

# Noise Source Identification of Automotive Radiator by Using Sound Intensity Mapping Method

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## **Abstract:**

Radiator cooling fans is a device that work to pull air through a radiator to regulate the engine temperature. However, this operating cooling fan have been known as a major contributor to noise in a vehicle other than engine. It became more crucial to figure out a solution in reducing this vulnerability according to the unwanted bad effect that gives distraction to the community specifically to the passengers. In consequence of this risk, a detailed experimental study on noise analysis by using sound intensity mapping method of automotive radiator system is presented. Water was used as the working fluid operate with engine temperature range from 80 to 90 °C. The cooling fan speed of radiator cooling fan were varied from 500 to 1500 rpm and the water flowrates were 2.2, 2.8, 3.2 and 3.8 l/min. This method can be applied on-site rather than in an anechoic chamber as long as the background noises are stationary. The project delivers the reliable input for the engineering practice to reduce engine noise level.

**Keywords:** Automotive Radiator; Mapping Method; Operating Cooling

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