



**COMPUTATIONAL FLUID DYNAMICS (CFD) STUDY OF A REAR
SPOILER FITTED TO SEDAN CAR**

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“I declare that this thesis is the result of my own work except the ideas and summaries which I clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any degree.”

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ABSTRACT

Aerodynamic forces are important aspects that need to be considered in the study of a road vehicle design. The present study focuses on the effect of rear spoiler fitted on a sedan car at different angles of attack with reference to drag and lift coefficient. The aim of this project is to compare the aerodynamic characteristics of a concept car between 2 different spoilers. The angles of attack of both spoilers have been varied. The method of study that was used in this project is simulation using Computational Fluid Dynamic (CFD), STAR-CCM+ software program. The car model is generated using CATIA V5R16 to create the 3-D geometry of the concept car together with rear mounted spoiler. Drag coefficient, (C_d) and Lift coefficient, (C_l) were obtained from the simulation processes. This thesis presents extensive discussion of numerical solution and the outcomes from the simulations. Comparisons of drag and lift coefficients were made with and without spoilers at different angles of attack.

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