

Abstract

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Numerical and Experimental Investigation into Improving Vehicle Windshield Defrosting and Demisting

An obstructed vision of the driver, particularly at eye level, is uncomfortable and indeed dangerous. The windshield defrosting and demisting system is an important safety aspect of passenger cars. Due to the complexity of the windshield topography and the defroster nozzle geometry insufficient flow mixing as well as a poor momentum interchange is yielded in the vicinity of the windshield and as a result dead flow zones in critical visibility areas occur. The paper presents an experimental and a computational study of the defrosting/demisting problem. This study explores ways of improving the defrosting and demisting process through passive means and using the existing air handling system of the vehicle