

Environmental Protection by Optimum Utilization of Car Air Conditioners

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Abstract : According to N.R.E.L.'s findings, 700 crore gallons of petrol is used annually to run the air conditioners of passenger vehicles (nearly 6% of total fuel consumption in the USA). Beyond fuel use, the Environmental Protection Agency reported that refrigerant leaks from auto air conditioning units add an additional 5 crore metric tons of carbon emissions to the atmosphere each year. The objective of our project is to deal with this vital issue by carefully modifying the interiors of a car thereby increasing its mileage and the efficiency of its engine. This would consequently result in a decrease in tail emission and generated pollution along with improved car performance. An automatic mechanism, deployed between the front and the rear seats, consisting of transparent thermal insulating sheet/curtain, would roll down as per the requirement of the driver in order to optimize the volume for effective air conditioning, when travelling alone or with a person. The reduction in effective volume will yield favourable results. Even on a mild sunny day, the temperature inside a parked car can quickly spike to life-threatening levels. For a stationary parked car, insulation would be provided beneath its metal body so as to reduce the rate of heat transfer and increase the transmissivity. As a result, the car would not require a large amount of air conditioning for maintaining lower temperature, which would provide us similar benefits. Authors established the feasibility studies, system engineering and primarily theoretical and experimental results confirming the idea and motivation to fabricate and test the actual product.

Keywords : automation, car, cooling insulating curtains, heat optimization, insulation, reduction in tail emission, mileage

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