

## Numerical Simulation of Diesel Sprays under Hot Bomb Conditions

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**Abstract :** It has experimentally been proved that the performance of compression ignition (CI) engine is spray characteristics related. In modern diesel engine the spray formation and the eventual combustion process are the vital processes that offer more challenges towards enhancing the engine performance. In the present work, the numerical simulation has been carried out for evaporating diesel sprays using Fluent software. For computational fluid dynamics simulation “Meshing” is done using Gambit software before transmitting it into fluent. The simulation is carried out using hot bomb conditions under varying chamber conditions such as gas pressure, nozzle diameter and fuel injection pressure. For comparison purpose, the numerical simulations the chamber conditions were kept the same as that of the experimental data. At varying chamber conditions the spray penetration rates are compared with the existing experimental results.

**Keywords :** evaporating diesel sprays, penetration rates, hot bomb conditions

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