

SANSKRITI IAS DAILY CURRENT AFFAIRS

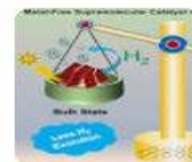
10-09-2026

Perylene Diimide

DD News

Self-assembling organic molecules offer new route to green hydrogen production

Scientists at the Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru, have developed a metal-free organic material that could...

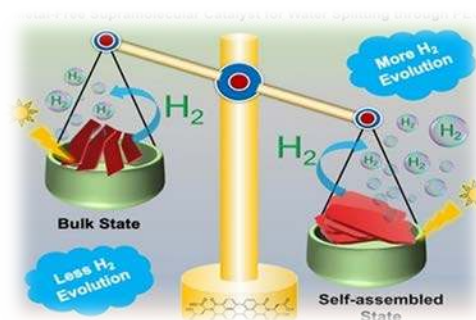


Why in News

- Researchers integrated **aspartic acid** with the light-absorbing organic molecule **perylene diimide (PDI)** and enabled spontaneous **supramolecular self-assembly**.

Chemical Characteristics

- **Perylene diimide** is a derivative of **perylene** and was initially developed as an organic dye.
- PDI exhibits strong light absorption, high **fluorescence quantum yield**, high electron affinity and good charge-carrier mobility.



Technological Applications

- PDI derivatives are potential materials for **photovoltaics and organic electronics**.
- They function as **n-type organic semiconductors** and have applications in solar cells, photovoltaic devices and dye lasers.

Navier–Stokes Equations

The Economist

OpenAI's apparent maths breakthrough raises profound questions

OpenAI claims its artificial intelligence agents solved the Navier-Stokes existence and smoothness problem, one of seven unsolved Millennium...



Why in News

- Recent claims have highlighted the use of massive computational resources in attempting to solve the **Navier–Stokes equations** problem.

Scientific Basis

- **Navier–Stokes equations** are partial differential equations describing the motion of **viscous fluids**.
- They are named after **Claude-Louis Navier** and **George Gabriel Stokes**.
- They are based on conservation of **mass, momentum and energy** and apply **Newton's second law of motion**.

Applications

- They are used in **weather forecasting, climate modelling, ocean circulation, aerodynamics, hydraulics and combustion**.
- They also have applications in **chemical engineering and biomedical engineering**, including modelling blood flow.

Mathematical Challenge

- The equations are difficult because they are **nonlinear and coupled**.
- The question of whether smooth, physically reasonable solutions in **three dimensions** exist for all time remains unresolved.

Millennium Problem

- In **2000**, the global existence and smoothness problem for 3D Navier–Stokes equations were designated one of the **seven Millennium Prize Problems** by the **Clay Mathematics Institute**.
- Each Millennium Prize Problem carries a **US\$1 million prize**.

International Atomic Energy Agency

TSO The Sunday Guardian

US-Israel-Iran War Latest Live News: Explosions Heard Near Qeshm Island, Minab & Sirik as Iranian MP Calls IAEA Nuclear Resolution Symbolic Amid Escalating Regional...

Qeshm explosion report and a new IAEA resolution deepen the US-Israel-Iran crisis as Tehran rejects nuclear pressure and calls for regional...



Why in News

- The **International Atomic Energy Agency (IAEA)** recently reported Iran to the **UN Security Council** for the first time in two decades.

Institutional Profile

- The **IAEA** is the leading intergovernmental organisation for scientific and technical cooperation in the nuclear field.
- Its origin is associated with U.S. President **Dwight Eisenhower's "Atoms for Peace"** address to the UN General Assembly in **1953**.
- Its Statute was approved in **1956** and entered into force on **29 July 1957**.
- It is an **autonomous organisation within the UN system** and reports to both the **UN General Assembly and UN Security Council**.

Core Functions

- The IAEA promotes the **safe, secure and peaceful use of nuclear technology**.
- It establishes nuclear **safety standards**, provides technical assistance and conducts **verification, monitoring and inspections**.
- Its primary objective is to prevent nuclear energy from being diverted to **weapons purposes**.

Nuclear Non-Proliferation Link

- The IAEA is **not a party to the NPT**, but performs a central **safeguards and verification role** under it.
- Non-nuclear-weapon states under the NPT negotiate **safeguards agreements** with the IAEA.

Governance and Headquarters

- The IAEA has **180 member states** and is headquartered in **Vienna, Austria**.
- Its principal organs include the **General Conference, Board of Governors and Secretariat**.
- The **Board of Governors has 35 members** and performs functions including approval of safeguards agreements and appointment of the Director General.

ORV Sagar Manthan

MI Marine Insight

Indian Navy Launches Advanced Ocean Research Vessel 'ORV Sagar Manthan'

Marking a historic milestone in India's journey toward self-reliance in oceanographic science and maritime technology, the state-of-the-art...



Why in News

- The Union Minister for Earth Sciences launched India's advanced **Ocean Research Vessel (ORV) Sagar Manthan** at **Rishi Bankim Shipyard, Kolkata**.

Institutional and Mission Linkages

- **Sagar Manthan** is an indigenous, all-weather and multidisciplinary ocean research vessel.
- It was designed and constructed by **Garden Reach Shipbuilders & Engineers (GRSE)** for the **National Centre for Polar and Ocean Research (NCPOR)**.
- The vessel has been developed under **Vertical-4: Deep Ocean Survey and Exploration** of the **Deep Ocean Mission (DOM)**.

Scientific Capabilities

- It incorporates **dynamic positioning, multibeam bathymetry, multichannel seismic systems and sub-bottom profiling**.
- It also carries facilities for **ROVs, AUVs, weather radar, drop keels and CTD profiling**.

Strategic Research Role

- The vessel can operate in extreme environments, including the **Southern Ocean**, with a projected service life of **30 years**.
- It will support exploration of **Indian Ocean mid-oceanic ridges** for multi-metal **hydrothermal sulphide mineralisation**.
- It will also establish **environmental baselines** and collect **upper-air and oceanographic data**.

Certification

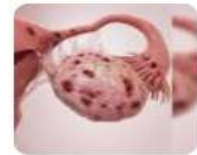
- The vessel complies with international regulatory standards through dual-class certification by the **Indian Register of Shipping (IRS)** and **American Bureau of Shipping (ABS)**.

Endometriosis

TOI The Times of India

First Indian genome-wide study sheds light on genetic risk of endometriosis

ICMR-led Indian genome-wide study finds 21 genetic regions linked to endometriosis, including a strong signal near LINC00415/SHISA2,...

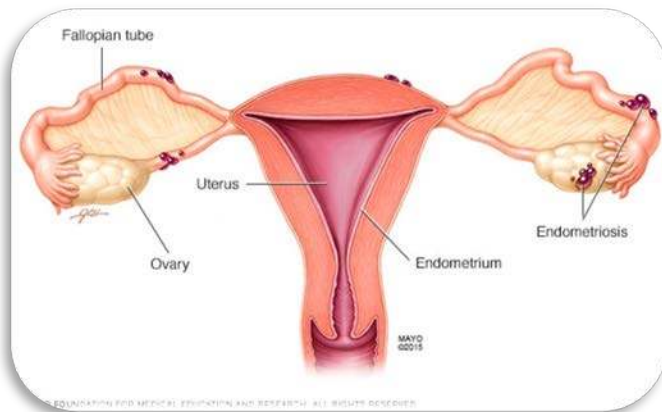


Why in News

- A study by **ICMR–National Institute for Research on Women’s Health (ICMR-NIRWoH), Mumbai**, found that **genetic factors** contribute to a woman’s risk of developing endometriosis.

Disease Profile

- **Endometriosis** is a chronic condition in which tissue similar to the lining of the uterus grows outside the uterus.
- It can occur from **menarche to menopause** and can affect physical, psychological and social well-being.
- Its development involves **genetic, hormonal, environmental and lifestyle factors**.



Symptoms and Associated Conditions

- Major symptoms include **severe menstrual pain, chronic pelvic pain, painful intercourse, fatigue and infertility**.
- It is also associated with **anxiety, depression and reduced quality of life**.
- People with endometriosis have higher rates of some immune-mediated conditions, including **lupus, multiple sclerosis and inflammatory bowel disease**.

Prevalence

- Endometriosis affects about **10% of women of reproductive age globally**.
- India is estimated to account for around **50 million cases**, representing nearly **18% of the global burden**.

Wildlife Crime Control Bureau

TNIE The New Indian Express

Black SUV's midnight trail scent in Balasore's orangutan probe

The vehicle was captured by a CCTV camera of a shop in the forest fringe village of Badapai, while local residents also reported seeing it...



Why in News

- The **Ministry of Environment, Forest and Climate Change (MoEF&CC)** constituted a four-member **WCCB inquiry team** to investigate suspected international organised-crime links involving an orangutan found in **Balasore, Odisha**.

Legal and Institutional Status

- The **Wildlife Crime Control Bureau (WCCB)** is a statutory body established to combat **organised wildlife crime**.
- It was constituted under **Section 38Y of the Wild Life (Protection) Act, 1972**, and became operational in **2008**.
- It functions under the **MoEF&CC** and has its headquarters in **New Delhi**.

Organisational Network

- WCCB is a multidisciplinary body involving officials from **Police, Forest, Customs and intelligence/enforcement agencies**.
- It has regional offices at **Delhi, Kolkata, Mumbai, Chennai and Bhopal**.

Core Functions

- WCCB collects and disseminates intelligence on **organised wildlife crime** and maintains a centralised wildlife-crime database.
- It coordinates enforcement among **Central and State authorities** and supports investigations and prosecutions.
- It advises the Government on wildlife crimes having **national and international ramifications**.

International Cooperation

- WCCB assists India in implementing **CITES** obligations and maintains links with the **INTERPOL Environmental Crime Programme** and **World Customs Organization**.
- Its **Wildlife Crime Database Management System** supports real-time analysis of wildlife-crime trends.
- It has supported operations including **Operation SAVE KURMA, THUNDERBIRD, WILDNET, LESKNOW and BIRBIL**.

Foot-and-Mouth Disease

 The Indian Express

A foot-and-mouth disease strain is back after 60 years: Why SAT-1 is raising alarms

After around 60 years, a serotype of foot-and-mouth disease (FMD) is being reported again in parts of Europe and the Middle East.



Why in News

- After around **60 years**, a serotype of **Foot-and-Mouth Disease (FMD)** has reportedly reappeared in parts of **Europe and the Middle East**.

Disease Profile

- **FMD** is a highly contagious **viral disease** affecting cloven-hoofed animals such as **cattle, buffaloes, sheep and goats**.
- It is caused by an **Aphthovirus** belonging to the family **Picornaviridae**.
- Typical symptoms include **fever and blister-like lesions** on the tongue, lips, mouth, teats and between the hooves.

Economic and Livestock Impact

- FMD causes major **production losses** and can weaken affected animals.
- Mortality is generally low in adult animals but can be high among young animals because of **myocarditis**.
- It is classified as a **Transboundary Animal Disease (TAD)** and can disrupt livestock production and international trade.

Transmission

- The virus spreads through **infected animals, contaminated buildings and vehicles, feed, water, milk, equipment, clothing and footwear.**
- Raw or improperly cooked infected meat and contaminated animal products can also contribute to transmission.

Prevention

- **Vaccination** is identified in the source as the only effective preventive measure against FMD.

72nd National Film Awards

DD News

President to present 72nd National Film Awards at Ekta Nagar on September 22

The 72nd National Film Awards will be presented by the President of India at Ekta Nagar (Kevadia), Gujarat, on September 22.



Why in News

- The **72nd National Film Awards** will be presented in **September 2026** at **Ekta Nagar, Gujarat**, with **President Droupadi Murmu** scheduled to confer the awards.

Key Facts

- It will be the **first National Film Awards ceremony outside Delhi.**
- The first ceremony was held in **1954** at **Vigyan Bhawan, Delhi.**
- Winners are selected by a **national jury appointed by the Government of India.**
- Since **2022**, the awards have been administered by the **National Film Development Corporation (NFDC).**

Major Awardees

Award Category	Winner	Film
Best Feature Film	<i>Article 370</i>	<i>Article 370</i>
Best Actress	Yami Gautam	<i>Article 370</i>
Best Actor	Mammootty	<i>Bramayugam</i>

Best Actor	Kartik Aaryan	<i>Chandu Champion</i>
Best Debut Director	Randeep Hooda	<i>Swatantrya Veer Savarkar</i>
Best Popular Film	<i>Kalki 2898 AD</i>	<i>Kalki 2898 AD</i>
Best Film Promoting National Social and Environmental Values	<i>Captain Miller</i>	<i>Captain Miller</i>

International Day for Elimination of Child, Early and Forced Marriage

TH The Hindu

India co-sponsors UNGA resolution to declare November 27 day against child marriage

India has co-sponsored a resolution in the UN General Assembly (UNGA) proclaiming November 27 every year as the International Day for the...



Why in News

- India has co-sponsored a **UN General Assembly resolution** declaring **27 November** as the **International Day for the Elimination of Child, Early and Forced Marriage**.

Key Global Facts

- The day will be observed annually to promote the **protection and empowerment of children and girls**.
- Child marriage adversely affects **education, health, autonomy and socio-economic opportunities**.

Significance

- The initiative strengthens global efforts towards **gender equality, child protection and human rights**.

Indian Legal Framework

- The **Prohibition of Child Marriage Act, 2006** prohibits child marriage and provides legal protection.
- Under the Act, a **female below 18 years** and a **male below 21 years** is considered a child.

Other Important News of the day

Environment

Resplendent Shrub Frog

TH The Hindu

Eravikulam National Park has emerged as a thriving habitat for the endangered Resplendent Shrub Frog

Eravikulam National Park thrives as a habitat for the endangered Resplendent Shrub Frog, showcasing successful conservation efforts in...



Why in News

- The **Resplendent Shrub Frog** is notable for its extremely restricted distribution in the high-altitude ecosystems of Kerala.

Taxonomy and Distribution

- The frog belongs to the family **Rhacophoridae**.
- It is endemic to the high-altitude **shola-grassland ecosystems of the Anamudi region** in **Eravikulam National Park, Kerala**.
- It measures only around **2–3 cm** and is a ground-dwelling, nocturnal species.

Unique Biological Features

- It exhibits pronounced **crawling behaviour**, distinguishing it from many other species of its genus.
- It undergoes **direct development**, meaning it does not pass through a free-swimming tadpole stage.
- Its conservation status is **Critically Endangered** according to the **IUCN Red List**.

Eravikulam National Park

- **Eravikulam National Park** is located in the **Western Ghats of Kerala** and is a major habitat of the endangered **Nilgiri Tahr**.
- It is famous for **Neelakurinji**, which is known for blooming once every **12 years**.

	➤ The park contains grasslands, shrublands and shola forests, generally at elevations above 2,000 metres. ➤ Anamudi Peak (2,695 m), the highest peak in South India, is located within the park.
Defence	INS Mysore  Defence.in  <u>INS Mysore Docks in Malaysia to Strengthen Maritime Cooperation During Exercise Samudra Laksamana</u> Strengthening maritime cooperation and enhancing interoperability, Indian Naval Ship (INS) Mysore arrived on Wednesday at Lumut Naval Base... Why in News ➤ INS Mysore arrived at Lumut Naval Base, Malaysia, to participate in the bilateral naval exercise Samudra Laksamana. Naval Profile ➤ INS Mysore (D60) is a Delhi-class guided missile destroyer of the Indian Navy. ➤ It was built by Mazagon Dock Limited, Mumbai, and commissioned on 2 June 1999. ➤ It is designed for air defence, anti-surface warfare, anti-submarine warfare and fleet escort missions. Key Capabilities ➤ The vessel has a displacement of about 6,835 tonnes, a maximum speed of 32 knots and a range of approximately 5,000 miles. ➤ It carries advanced radar, communication and sensor systems, including a hull-mounted variable-depth sonar. ➤ Its weapons include surface-to-surface missiles, surface-to-air missiles, a 100-mm gun, AK-630 CIWS, anti-submarine rocket launchers and torpedoes. Exercise Samudra Laksamana ➤ Samudra Laksamana is a bilateral naval exercise between the Indian Navy and Royal Malaysian Navy (RMN).

	➤ The exercise seeks to strengthen maritime cooperation and enhance interoperability. ➤ The 2026 edition includes INS Mysore, KD Lekir and KD Gagah Samudera.
Science and Technology	Narcolepsy  Stanford Report <u>Emmanuel Mignot wins Lasker Award for narcolepsy research</u> Through genetic and immunological studies, the Stanford Medicine sleep researcher found that narcolepsy stems from a deficiency of orexin in... Why in News ➤ Two researchers who made groundbreaking contributions to understanding narcolepsy recently received a prestigious science award. Clinical Features ➤ Narcolepsy is a lifelong sleep disorder characterised by excessive daytime sleepiness and sudden sleep attacks. ➤ Cataplexy refers to sudden muscle weakness, often triggered by strong emotions. ➤ Other symptoms include hallucinations, sleep paralysis, automatic behaviour and disturbed nighttime sleep. Types and Causes ➤ Type 1 narcolepsy is associated with cataplexy and/or very low levels of hypocretin (orexin). ➤ Type 2 narcolepsy causes excessive daytime sleepiness without cataplexy.

- **Secondary narcolepsy** may result from brain injury, brain lesions or other medical or genetic disorders.
- The exact cause is unknown, but **autoimmune reactions and genetic factors** are suspected.

Key Biological Linkages

- **Hypocretin/orexin** is a brain chemical involved in maintaining wakefulness and regulating **REM sleep**.
- Exposure to **H1N1 influenza** has also been linked with narcolepsy.
- There is currently **no cure**, but treatment can help manage symptoms.

Uttar Pradesh in News

Chyavan Rishi Ashram, Kannauj

 Dainik Bhaskar

कन्नौज में च्यवन ऋषि आश्रम का पर्यटन विकास: 81.35 लाख मंजूर; पहली किस्त के 61 लाख जारी, मुख्यमंत्री पर्यटन ...

Kannauj Chyavan Rishi Ashram tourism development project latest updates. Follow Dainik Bhaskar for latest news. कन्नौज।



Why in News

- The **Uttar Pradesh Tourism Department** approved **₹81.35 lakh** for developing **Chyavan Rishi Ashram, Kannauj**, under the **Chief Minister Tourism Development Scheme**.

Location and Significance

- The ashram is located in **Chhibramau Assembly constituency, Kannauj**.
- It is associated with **Maharshi Chyawan**, traditionally linked with **Ayurvedic knowledge and Chyawanprash**.

Development Framework

- ₹61 lakh has been released as the first instalment.
- UPSTDC will undertake the development works.

Kannauj Tourism

- Kannauj is known as the “Perfume City”.
- Other attractions include Lakh Bahosi Bird Sanctuary, Kannauj Archaeological Museum, Mehndi Ghat and Mata Annapurna Temple.