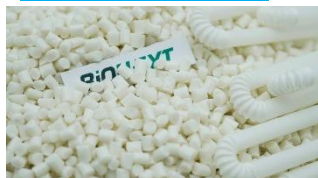


WHAT IS PBAT?



- **PBAT (Polybutylene Adipate Terephthalate)** is a **biodegradable thermoplastic polymer** used as an **eco-friendly substitute** for traditional plastics.
- It is a **copolymer of adipic acid, 1,4-butanediol, and terephthalic acid** and can be processed using **conventional plastic manufacturing methods**.
- PBAT is often blended with **other biopolymers** to enhance its **mechanical and barrier properties**.

Properties of PBAT

- **100% compostable** – breaks down into **water, CO₂, and biomass** under industrial composting conditions within **180 days**.
- **Flexible and tough**, making it ideal for **bags, films, and packaging**.
- It is **moisture-resistant, chemically inert**, and offers **good barrier properties**.

PBAT vs PLA

Feature	PBAT	PLA (Polylactic Acid)
Composition	Copolymer of adipate + terephthalate	Made from lactic acid (corn/sugarcane)
Flexibility	Flexible and tough	Rigid and brittle
Applications	Bags, packaging	Cutlery, electronics packaging
Degradation Rate	Faster composting	Slower degradation
Cost	Lower than PLA, but higher than conventional plastics	Higher than PBAT

SHIRUI LILY FESTIVAL



The 2025 edition of the festival was held after a two-year gap, caused by ethnic violence between the Meitei and Kuki-Zo communities in Manipur.

- The Shirui Lily Festival is a five-day cultural and ecological festival held in the Ukhrul district of Manipur, which is dominated by the Tangkhul Naga tribe.
- The festival celebrates the endemic Shirui Lily (*Lilium mackliniae*), a rare, bluish-pink bell-shaped flower found only in the Shirui Hills, about 18 km from Ukhrul town.
- The flower was discovered in 1946 by English botanist Frank Kingdon-Ward and won a merit prize at the 1948 Royal Horticultural Society (RHS) show in London.
- In 1989, the Manipur government declared Shirui Lily as the State Flower, but it is now endangered due to tourism pressures and the invasion of an exotic bamboo species.
- The festival aims to raise awareness about the ecological importance of the flower and promote conservation efforts.

VITAMIN D



- Vitamin D (also referred to as calciferol) is a fat-soluble vitamin that is naturally present in a few foods, added to others, and available as a dietary supplement.
- It is also produced endogenously when ultraviolet (UV) rays from sunlight strike the skin and trigger vitamin D synthesis.
 - During periods of sunlight, vitamin D is stored in fat and then released when sunlight is not available.

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- **Very few foods have vitamin D naturally.** The foods with the most are **fatty fish** (like salmon and tuna), **liver, mushrooms, eggs, and fish oils.**
 - Kids don't eat these foods a lot. That's why **food companies often "fortify"** milk, yogurt, baby formula, juice, cereal, and other foods **with added vitamin D.**
- The **amount** of vitamin D you **need each day depends on your age.**

Why is vitamin D so important?

- Vitamin D **promotes calcium absorption** and helps **maintain adequate levels of calcium and phosphorus in the blood**, which is **necessary for healthy bones and teeth.**
- Without sufficient vitamin D, bones can become thin, brittle, or misshapen.
- **Vitamin D Deficiency:**
 - A lack of vitamin D can **lead to bone diseases** such as **osteoporosis or rickets.** **Osteoporosis** is a disease in which your **bones become weak** and are **likely to fracture (break).**
 - With chronic and/or severe vitamin D deficiency, a **decline in calcium and phosphorus absorption by your intestines** leads to **hypocalcemia** (low calcium levels in your blood).
 - This **leads to secondary hyperparathyroidism** (overactive parathyroid glands attempting to keep blood calcium levels normal).
 - Both hypocalcemia and hyperparathyroidism, if severe, can cause symptoms, including muscle weakness and cramps, fatigue, and depression.
 - **Anyone can have vitamin D deficiency**, including infants, children and adults.
 - Vitamin D deficiency may be **more common in people with higher skin melanin content** (darker skin) and **who wear clothing with extensive skin coverage**, particularly in Middle Eastern countries.
 - **Vitamin D supplements** are commonly **used to treat** and prevent vitamin D deficiency.

WHAT IS OPERATION OLIVIA?



- It is an important initiative of the **Indian Coast Guard (ICG)** conducted **annually from November to May**.
- It is aimed at **ensuring safe nesting grounds for Olive Ridley turtles**, particularly at **Gahirmatha Beach** and surrounding coastal areas of Odisha.
- The operation involves **round-the-clock patrolling, aerial surveillance**, and **close coordination with local stakeholders** to protect the turtles during their breeding season.
- Coast Guard has actively collaborated with coastal communities, **promoting the use of Turtle Excluder Devices (TEDs) in fishing nets** and signing Memorandums of Understanding (MoUs) with NGOs to support conservation education and sustainable fishing practices.

Key Facts about Olive Ridley Turtles:

- This species is **among the smallest, but the most widespread and abundant of the world's sea turtles**.
- It gets its **name from the olive green color of its heart-shaped shell**.
- These turtles, along with their cousin the Kemp's ridley turtle, are best known for their **unique mass nesting called Arribada**, where thousands of females come together on the same beach to lay eggs.
- **Distribution:**
 - They are found throughout the world, primarily in the **tropical regions of the Pacific, Indian, and Atlantic oceans**.
 - **Odisha's Gahirmatha Marine Sanctuary** is known as the **world's largest rookery** (a colony of breeding animals) of sea turtles.

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GOVT OPENS SPECTRUM FOR FAST WIFI: BIG BOOST FOR TECH INDUSTRY

The Indian government has proposed licence-free use of a part of the 6GHz spectrum, enabling faster WiFi and better connectivity.

Wireless Connectivity

- Wireless devices exchange data via radio waves, which are defined by wavelength and frequency.
- Frequency impacts: Data capacity; Speed of transmission; Range.
- **Understanding the Frequency Bands: 2.4 GHz, 5 GHz, and 6 GHz**
 - These bands represent specific parts of the radio frequency (RF) spectrum allocated for unlicensed wireless use.
 - 2.4 GHz: Longer range, slower speed, more interference
 - 5 GHz: Faster speed, shorter range, more congestion
 - 6 GHz: Fastest speed, least congestion, shorter range, exclusive to latest devices

The 6 GHz Spectrum: The New Frontier for Wi-Fi

- Offers 1200 MHz of spectrum—more than double that of 2.4 GHz and 5 GHz combined.
- Supports seven 160 MHz channels for high-speed data transmission.
- Accessible only via Wi-Fi 6E devices.
- **Use Cases of 6 GHz Band**
 - Ideal for real-time applications like gaming, 4K/8K streaming, video conferencing, and cloud computing
 - Reduces network clutter by avoiding interference from older devices
 - Enables multi-device homes with smooth performance

India Opens Part of 6GHz Spectrum for Licence-Free WiFi Use

- The Indian government has proposed making a portion of the 6GHz spectrum (5925–6425 MHz) licence-free, enabling faster WiFi.

India's 6GHz WiFi Move – A Boost for Tech, But Not Without Concerns

- **Licence-Free WiFi Access in 6GHz Band**
 - As per the proposal, no authorisation or frequency assignment will be needed for operating low-power indoor and very low-power outdoor wireless systems, such as WiFi networks, in the 5925–6425 MHz frequency band.
- **A Boost for Next-Gen WiFi and IoT**
 - Tech companies believe the move will support the adoption of next-generation WiFi technologies like WiFi 6E and WiFi 7.
 - These technologies offer significantly faster speeds and are crucial for the expansion of the Internet of Things (IoT).
- **Sony May Reconsider PS5 Pro Launch in India**
 - Due to earlier regulatory uncertainty over the 6GHz band, Sony had excluded India from the PS5 Pro launch.
 - With the new draft rules, the company may now include India in its launch plans.
- **Industry Says Partial Spectrum Not Enough**
 - Despite welcoming the move, industry experts emphasized that just a fraction of the 6GHz band is insufficient to unlock the full potential of WiFi 6E and 7.
 - The Forum urges the government to free up more of the band to fully support India's digital infrastructure goals.
- **The Bigger Picture**
 - While the draft policy marks a major step for tech firms and connectivity, stakeholders stress that broader de-licensing is necessary for long-term digital growth and innovation.
- **Conclusion: Diverse Regulatory Paths**
 - While the global trend supports expanding WiFi access through the 6GHz band, approaches vary significantly, reflecting different national priorities and technological strategies.

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SUPREME COURT REINSTATES THREE-YEAR PRACTICE RULE FOR JUDICIAL SERVICES

- In a significant shift in judicial recruitment policy, the **Supreme Court of India** has **reinstated the requirement of three years of minimum legal practice for aspirants seeking entry into the subordinate judiciary.**
- The verdict, delivered by a bench led by **Chief Justice B.R. Gavai**, aims to enhance the efficiency and competence of judicial officers through practical legal exposure before assuming judicial responsibilities.

Background and History of the Rule

- The idea of requiring prior legal practice for judicial services dates back to the **14th Law Commission Report (1958)**, which proposed 3-5 years of courtroom experience for civil judge aspirants.
- However, in 2002, this rule was scrapped following the recommendations of the **Justice Shetty Commission**.
- The rationale was that the best talent was not joining the judiciary, as fresh graduates preferred more lucrative private sector roles after gaining experience.
- The court had then endorsed that a robust training mechanism could make up for the lack of courtroom experience.
- **Key directives included:**
 - A **three-year minimum practice** to be certified by a senior advocate (10+ years).
 - Law clerk experience will also be considered valid.
 - **Mandatory one-year training** before posting.

Criticisms and Concerns Raised

- Despite the court's emphasis on experiential learning, critics argue that the move could restrict access to judicial careers, especially for students from economically disadvantaged backgrounds and women.

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- **Key Concerns:**

- **Economic Barrier:** Junior lawyers in India are often underpaid. With stipends ranging from Rs. 15,000 to Rs. 20,000/month, many law graduates, especially from rural or marginalised communities, may not be able to afford three years of low-income work.
- **Gender Impact:** The **India Justice Report 2022** noted that women comprise 38% of district judiciary judges. The new rule could deter female aspirants, especially those taking career breaks due to maternity.
- **Lack of Exam Regularity:** Judicial exams are not held at regular intervals in many states. Even after fulfilling the practice requirement, aspirants may have to wait years for the next vacancy notification.
- **Deterrent to Top Talent:** Students from premier law schools often pursue corporate law due to better pay and career prospects. A lengthy, uncertain pathway may further dissuade top performers from considering judicial careers.

MODAL SHIFT IN TRANSPORT - CHANGING DYNAMICS OF TRANSPORTATION IN INDIA AND THE WORLD

- Traditional transport choices are driven by convenience, comfort, and cost.
- But, there is a **push for a “modal shift” globally** - shifting from road and air transport to railways due to environmental and economic concerns.

Global Trends and Policy Measures:

- **Declining rail use (2007–2021):**
 - Freight share by rail reduced from 51% to 40% globally.
 - Passenger share reduced from 12% to 8%.
 - **Main reason:** Growth of road transport, especially in India and China.
- **Potential environmental impact:**
 - If current trends continue, there will be a **16% rise in GHG emissions** in lower-income countries.

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- Switching to rail could prevent 1.8 billion tonnes of carbon emissions by 2050.
- **International best practices:**
 - **European Union:** Goal - Shift 30% of road freight to rail/ships by 2030, and over 50% by 2050.
 - **China:** Implementing freight shift policies, resulting in reduced road traffic and cleaner environment.

India's Transport Challenge and Opportunities:

- **Current scenario:**
 - India has one of the world's largest railway networks.
 - Yet, road preference is increasing due to better infrastructure and convenience.
- **Government initiatives:**
 - **National Rail Plan (NRP):** Target is to increase freight modal share to 45% by 2030.
 - Investment in Dedicated Freight Corridors (DFCs).
 - Need for a similar passenger rail strategy.
- **Urban transport models:**
 - **Delhi Metro (2021):** It removed 5 lakh vehicles from roads daily, reducing emissions by 23.82g CO₂/km.
 - **Mumbai:** Metro and monorail share is projected to rise from 2% to 36%, reducing motor vehicle share from 35% to 24%.

Conclusion:

- **Modal shift to rail is vital for sustainable development** India has the potential to lead globally by investing in eco-friendly transport.
 - With the right planning, India can **balance development with climate responsibility**, setting a **precedent for the world**.
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