

Composite Material

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Composite Material Latest News

DRDO Chairman recently said that developments in composite materials will play a key role in indigenous development of the strategically significant fifth-generation aircraft, hypersonic missiles and bulletproof jackets, among other things.

About Composite Material

- A composite material is **made up of two or more materials with different chemical and physical properties.**
- A composite material is used to **enhance the properties of its base materials.**
- The materials which form the composite are also called constituents or **constituent materials.**
- The material properties achieved by **purposeful material combinations** can give composites advantages that cannot be achieved by conventional single engineering materials.
- Composite materials **offer a high strength-to-weight ratio, corrosion resistance, durability, design flexibility, thermal and electrical insulation, chemical resistance, and customizable properties,** making them ideal for various industries.

- **Examples** of Composites: **Fiberglass, Carbon Fiber Reinforced Polymer (CFRP), Concrete, Plywood**, etc.
- They are used in a wide range of applications, from **aerospace structures**, to boat hulls to sporting goods.
- For example, composite materials enable us to fly further and **develop more fuel-efficient automobiles (vehicle weight reduction)**, harvest energy more efficiently (**lighter and larger wind turbine blades**), prevent injury (safety equipment like motorcycle helmets), and enjoy recreational activities (sporting equipment).

Composite Material FAQs

Q1. What are the 4 types of composites?

Ans. The four primary categories of composites are polymer matrix composites (PMCs), metal matrix composites (MMCs), ceramic matrix composites (CMCs), and carbon matrix composites (CAMCs).

Q2. What is the strongest type of composite?

Ans. The **strongest composite material** is **Carbon-Carbon (C/C) Composite**, particularly in high-temperature environments.

Q3. What are 5 examples of composite materials?

Ans. Five examples of composite materials are fiberglass, carbon fiber reinforced polymer (CFRP), reinforced concrete, plywood, and Kevlar/epoxy composites.

Source: **IE**

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