Solar powered outdoor air purifier with air quality monitoring

Al-Talib, Ammar A. M.[a]*; Aung, Ik Chu*[a]*; Tahir, Noor Idayu M.*[a]*; Saruchi, Sarah 'Atifah*[b]
[a] Department of Mechanical and Mechatronics, Faculty of Engineering, Technology and Built Environment, UCSI University, Kuala Lumpur, 56000, Malaysia
[b] Faculty of Mechanical and Mechatronics, University Malaysia Pahang, Pahang, Pekan, 26600, Malaysia

ABSTRACT
This paper has documented the detailed design, fabrication and test of a solar powered air purifier prototypee with a High Efficiency Particulate Air Filter (HEPA) and Carbon Filters which can achieve air purification with selfsustainable ability. Besides. Several tests have been conducted to assess the performance of the proposed solar operated air purifier. In the first test, a 67.37% efficiency is achieved for the solar panel. Second test of air purifier test has shown the efficiency of cleaning ammonia pollutant in the air as 43.55% for burning cigarettes and 35.33% for floor detergent using the equipped two MQ135 sensors. The findings are showing that the floor detergent might have higher rate of diffusion than ammonia molecule found in cigarette smoke.

KEYWORDS
Air purifier; Air quality; HEPA; Solar power

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