Influence of Gas Type and Injection System on Simultanous Reduction of Soot and NOx in IDI Diesel Engine.

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Abstract

Modification has been made to one of the prechambers of a 4-cylinder. IDI diesel engine used to study the combustion process, for the purpose of reducing emissions. With the provisions for optical assessment o the combustion process in the prechamber, the effect of high-pressure gas injection into the prechamber during injection has been carried out. Results of this work indicate that high-pressure gas injection during combustion can affect simultaneous soot and NOx reduction with a reasonably low amount of emission of other diesel engine pollutants. An optimum chamber type is suggested based on analysis of the effect of air, argon and nitrogen injection.