



Mahatma Gandhi Missions College
of Engineering & Technology

Development of fixative and fabrication of machine for the fixation of potholes and cracks on roads

Student name Mohak(14095400134), Md. Irshad(1409540032),
Gagan dev(1309540022), Sahil Dhyani(1409540024).
Department of Mechanical Engineering

Introduction

❖The Project entitled began with the focus on new fixative as an alternative to Bitumen to fill the potholes and cracks on rapidly growing Indian Transportation System and economy.

❖The first and foremost importance was given to the development of fixative.

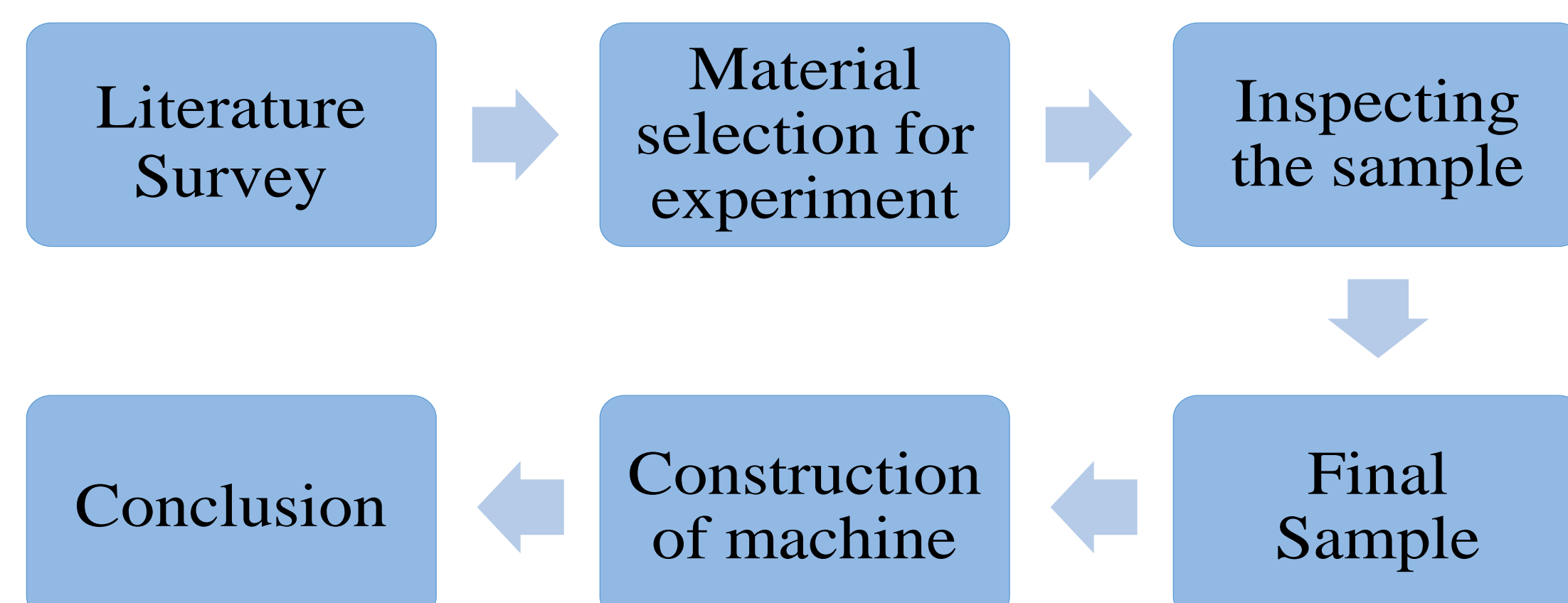
❖The project mentioned, as discussed in the synopsis is totally a nation centric concept. Cracks as they evolve into potholes, emerge as one of the major cause of deaths and damages on the roads.

❖Not only this project offers a solution to dissolve the problem of plastic waste generated but also, it'll reduce the expenses on road construction

Project Objectives

1. To provide a better alternative of binder (fossil fuel based) by developing a new type of fixative specialised for roads
2. To reduce the dependency on Bitumen patches for fixation of potholes and cracks.
3. To provide with an economical option of repairing the roads by developed fixative and heat treatment by the machine designed.

Methodology



Results and Discussion

PROPERTY	YES	NO
ADHESION	Y	
WATER RETENTION		N
TEMPERATURE SUSCEPTIBILITY	Y	
COHESION	Y	
SURVIVED 55 DAYS	Y	
THERMAL STABILITY	Below 60 C	

Fixative have to be subjected to various testing:-

- Microscopic age testing.
- FTIR.



From the final test:

- Light in weight and simple construction.
- Easy to use.
- Gas cylinder is detachable and refillable.
- Requires only maximum of 2 workers thereby reducing operating costs.
- Speedy and yet quality repairs can be done easily.

IMAGES



Conclusions

- It shows effective way of utilizing the plastic waste which will be accountable for socio-economic development of the country.
- It not only promises to curb the problem of plastic wastes but also, it shows less consumption of fossil fuel based Bitumen.
- Speedy and reliable services of repairing the potholes with minimum labor cost are another feat achieved by the project.

References

- Al-Hadidy A.I., Yi-qiu Tan, “Effect of polyethylene on life of flexible pavements”, 2009.

Guided by: Prof. A.K. SINHA
(Professor)