



**DEPARTMENT OF MECHANICAL ENGINEERING  
ACADEMIC YEAR 2023-24 (ODD)  
INTERNAL STAFF SEMINAR REPORT**

Date& time : 01.11.2023&12.30 P.M.  
Venue : Department Smart Classroom  
Topic : Seminar on “FRP Composite Materials”  
Resource person : Mr.K. Rajesh Kumar  
Assistant Professor,  
Mechanical Engineering,  
Kings College of Engineering-Punalkulam.

On behalf of the Department of Mechanical Engineering organized an Internal Seminar on “FRP Composite Materials” for faculty members of the Mechanical Department on 01.11.2023 at smart class room. The main objective of the internal seminar is to provide exposure to our faculty members on various research areas in materials and metallurgy.

**The Following Points were Discussed During the Session:**

- Fibre-reinforced polymer (FRP) , also Fibre-reinforced plastic , is a composite material made of a polymer matrix reinforced with fibres. The fibres are usually glass, carbon, or aramid, although other fibres such as paper or wood or asbestos have been sometimes used.
- FRP can be used in a wide range of applications but is commonly used in construction as panels. Used as a panel it can create strong walls and surfaces that are scratch-resistant and able to withstand high impacts. FRP is commonly used in schools, hospitals, recreational facilities and other industrial settings.
- High quality (FRP) products are created using high-quality polymer and fibers that enhance the surface's strength and durability.
- The fibre component of a FRP composite typically contributes the majority of the material's strength. The matrix's job is to contain the fibres and distribute forces among them. For instance, glass fibre, which often comes in the form of woven cloth or fibre mats, is stronger than steel for its weight. When mixed with epoxy resin, the resulting glass fibre composite is light, stiff, and robust.



## Snapshots of the Session

### Chapters Discussed:

- Fiber types, properties and applications.
- Advanced manufacturing techniques.
- Benefits and Limitations.
- Current Research Scopes in FRP composite materials.

### Outcomes:

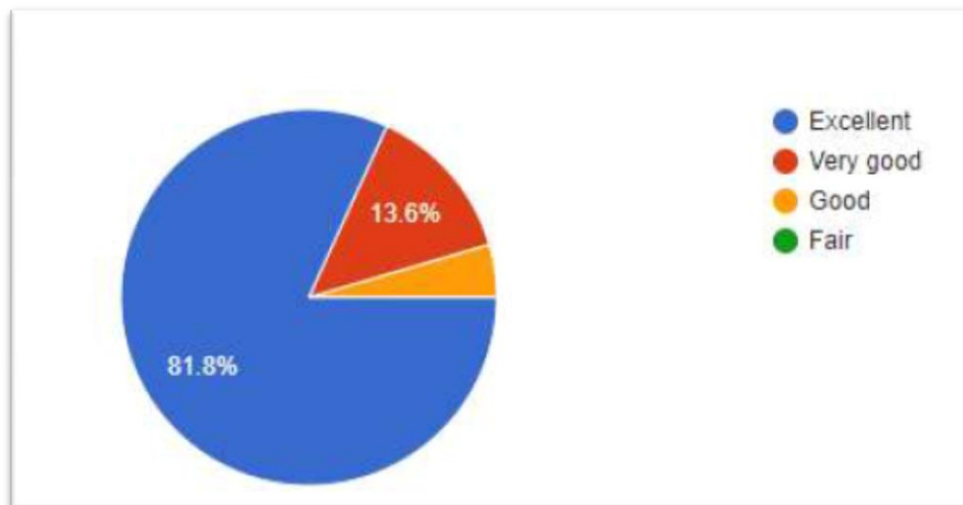
Upon listing of this seminar, the participants can able to

- Understand the various types FRP fabrication techniques.
- Understand the special fiber materials in special applications.
- Get awareness about current research scopes in FRP composites.

## References:

1. Hollaway, L. C. (2010). A review of the present and future utilization of FRP composites in the civil infrastructure with reference to their important in-service properties. *Construction and building materials*, 24(12), 2419-2445.
2. Li, Y. F., Tsai, M. J., Wei, T. F., & Wang, W. C. (2014). A study on wood beams strengthened by FRP composite materials. *Construction and Building Materials*, 62, 118-125.
3. Günaslan, S. E., Karaşin, A., & Öncü, M. E. (2014). Properties of FRP materials for strengthening. *International Journal of Innovative Science, Engineering & Technology*, 1(9), 656-660.
4. Gaurav, A., & Singh, K. K. (2018). Fatigue behavior of FRP composites and CNT-Embedded FRP composites: A review. *Polymer Composites*, 39(6), 1785-1808.
5. Cenna, A. A., & Mathew, P. (2002). Analysis and prediction of laser cutting parameters of fibre reinforced plastics (FRP) composite materials. *International Journal of Machine Tools and Manufacture*, 42(1), 105-113.

## Feedback Analysis:



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