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(57) Abstract :
[041] The present invention relates to an AI-powered mist cooling and pollution control system designed for urban traffic signals. The system autonomously activates a water mist spray when ambient temperatures exceed a predefined threshold, typically 35°C, to reduce heat stress experienced by pedestrians, two-wheeler riders, and traffic personnel. It utilizes an ESP32 microcontroller in conjunction with temperature and water level sensors to monitor conditions and control operations. A buzzer alerts maintenance staff when the water tank is low, ensuring continuous functionality. The system operates using a hybrid renewable energy setup consisting of solar panels and wind turbines, eliminating dependency on external power sources. Compact, low-maintenance, and easy to install within existing traffic infrastructure, the invention promotes public comfort, pollution control, and sustainable urban development. Accompanied Drawing [FIGS. 1-2]

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