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# STUDY ON COUPLING EVAPORATION OF DIESEL DROPLETS

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## Abstract

The effect of the number of surrounding droplets and distance between evaporating droplets on evaporation rate of the target droplet is studied experimentally in an evaporator which has been validated based on the d-square law. It can be found that the evaporation rate of the target droplet decreases with the increase of the number of surrounding droplets and the decrease of the distance between evaporating droplets. The results analyzed experimentally and theoretically show that there is a uniform function between coupling parameters (distance between evaporating droplets, diameter and number of surrounding droplets) and the ratio of coupling evaporation rate and single droplet evaporation rate under different temperatures. The concrete expression of this function has been presented in this paper.

*Key words:* diesel fuel, droplet, experiment, evaporation rate

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