

A Simulation Study on Utilizing in Airbus 380 Fuel Tanks for Thrust and Fuel Efficiency

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Abstract : This paper explores the potential benefits of using nanofluids within the fuel system of an Airbus A380 to enhance engine thrust and reduce fuel consumption. By analyzing the Nusselt and Reynolds numbers, the study aims to understand the heat transfer and fluid dynamics that could lead to more efficient aircraft operation. The integration of nanotechnology in aviation fuel systems represents a promising frontier for improving aircraft performance. The nanoscale is a fluid whose particles are suspended between 1-100 nanometers and permanently in the particle. Adding nanoscale increases heat transfer. This research used silicon carbide nanofluid (sic nanofluid) with a percentage of (1,2,3,4%) the base fluid (Jet A1) as well as thermal properties including Nusselt number and thermal conductivity coefficient.

Keywords : nanofluid, airbus380, fuel tank, reynolds number

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