

Road Cleaning Machine with UV Sanitization

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Abstract: *Due to unassessed industrialization and unmanaged construction & development projects in developing countries like India, the quality of air has been significantly compromised. People are being compelled to inhale polluted air and a significant amount of dust particles. Air quality has been sufficiently degraded below the standard set by World Health Organization (WHO), and this has become a serious issue. One of the major reasons is dust particles spread from the road to the atmosphere by vehicles plying on the road, where roads are dug up for construction purposes only to leave them uncompleted because of political, financial, and personal interests of the elite groups and construction company owners. This can lead to serious health hazards like severe allergy, lung cancer and other problems related to breathing. In order to address this problem, we have designed, fabricated and tested a 'Mechanically Operated Road Cleaning Machine with UV Sanitization' prototype that is financially viable and socio-economically beneficial. This machine works on simple principle of centrifugal motion of cylindrical brush throwing dust particles from road surface in the container, uses local materials and is cheap with respect to other machines and is efficient as well. This can be used in the side area of roads where dust has been piled up in maximal amount. We have performed detailed mathematical calculation and analysis for design specification of each and every part of the machine components and made a prototype design in CATIA V5. Then after we successfully fabricated using conventional fabrication tools and tested its performance.*

Keywords: Air, Pollution, Dust, Health, Hazards, Road Sweeper, Brush, Centrifugal Motion, Design, Analysis, Testing

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