

## ● POLITY

## ● ECONOMICS

## ● TECHNOLOGY

## ● ECOLOGY

## SOCIAL JUSTICE

## UJJWALA BENEFICIARIES' LPG SUBSIDY INCREASED TO ₹300

**CONTEXT:** Union Cabinet raises Ujjwala scheme LPG cylinder subsidy to ₹300, reducing the cost for 9.6 crore families.

**BACKGROUND:** The Union Cabinet has increased the subsidy for LPG cylinders in the Ujjwala scheme, raising it to ₹300 from ₹200. This will reduce the cost of a 14.2-kg cylinder to ₹603, benefiting 9.6 crore families before upcoming Assembly elections.

## PRADHAN MANTRI UJJWALA YOJANA

**Financial Support:**

The scheme offers financial assistance for LPG connection setup costs, making clean cooking fuels more accessible to those who were previously reliant on biomass and kerosene.

**Objective:**

Pradhan Mantri Ujjwala Yojana is a government initiative aimed at providing clean cooking fuel to women from economically disadvantaged households in India.

**Coverage:**

Launched in 2016, PMUY has reached millions of beneficiaries across India, helping them switch to cleaner and safer cooking methods.

**Significance:**

PMUY promotes women's health and empowerment by offering free LPG (liquefied petroleum gas) connections, reducing indoor air pollution, and saving time spent on gathering traditional fuels.

**Implementing Ministry:**

The program falls under the Ministry of Petroleum and Natural Gas, Government of India.

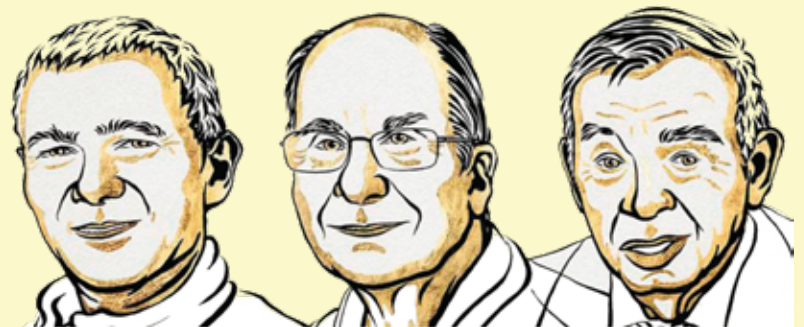


## SCIENCE AND TECHNOLOGY

## 'QUANTUM DOTS' TRIO AWARDED NOBEL IN CHEMISTRY

**CONTEXT:** 2023 Nobel Prize in Chemistry awarded for quantum dots' applications in LED screens, quantum computers, and more.

**HIGHLIGHTS:** Quantum dots, ultra-small crystals, exhibit size-dependent color-changing properties due to electron energy level transitions. Early attempts to synthesize them in the 1980s faced quality issues. In 1993, Dr. Bawendi's team successfully created high-quality quantum dots by injecting a compound into a solvent, offering promise for various applications.



The trailblazers: Moungi Bawendi, Louis Brus, and Alexei Ekimov

## Quantum dots (QDs)

Quantum dots (QDs) are nanoscale semiconductor crystals with unique optical and electronic properties, emitting colorful light when exposed to UV light.

**Applications:** QDs find use in composites, solar cells, fluorescent biological labeling, displays, lighting, and medical imaging due to their tunable emission spectra.

**Significance:** QDs enable precise, versatile labeling in biological research, enhance the efficiency of solar cells, and improve the color quality of displays and lighting.

**Future:** QDs hold potential for advancements in quantum computing, highly efficient LEDs, and targeted drug delivery systems due to their customizable properties.

**Safety Concerns:** Despite their potential, safety and environmental impact concerns arise from the use of certain heavy metal-containing QDs, prompting research into alternative, safer materials.

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## SCIENCE AND TECHNOLOGY

## NOBEL PRIZE HONORS METHODS MEASURING ELECTRON CHANGES

**CONTEXT:** 2023 Nobel Prize in Physics awarded for developing tools to study rapid electron changes in matter.

**BACKGROUND:** Anne L'Huillier, Pierre Agostini, and Ferenc Krausz have been awarded the 2023 Nobel Prize in Physics for developing tools to study ultra-fast processes in attosecond increments ( $10^{-18}$  seconds). Dr. L'Huillier's work on infrared beams in noble gases uncovered wave overtones and their relationship with the original wave's frequency, a significant milestone in quantum mechanics.

**HIGHLIGHTS:**

Attosecond physics, demonstrated by Dr. Agostini and Dr. Krausz in 2001, allows for the manipulation of light pulses in extremely short durations, enabling the study of electron dynamics at an atomic level.

While the immediate applications of attosecond physics may not be apparent, it holds the potential to revolutionize fields like biochemistry, diagnostics, superconductivity, and manufacturing by uncovering previously unknown phenomena that occur in attoseconds.

The value of scientific discoveries, such as attosecond physics, often emerges over time, as they can lead to advancements and breakthroughs in related areas and make previously challenging tasks easier, even if their practical applications are not immediately obvious.

**Attosecond physics**

Attosecond physics is the study of ultra-short time intervals, where one attosecond is a billionth of a billionth of a second ( $10^{-18}$  seconds).

- **Facts:** It involves generating attosecond pulses of extreme ultraviolet light using lasers, enabling observation of electron motion at atomic and subatomic scales.
- **Applications:** Attosecond physics has applications in understanding and controlling electron dynamics in chemical reactions, advancing ultrafast imaging, and enhancing electronics.
- **Significance:** It allows scientists to investigate fundamental processes at the quantum level, offering insights into electron behavior and enabling the development of faster and more efficient technologies.
- **Future:** Attosecond physics holds promise for breakthroughs in fields like materials science, electronics, and even potential applications in quantum computing and communication.

## ECOLOGY AND ENVIRONMENT

## TRACKING CARBON THROUGH AN ACCOUNTING SYSTEM

**CONTEXT:** The climate 'polycrisis': Interconnected crises from climate change impacting multiple sectors and domains, as coined by Adam Tooze.

**HIGHLIGHTS:** The climate 'polycrisis,' a concept popularized by Adam Tooze, denotes the multifaceted and interlinked crises stemming from climate change. It encompasses physical changes like rising temperatures and extreme weather, along with socio-economic and political challenges. India illustrates how diverse sectors like energy, health, migration, and food production are interconnected and impacted by climate change.

**RECOGNISING THE COMPLEXITY AND INTERCONNECTEDNESS**

- **Climate Polycrisis Basics:** Climate polycrisis refers to the multifaceted and interconnected nature of the climate crisis, highlighting its complexity and global reach.
- **Need for Holistic Approach:** Recognizes the importance of adopting a holistic approach that considers diverse stakeholder perspectives, emphasizing resilience, equity, and justice.
- **Unintended Consequences:** Emphasizes that addressing climate change sector by sector can lead to unexpected consequences due to the interconnectedness of the crisis.
- **Deep Transformation:** Calls for a profound transformation towards a new economy that prioritizes environmental sensitivity, akin to creating a "carbon infrastructure."
- **Measurement and Accounting:** Stresses the significance of measuring and accounting for carbon emissions at all levels, from individuals to nations, and building carbon balance sheets.
- **National Carbon Accounting (NCA):** Proposes a national carbon accounting system to bring the entire nation under a unified carbon accounting framework, enabling the internalization of carbon reduction goals.
- **Future Implications:** Envisions a future where carbon tax returns are filed alongside income tax returns, highlighting the potential for a revolutionary shift in public finance when carbon is valued, accounted for, and taxed.

**CARBON ACCOUNTING**

**Importance of Public Finance:** Public finance is vital for development, funded through taxation. Money accounting helps track financial flows. However, carbon flows lack tracking, hindering progressive carbon taxation and climate action.

**Need for National Carbon Accounting (NCA):** NCA, akin to financial accounting, would mandate individuals and businesses to report carbon emissions and offsets. It makes carbon circulation visible, aids target setting, and drives predictions for emission reduction.

**Future Implications:** NCA could lead to a transformative shift, introducing a carbon GDP alongside economic GDP, encouraging nations to reduce carbon emissions and fostering innovation in technology and collective efforts to combat climate change.



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## ECONOMICS AND DEVELOPMENT

## GOVT. EASES AIRCRAFT RECOVERY RULES

**CONTEXT:** The Centre has notified the protection offered to a corporate debtor from recovery of dues under the Insolvency and Bankruptcy Code 2016 will not cover aircraft, helicopters and engines.

## No cover

Centre limits the scope of the IBC moratorium so that aircraft lessors can take possession of their aircraft from debtors



- The move comes after lessors moved court following NCLT's blanket moratorium backing Go First
- India is a signatory to the Cape Town Convention that lets lessors take possession of leased assets
- The decision, if implemented retrospectively, may stall Go First's insolvency resolution proceedings

The move may impact Go First's insolvency resolution proceedings under which the National Company Law Tribunal had granted it a blanket moratorium in May to shield it from lessors and creditors and also restrained the DGCA from accepting any applications for de-registration of aircraft from any lessors.

Go First had 54 aircraft in its fleet, and lessors of nearly all aircraft had sought de-registration of their assets over pending dues. Following the NCLT's May order granting a blanket moratorium, lessors also approached the Delhi High Court to seek access to their aircraft. The lessors argued that the moratorium was in contravention of the Cape Town Convention and Protocol of 2001, to which India is also a signatory. The Convention states that in the event of a default, the lessor can terminate the agreement and take possession of the leased assets.

Lessors will now have to move NCLT or other Courts and seek deregistration and export of their aircraft. The Indian airlines leasing aircraft may have to pay a premium due to the difficulties encountered by lessors to secure their assets.

## ART AND CULTURE

## A RETELLING OF THE MAHABHARATA THROUGH THE PAINTINGS OF ALLAH BAKSH

**CONTEXT:** The unveiling event for 'The Mahabharata: Mewari Miniature Paintings (1680–1698)' authored by Allah Baksh occurred in New Delhi.

The news article discusses the life and work of Allah Baksh, an artist who found solace in the secluded world of art. Away from the tumultuous times of Aurangzeb and his battles, Allah Baksh dedicated himself to the artistry of the Mahabharata

in the tranquil ambiance of Mewar. Employed by Raja Jai Singh of Udaipur, he delved into the Mahabharata's essence, seeking to capture its depth beyond Krishna's sermon to Arjun.

Despite the admiration for his Mewari miniature style paintings, Allah Baksh remained an enigmatic figure. Curiosity about his identity still persists.



The article also delves into the philosophical aspect of his art, where Baksh's lines were sharp, colors vibrant, and each painting's space radiated with light. These paintings featured diverse elements, from birds and animals to rivers and gods, along with valuable life lessons woven into the artwork.

The relevance of the Mahabharata extended beyond its historical context. It was translated and narrated in various forms during the Mughal era, signifying

its enduring significance. Allah Baksh's contribution to the visual dimension of the Mahabharata coincided with Emperor Aurangzeb's reign, raising questions about the uniqueness of this epic that transcended cultural and historical boundaries.

## MEWARI MINIATURE STYLE PAINTINGS

The Mewar painting school, which emerged in the 17th and 18th centuries, stands as a significant facet of Indian miniature painting. Rooted in the Rajasthani style, it took shape within the



Hindu principality of Mewar, situated in the state of Rajasthan. This artistic tradition is marked by its use of vivid and uncomplicated colors, which resonate directly with the viewer's emotions. What sets the Mewar school apart is its wealth of dated and location-specific paintings, providing a comprehensive view of the evolution of painting in Mewar, surpassing other Rājasthānī schools in this regard. The earliest-known pieces date back to 1605, originating from Chawand, an early capital of the Mewar state, primarily showcasing musical modes (Ragamala). This distinctive and lively style persisted with some variations until around 1680, at which point Mughal influences began to emerge. Among the notable artists of this early phase, Sahibdin stands out.

The Mewar school's legacy continued to flourish well into the 18th century and even extended into the 19th century, yielding a substantial volume of work. During this period, there was a notable shift towards portraiture and depictions of the ruler's life, although religious themes remained popular subjects in the school's repertoire.





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