



# SWAMIVIVEKANAND INSTITUTE OF TECHNOLOGY (POLY.), SOLAPUR.

Civil Engineering Department.

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## Self-healing Concrete.

Self-healing concrete is a new type of concrete. It imitates the automatic healing of body wounds by the secretion of some kind of material. To create self-healing concrete, some special materials (such as fibers or capsules), which contain some adhesive liquids, are dispensed into the concrete mix. When cracks happen, the fibers or capsules will break and the liquid contained in them will then heal the crack at once. However, self-healing concrete is only at the research stage. Its application in the concrete industry is still some way off.

Self-healing concrete is mostly defined as the ability of concrete to repair its cracks autogenously or autonomously. It is also called self-repairing concrete. Cracks in concrete are a common phenomenon due to its relatively low tensile strength. Durability of concrete is impaired by these cracks since they provide an easy path for the transportation of liquids and gases that potentially contain harmful substances. If micro cracks grow and reach the reinforcement, not only the concrete itself may be attacked, but also the reinforcement steel bars will be corroded. Therefore, it is important to control the crack width and to heal the cracks as soon as possible. Self-healing of cracks in concrete would contribute to a longer service life of concrete structures and would make the material not only more durable but also more sustainable.

Mr. Virat Ganjale (SY)

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Ø Two faculty are pursuing M.E./M.Tech.

### Vision

To produce civil engineers with the necessary knowledge, skill and attitudes who can be entrusted by the society to lead a sustainable world with enhanced quality of life.

### Mission

To effectively train our students as civil engineers, who can serve the society competently, collaboratively and ethically as planners, designers, constructors and operators of the built environment.

## Message From The Head Of Department.

Dear student friends,

Happy Dr.Babasaheb Ambedkar Jayanti!

Dr Ambedkar was majorly known for fighting social evils, and representing the dalits and other backward communities for their rights. In Pandit Jawaharlal's cabinet, Dr Ambedkar was appointed as the first Law Minister of India. In 1990, he was awarded the highest civilian honour of the country 'Bharat Ratna', posthumously. The strength and future of a country is in the hands of the students. Only you have the power to brighten the tomorrow of India. The successful efforts of our scientist for finding COVID-19 vaccine should result in complete vaccination. Let us come together to celebrate the free spirit of India. Always feel proud in being an Indian because we have a glorious past and promising future. I wish you all the best for academic year 2022-23.

Mr. F.U.Shaikh

## Soil Stabilization.

Soil stabilization is a very common process for almost all the road projects. Broadly, all types of soil stabilization can be classified into two groups, i.e. mechanical stabilization and chemical stabilization. In mechanical stabilization, the grading of a soil is changed by mixing it with other types of soils of different grades. By doing so, a compacted soil mass can be achieved. On the other hand, chemical stabilization is associated with the modification of soil properties by the addition of chemically active materials. In soil stabilization, it is very important to understand the material properties involved in the mixture and the outcome after mixing. Moreover, it is important to find out how the material is going to perform after stabilization. At the same time the effects of the process on the nearby structures and surrounding conditions need to be evaluated. Accordingly, decisions can be taken on the selection of materials and the corresponding doses.

Ms. Sanskriti Patil (SY)

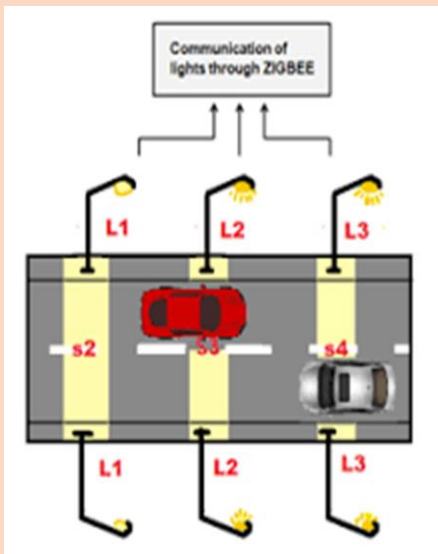


## Green Building.

A green building is a structure that minimizes its environmental impact while improving the well-being and comfort of its occupants. It is designed to be sustainable from the planning phase and developers employ innovative designs to achieve sustainability. As a result, green buildings are also called sustainable buildings. The main objectives of green buildings are to optimize energy consumption, deliver high efficiency, protect the environment and boost the productivity of its inhabitants. They also try to converse land, energy, water, and other resources to the maximum extent. To achieve its goals, the development of a green building requires the cooperation of architects, engineers, stakeholders, and consultants.

Ms. Soundarya Pandit(SY)





## Piezoelectric Road.

This project aims to generate electricity and decrease the consumption of fossil fuels and conserve the electricity for further use. In modern world, the technique needs amount of power for its various operations. These operations require a lot of fossil fuels, to overcome this consumption of power and fuels. In this paper we have presented method to produce pollution free electricity by the technique i.e. piezoelectric effect. This is kind of green solution for power generation. Piezoelectric effect is the ability of a material to generate electric charge by applying mechanical stress. This report assess to commercial status of piezoelectric based techniques in roadway and railways. In this project we try to provide a sufficient energy as it can reduce the damage of pollution caused by power plants. Even when vehicle passing from the road, exerts pressure on the roadways and causes deformation. So to make the use of moving vehicle on road, we can generate power by our project and helps environment and our structures to be last long. This paper present about the piezoelectric sensor that can be implemented beneath the road bed to harvest the electricity from the vibration produced due to the vehicle moving on the road.

Mr. Om Gaikwad (SY)

### Value Addition

- Ø Personality Development Program on Soft Skill Development by Dr. Vishal Nikam&Mr. Sunil Kadam on 26/02/2023
- Ø Industry expert lecture on Structural Audit & Budget. By Mr.Pawar D.A. on 08/04/2023
- Ø Industry expert lecture on Various Instruments Used In Surveying by Mr.Jagtap S. V. on 18/03/2023
- Ø Industry expert lecture on Construction MaterialsbyMr.DeshmukhVaibhav on 10/04/2023
- Ø Industry Visit arranged in Bio Medical Waste Management on 27/03/2023
- Ø Industry Visit arranged in Solid Waste Management on 01/04/2023
- Ø Our MOU Partners:
  1. Shri Maruti Construction
  2. Gadekar Enterprises
  3. Yash Construction
  4. Sanskruti Construction

### ESULTS:- SUMMER 2022-23

#### Third Year

Sr. No	Name of Student	Photo	Marks %
1	GAIKWAD O. S.		91.12
2	BOMEN S. A.		88.00
3	GAUDA A. V.		85.00

#### First Year

Sr. No	Name of Student	Photo	Marks %
1	MANE POOJA P.		85.78
2	KALE SHIVANIS A.		84.42
3	GHADAGE SHAMBHURAJE S.		84.42



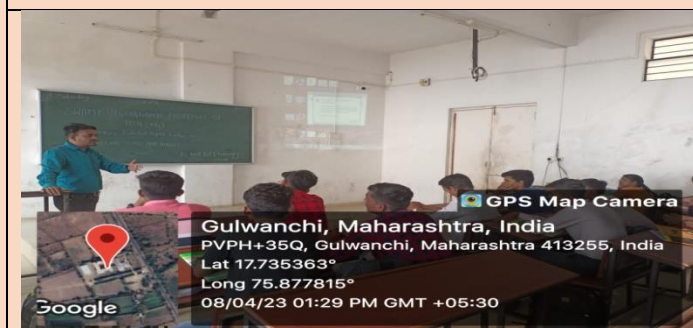
## DEPARTMENTAL EVENTS



Industrial Visit at Bio Medical waste.



State Level Event-VIVEKPOSTEROLIC



Industry Expert Lecture by Mr. Pawar D. A.



FDP on Stress Free Teaching by Dr. PrakashSalunkhe

Dr. BabasahebAmbedkarJayanti Celebration.  
(14<sup>th</sup> April, 2023)National Youth Day Celebration. (12<sup>th</sup> Jan, 2023)

## EDITORIAL

It gives me a great pleasure to present the Third volume of our departmental newsletter to you which gives us the opportunity to put forth the achievements of our Department. In this issue, we have covered different activity carried out at the Department of Civil Engineering. I am thankful to all the faculties & students who have contributed to this newsletter.

Mr. SHAIKH F.U.