghan Branch, Islamic Azad University, Parsabad, Iran

Sina Shafee - M.Sc. Graduate Sahand University of Technology

Samad Jafarmadar - Assistant Prof. Urmia University

Shahram Khalilarya - Associate Prof. Urmia University

## خلاصه مقاله:

The combustion process in the Lister 8.1 In-direct Injection (I.D.I) Diesel engine and its interaction with flow field is investigated using a Computational Fluid Dynamics (CFD) code. The utilized model includes detailed spray atomization, mixture formation and distribution which enable modeling the combustion process in spray/wall and spray/swirl interactions, typical in I.D.I engines. The analysis considers both part load and full load operating states. The global properties are presented resolved for the pre-chamber and main chamber separately. Results show that using this model, detailed information can be achieved regarding the flow pattern within the chambers and the spray combustion characteristics. Results for in-cylinder pressure and rate of heat release are compared with available experimental measurements and they show very good agreement. It is seen that equal amount of fuel is burned in the main and pre-chamber at full load state while at part load, most of the fuel is burned in the main chamber. It is also shown that adherence of fuel to pre-chamber walls is due to formation of a stagnation zone which prevents quick spray evaporation

## کلمات کلیدی:

I.D.I, Diesel engine, CFD, spray, combustion

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/679187>

