



# IJRASET

International Journal For Research in  
Applied Science and Engineering Technology



---

# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

---

**Volume:** 10    **Issue:** IV    **Month of publication:** April 2022

**DOI:** <https://doi.org/10.22214/ijraset.2022.41737>

[www.ijraset.com](http://www.ijraset.com)

Call:  08813907089

E-mail ID: [ijraset@gmail.com](mailto:ijraset@gmail.com)

# Design and Development of Road Cleaner Machine

Atul Waghmare<sup>1</sup>, Dhawal Singanjude<sup>2</sup>, Siddhant Meshram<sup>3</sup>, Aniket Panchabhai<sup>4</sup>, Manish Talmale<sup>5</sup>, Punam Umale<sup>6</sup>,  
Ruchika Kamble<sup>7</sup>

<sup>1</sup>Professor, Department of Mechanical Engineering, KDK College of Engineering, Nagpur, Maharashtra, India

<sup>2, 3, 4, 5, 6, 7</sup>Ug.Students, Mechanical Engineering, KDK College of Engineering, Nagpur

**Abstract:** Cleaning is that the main basic want for all people at large and it's necessary for daily routine method. the traditional road improvement machine is most generally utilized in several applications like example roads, railway stations, airports, hospitals, Bus stands, in multi floor buildings, faculties etc. additionally this machine uses human energy for its operating operation. In our project we have a tendency to square measure aimed to use simply on the market materials with low value and it may be simply made-up and straightforward to use and management. It's the higher different for typical machine.

**Keywords:** Eco friendly, Road Cleaner, Mechanically operated.

## I. INTRODUCTION

Cleaning has become a basic want for all people at large and it's inescapable daily routine method. the traditional road improvement machine is most generally utilized in railway stations, airports, hospitals, Bus stands, etc. Additionally this machine wants power for its operation. it's not user friendly likewise as eco-friendly. In summer time there's power crisis and most of the roads improvement machines aren't used effectively because of this drawback significantly. In our project we have a tendency to square measure mistreatment simply on the market materials with low value. it's the higher different for typical Machine improvement work may be physically strict and a necessity has been known to developed strategies for systematic engineering science analysis of latest merchandise. In recent years, floor improvement robots are becoming additional standard for busy and aging populations because of lack of employees. but in Asian nation, state is additional and therefore there's a necessity to develop less labor destined improvement machine. In recent years, typical floor improvement machines square measure most generally utilized in airports, railway stations, malls, hospitals and in several business places, as improvement is one among the necessary parameter for the sanitation and government laws. For maintaining such places, improvement the ground is that the major task that is critical.



Fig: Style and Development of Road Cleaner Machine.

## II. LITERATURE REVIEW

- 1) "Design and economical to use. Analysis of operated by hand Floor improvement Machine"-The authors has been designed and analyzed manually Gutter brush: Brushes square measure tools composed of bristles operated floor improvement machine. From his analysis he that square measure mounted into a mounting board, and, like alternative types concluded the strain level within the operated by hand of brushes, they're elastic, flexible, and change to machine is among the safe limit. irregular or flat surfaces. because of these options, a gutter brush will reach tough or specific areas while not damaging the bristles or the surfaces to be sweptwing. Sandeep. J. Meshram et al 2016

- 2) “Design and Development of wheeled vehicle Operated Street Cleaning Machine” – He has developed the road improvement machine by wheeled vehicle operated. during this analysis article he framed a model particularly for geographical area. He over that the cleaning is a smaller amount effective wherever the road looks to be very rough and broken. Liu et al 201
- 3) “Design and • Wire ropes Scope of the project: Existing road clean strategies are fabrication of a tractor powered leaves collector machine 2 varieties i) Electrical operated ii) operated by hand. equipped with suction-blower system”- The authors Manual improvement could causes shoulder drawback due to explained concerning the fabrication of leaves collector machine continuous sweeping. Electrically operated road cleaner’s by tractor powered with suction blower system. He has uses power to run the motor. In our project tframed the machine by mistreatment chassis, pump, blower, operated by hand road improvement machine is alternative gearbox, hydraulic jack. They over total power conception for avoiding such issues. It works very consumption of that machine is around 14634 W. expeditiously with regard to covering space. It's terribly M. Ranjith Kumar et al 2015

### III. PROBLEM IDENTIFICATION

How mud has become the key downside of capital of Nepal city? pollution is one in all the rising and exponentially growing downside. One in all the key contributors of pollution is harmful soil dusts particle. Soil dusts square measure generated thanks to heavily growth of road, construction of buildings, electrical and physical science maintenance pole in roads etc. These dusts aren't cleansed in time by the metropolitan staff. owing to that, mud will increase in immense quantity and unfold all around by vehicles, commuters and native wind. Therefore, observant this downside we tend to tried to bring an answer by victimisation native resource and technologies providing quicker and economical work with zero energy consumption.

### IV. AIM OF PROJECT

To develop a machine that helps in straight forward and fast cleanup to ge rid of the mud from road by the employment of scrubber that is rotate by victimisation wheel motion and it collect into assortment tank

### V. CONCLUSION

A mechanical setup is intended with synergies of mechanics and mechanical systems to produce economical cleanup, each at floor and therefore the road surfaces. This project works implements the operated by hand eco-friendly road cleaner for road cleanup that reducing the value, human efforts likewise as time. it's the simplest various for machine-driven road cleanup machine throughout power crisis. it's found that the present road cleanup machines uses gasoline and diesel. It will cause pollution and conjointly the vibration made within the machine causes sound pollution. The machine is economical. Manual cleanup might cause shoulder downside thanks to continuous sweeping. the straightforward mechanisms used during this system makes the vehicle easier for operation.

### REFERENCES

- [1] Muhammad KashishaikhGhaffar ,M.AadrilArshad ,NanadkishorS.Kale, Prof. D.M.Ugle (IAERD, April 2018), style & development floor cleanup machine.
- [2] V.Kaliaselavn, P.Jagadeseswaran, M.Gopi, B. Rahulraj (Nexgen Technologies, jan 2018), Fabrication of recent road cleanup vehicle.
- [3] AshishPatil, PranavPatil, JaywantPatil, RohitIngawale , Amar Patil (IRJET, April 2018), style & development of road aspect cleanup machine.
- [4] Praveen H, Harish Gowda , Anil G Ramageri, PrasanaKulkarni (IJRASET, may 2018), Design and fabrication of useful ecofriendly cleanup machine.
- [5] A.V.V.Mukesh, DR. M VaraprasadaRao, Chaitanya MSRK, (IJESR, feb 2016), style and developmentof simplified road cleanup machine, changed technology.
- [6] Prof. Dr. A. Muniraj, Arvind, K. Kadamban, T. TirumalaiBalaji. style & Analysis of operated by hand ecofriendly road cleaner (IJARTET, April 2017)
- [7] Prof. RohidasWaykole, Mr.VedangPujari, Mr. Ajay Pawar, Mr.UmakantPatil,ElectromagneticScrabcollecting machine with vaccum system. (IRJET, May 2018).



10.22214/IJRASET



45.98



IMPACT FACTOR:  
7.129



IMPACT FACTOR:  
7.429



# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089  (24\*7 Support on Whatsapp)