



TATHASTU
Institute of Civil Services

DAILY CURRENT AFFAIRS



9th January, 2024



S.NO.	TOPIC
1.	RULE OF LAW VS RIGHT TO LIBERTY
2.	AN AMBITIOUS PUSH FOR VALUES, ETHICS IN HIGHER EDUCATION
3.	PRELIMS POINTERS

RULE OF LAW VS RIGHT TO LIBERTY

SOURCE: [IE](#)

TAG: GS Paper II- **Justice, Judiciary, Role of Civil Society, Rights of Women**

WHY IN NEWS?

- The recent **Supreme Court decision striking down** the Gujarat government's move to grant remission to convicts in the **Bilkis Bano** case highlighted the significance of **personal liberty as a fundamental right guaranteed** under **Article 21** of the Constitution.
- **Quoting the late Justice V R Krishna Iyer**, the court emphasized the essence of **the rule of law in "disciplining life"** and ensuring that promises are upheld by actions. It emphasized the need for justice to remain committed and aligned with **the principles of the rule of law**.

BILKIS BANO CASE UPDATES

- **February 28, 2002:** Bilkis and her family fled their home in Randhikpur, Dahod district, amid riots triggered by the Godhra train burning incident.
- **March 3, 2002:** Bilkis, then five months pregnant, was gang-raped, and 14 members of her family were killed by a mob.
- **March 4, 2002:** Bilkis was taken to Limkheda police station; however, the FIR did not initially mention her rape or name the identified perpetrators.
- **April 19, 2004:** The CBI filed a chargesheet against 20 accused, including six police officers and two doctors.
- **August 2004:** The trial was moved from Gujarat to Mumbai after Bilkis faced death threats, and a special judge convicted 11 accused, sentencing them to life imprisonment for murder and rape.
- **April 23, 2019:** The Supreme Court ordered compensation of Rs 50 lakh and directed the government to provide Bilkis with employment and accommodation.
- **August 15, 2022:** Gujarat government granted remission to 11 convicts, including Radheshyam Shah, leading to their release.
- **September 2022:** Bilkis Bano challenged the convicts' premature release in the Supreme Court.
- **January 8, 2024:** The Supreme Court quashed the Gujarat government's decision to grant remission to the 11 convicts, addressing the issue raised by Bilkis Bano.

RULE OF LAW VS RIGHT TO LIBERTY: WHAT THE SUPREME COURT SAID

- The recent **Supreme Court ruling in the Bilkis Bano** case deliberated on **the conflict between personal liberty as a fundamental right and the supremacy of the rule of law**. While recognizing the significance of personal liberty under **Article 21 of the Constitution**, the Court examined whether the rule of law should take precedence over it.
- Emphasizing **the concept of the rule of law, described by John Adams** as a government governed by laws rather than individuals, the Court highlighted its role as a check against executive lawlessness. It ensures that no official can arrest or detain individuals without legislative sanction.
- In this context, the **Court clarified that it intervenes when the State fails in its duties, aiming to uphold the rule of law over any abuse of legal processes**. The abuse could arise from inaction, arbitrary actions to protect offenders, or the failure of authorities to fulfil obligations in accordance with the law. The Court's stance aims to ensure that the rule of law prevails despite any misuse or failure of the legal system.



- The recent Supreme Court decision emphasized the critical role of **the rule of law in upholding equality, as guaranteed by Article 14**. It highlighted that equality before the law would lose its significance if violations weren't subject to judicial scrutiny and enforcement.
- The Court asserted that the judiciary stands as the guardian of the rule of law, a cornerstone of democratic governance.
- In its recent judgment, the **Supreme Court referred to Justice V R Krishna Iyer's words, emphasizing that the rule of law shines when it regulates life and fulfils its promises**. The court highlighted the importance of justice aligning with the rule of law and highlighted the comprehensive concept of justice, not just safeguarding the convict's rights but also considering the interests of victims and the law-abiding society.
- Referring to a previous ruling, the Court emphasized the role of courts in preserving peace and reducing crime. It rejected the plea for protecting the convicts' liberty, stressing that upholding the rule of law is paramount. **The Court ruled that Article 142 of the Constitution cannot be used to allow the convicts to remain out of jail, as doing so would ignore the rule of law and support beneficiaries of null and void orders.**
- In line with the principle of the rule of law and ensuring equal protection **under Article 14, the Court justified the deprivation of liberty for the convicts as they had been erroneously released against the law.**

IMPORTANCE OF THE SC VERDICT

The Supreme Court's verdict on the Bilkis Bano case underscores **the critical balance between the rule of law (Art 14) and personal liberty (Art 21)**.

- **Rule of Law Precedence:** The judgment reaffirms the primacy of the rule of law over individual liberties, emphasizing that adherence to legal processes is paramount. It ensures that legal procedures are followed, preventing misuse or circumvention of justice.
- **Equal Application of Law:** The ruling emphasizes that everyone, regardless of status, should be subject to the law. It underscores the principle that no individual is above the law, reinforcing the essence of a democratic society.
- **Judicial Duty:** The court's decision reflects its responsibility as the guardian of the rule of law. It asserts that the judiciary's role is to preserve the rule of law, irrespective of compassion or sympathy, ensuring that legal pronouncements are upheld.
- **Victim-Centric Justice:** While acknowledging personal liberty as a fundamental right, the verdict prioritizes justice for the victims. It underlines the necessity to balance the rights of the accused with the rights of victims and society at large.
- The Bilkis Bano case serves as a stark illustration of the **challenges around communal violence** and the **struggles in ensuring justice for victims in India**.
- It **sheds light on the crucial necessity to safeguard the rights of women** and **minorities** within the nation. Bilkis Bano's enduring legal pursuit stands as a testament that **perseverance** and **bravery can lead to the attainment of justice**. This case also highlights the significant **role of civil society in pushing for justice and societal transformation**.

MULYA PRAVAH 2.0: AN AMBITIOUS PUSH FOR VALUES, ETHICS IN HIGHER EDUCATION

SOURCE: TH

TAG: GS Paper II- Government Policies & Interventions, Human Resource

GS Paper IV- Ethics and Human Interface, Human Values, Role of Family Society and Educational Institutions in Inculcating Values.

WHY IN NEWS?

The introduction of "Mulya Pravah 2.0" by the University Grants Commission (UGC) as a guideline to promote human values, professional ethics, and a respect for fundamental duties and constitutional values in higher education institutions. It emphasizes the importance of encouraging individuals at all levels to freely express their thoughts and advice.



The guidelines - "Mulya Pravah 2.0: Inculcation of Human Values and Professional Ethics in Higher Education Institutions" have been revised to include key recommendations of the National Education Policy (NEP) announced on 29th, July 2020, including the vision which proposes curriculum and pedagogy of Higher Education Institutions (HEIs).

Why Is There A Need?

- Survey Findings: Highlight unethical practices in organizations, including favouritism in hiring, training, pay, and promotion; sexual harassment; gender discrimination in promotion; inconsistent disciplinary views; lack of confidentiality; gender-based differences in compensation; overlooking non-performance factors in appraisals; vendor arrangements for personal gain; and gender discrimination in recruitment.
- Prevalence in Higher Education: These unethical practices may not be exclusive to higher education institutions but could be widespread among them. No institution can assert that it's free from such malpractices.
- UGC Guideline: The UGC's introduction of the guideline, "Mulya Pravah," aimed at promoting ethics and integrity in higher education institutions.
- Need for Implementation: The notification of guidelines alone might not be sufficient to curb corruption and ethical violations unless backed by sincere efforts. Mere formalities won't bring about substantial change.
- Action Needed: The higher education regulator(s) must demonstrate zero tolerance and act swiftly to eliminate corruption in various processes like admissions, examinations, hiring, and university administration, ensuring the implementation of Mulya Pravah in both letter and spirit.

The Present Education System In India Faces Several Challenges Contributing To Ethical Deterioration:

A. Privatization of Educational Institutes:

- Emergence of low-quality private institutions lacking infrastructure and qualified faculties.
- Teachers hired at low salaries, compromising standards, and lacking job security.

B. Corruption:

- Rampant corruption influencing admission, examination, and hiring processes.
- Bribes, academic fraud, teacher absenteeism, and malpractices in procurement affecting education quality.

C. Teachers' Absenteeism:



- High rates of teacher absenteeism, reported at 25% in India, impacting overall school effectiveness and students' achievements.

D. Political Interference:

- Lack of structured policies in human resource management due to political influence.
- Teachers close to political leaders engage in misconduct and irregularities, diminishing moral commitment.

E. Unethical Malpractices in Higher Education Institutes (HEIs):

- Approval and affiliations without academic scrutiny leading to compromised quality.
- Lack of monitoring in faculty selection, salary discrepancies, corrupt exam practices, and unethical fee structures.

F. Unethical Practices by Teachers and Students:

- Students disregarding college code of conduct, attendance issues, and teachers focusing on private tuitions instead of commitments.
- Ethical concerns regarding internal assessments, teacher negligence in attendance and tests.

MULYA PRAVAH 2.0 GUIDELINE

❖ **Emphasizing Transparency and Ethical Practices:**

- ☛ **Transparency in Administration:** Mulya Pravah 2.0 highlights the need for transparency in decision-making within higher education institutions. It stresses that decisions should be driven by institutional and public interest, devoid of biases.
- ☛ **Abolishing Discriminatory Practices:** The guideline aims to eradicate discriminatory privileges within the institution and urges strict action against corrupt practices.
- ☛ **Encouraging Free Expression:** It emphasizes the importance of fostering an environment where individuals at all levels can freely express thoughts and give advice.
- ☛ **Values and Expectations:** It outlines a set of values and expectations, including integrity, trusteeship, accountability, inclusiveness, respectfulness, and adherence to constitutional values and global citizenship.
- ☛ **Accountability and Ethical Conduct:** Higher education administrators are expected to conduct affairs with accountability, transparency, fairness, honesty, and the highest ethical standards. They must act in the institution's best interest and create a conducive environment for teaching, learning, and research.

❖ **Confidentiality, Teacher Conduct, and Stakeholder Unions:**

- ☛ **Confidentiality vs. Right to Information:** The guideline's emphasis on confidentiality contradicts the right to information, crucial for ensuring accountability. Institutions should voluntarily disclose critical information to promote public scrutiny and deter malpractices.
- ☛ **Transparency Measures:** Mulya Pravah 2.0 should encourage institutions to proactively publish meeting agendas, proceedings, annual reports, and audited accounts to enhance transparency and restore public confidence.
- ☛ **Teacher Conduct:** The guideline expects teachers to act as role models, emphasizing good conduct, dress, speech, and behaviour worth emulating by students, without addressing issues related to teachers' associations.
- ☛ **Unions and Support:** The guideline expects staff and student unions to support administration in development activities but might restrict their ability to raise concerns about their members' rights, potentially hindering collective influence.
- ☛ **Collegiality and Stakeholder Participation:** It highlights the importance of engaging and consulting stakeholders in decision-making within educational institutions, emphasizing a collegial atmosphere for decision-making.
- ☛ **Concerns about Dignified Discourse:** The guideline mandates raising issues in a '**dignified manner**,' lacking clear definitions, potentially allowing authorities to suppress or sideline collective stakeholder voices.



Objectives Of Mulya Pravah 2.0

The objectives to foster human values and professional ethics in HEIs are:

- Reinststate India's rich cultural legacy and human values of which we are the custodians.
- Focus on professional ethics, which help citizens to discern desirable and undesirable actions.
- Re-emphasize constitutional values, universal values, and holistic education to create integrated citizens.
- Lay down broader guidelines of human values and ethics for internal and external stakeholders.
- Suggest operational guidelines for value-based and ethical practices in HEIs leading to the implementation and monitoring of the process of inculcation of human values and ethics.
- Indicate the outcomes of creating a value-based and ethical culture in HEIs. Suggest indicative reinforcement programmes for nurturing human values and ethics in HEIs. 8. Implement the curriculum for inculcating human values and professional ethics (Mulya Pravah 2.0)





TOPIC

DISCRIPTION

EU'S CARBON BORDER TAX

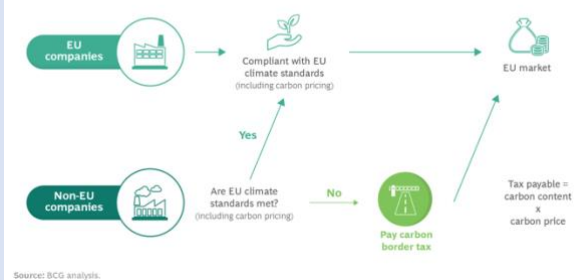
WHY IN NEWS?

- ❖ *The European Union (EU) is implementing the **Carbon Border Adjustment Mechanism (CBAM)** to tax carbon-intensive products entering the EU from 2026.*
- ❖ *It aims to achieve a 55% reduction in greenhouse gas (GHG) emissions by 2030 as part of the European Green Deal.*

WHAT IS CBAM?

- ❖ **Definition:** EU's Carbon Border Adjustment Mechanism (CBAM).
- ❖ **Objective:** Aims to achieve a 55% reduction in GHG emissions by 2030, preventing carbon leakage and ensuring competitiveness.

Exhibit 1 - How the Carbon Border Tax Will Work



CBAM MECHANICS:

- ❖ **Similarity to EU's Emission Trading System (ETS):**
 - ☛ Sets a cap on GHG emissions, with companies buying allowances corresponding to emissions.
- ❖ **Transition Phases:**
 - ☛ **Transitional phase until Dec 2025;** manufacturers report GHG emissions without financial obligations.
 - ☛ **Definitive phase from Jan 2026;** importers surrender **CBAM certificates** annually.

INDIA'S CARBON TRADING MECHANISM:

- ❖ **Introduction:**
 - ☛ India initiates its **Carbon Credit Trading System (CCTS)** in Dec 2022.
- ❖ **Objective:**
 - ☛ Combat climate change, **incentivize emission reductions**, and promote clean energy investments in the private sector.

INDIA'S MECHANISMS - CCTS AND GREEN CREDIT PROGRAMME RULES:

- ❖ **Obligatory CCTS:** Mandatory model under Energy Conservation Act, coupled with voluntary **Green Credit Programme Rules**.
- ❖ **Aim:** Encourage environmentally **proactive actions beyond carbon reduction mandates**.

GLOBAL CONTEXT:

- ❖ **EU's Oversight:**
 - ☛ EU overlooks factors influencing production shifts, like cheap labor and production opportunities in other geographies.
- ❖ **UK's Impact:**
 - ☛ UK's CBAM enforcement by 2027 poses challenges for India's exports, emphasizing the **need for India to formulate** its own carbon taxation measures.



GI TAGS

❖ Adverse Impact on India:

- ☛ India among the **top eight countries adversely affected by CBAM.**
- ☛ **27% of India's iron, steel, and aluminum exports worth \$8.2 billion** went to the EU in 2022.

WHY IN NEWS?

- ❖ *Recently, 17 products from six States/Union Territories were awarded the Geographical Indications (GI) tag.*
- ❖ *GI tag signifies products with specific geographical origin and unique qualities or reputation tied to that origin.*

UNDERSTANDING GEOGRAPHICAL INDICATION (GI) TAGS:

❖ Definition of GI Tag:

- ☛ A **GI tag is a name or sign** used on products to indicate their specific geographical origin.
- ☛ Applies to **agricultural, natural, or manufactured products**, including handicrafts and industrial goods.

❖ Purpose of GI Tag:

- ☛ Provides assurance of **quality and distinctiveness linked to the product's place of origin.**
- ☛ **Prevents non-compliant product standards** while allowing similar production techniques within defined standards.

❖ Duration and Renewal:

- ☛ GI registration is **valid for 10 years.**
- ☛ It can be renewed for **additional 10-year periods.**

❖ Legal Framework:

- ☛ Covered under the **Paris Convention for the Protection of Industrial Property.**
- ☛ Governed by the WTO's Agreement on **Trade-Related Aspects of Intellectual Property Rights (TRIPS).**

❖ Indian Regulations:

- ☛ In India, the **Geographical Indications of Goods (Registration and Protection) Act, 1999**, regulates GI tags.
- ☛ Administered by the **Controller General of Patents, Designs, and Trade Marks**, who also serves as the **Registrar of Geographical Indications.**

RECENT SCOPE OF GI TAGS:

- ☛ GI tags cover various **product categories, not limited to popular items.**
- ☛ **Over 500 GI tags exist as of January 7, 2023**, across **34 product classes**, including **chemicals, foodstuffs, handicrafts**, etc.
- ❖ **Categories of GI Tags:**
 - ☛ Handicrafts dominate the list, with over **half of the GI tags given to products crafted by skilled artisans.**
- ❖ **GI Tags Across States:**
 - ☛ Every Indian state has at least one GI tag, reflecting unique cultural items.
 - ☛ **Tamil Nadu leads with 61 GI tags**, followed by **Uttar Pradesh (56), Karnataka (48), Kerala (39), and Maharashtra (35).**
- ❖ **Examples of Unique Items:**
 - ☛ **Banaras offers 11 unique crafts** and agricultural items, including Banarasi paan.



NOMADIC CHIN-KUKI" FROM ST LIST IN MANIPUR

- ☛ Mysuru, with 10 unique items, includes the Mysore mallige jasmine and fragrant sandalwood soap.
- ☛ Thanjavur has five GI tags, featuring paintings and iconic bobblehead dolls.

WHY IN NEWS?

- ❖ The Centre has directed the Manipur government to review a representation requesting the removal of "Nomadic Chin-Kuki" from the list of Scheduled Tribes (ST) in the state.

About 'CHIN-KUKI' TRIBES:

❖ Ethnic Identity and Colonial Influence:

- ☛ The Chin-Kuki-Mizo people are an ethnic group residing in India, Myanmar, and the Chittagong Hill Tracts of Bangladesh.
- ☛ The term "Chin-Kuki-Mizo" originates from colonial practices, reflecting the struggle to find a universally accepted name for the diverse group.

❖ Names and Identity:

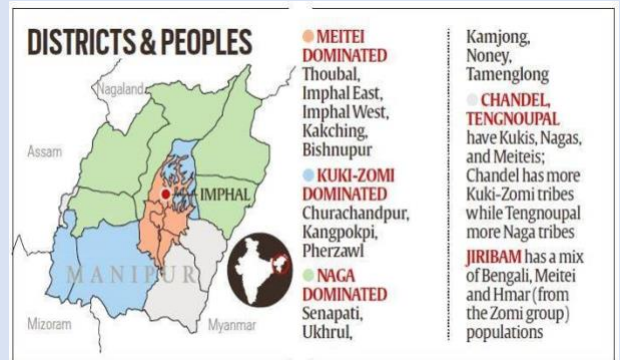
- ☛ The people historically identified themselves by clan, sub-tribe, or language rather than a unified name.

❖ Historical Division and Unity:

- ☛ Lack of an overarching political structure led to divisions among villages, tribes, and clans.
- ☛ Despite political boundaries, a common identity emerged through the shared term "Zo," meaning "People of the hills."

❖ Linguistic and Geographic Roots:


- ☛ Linguistically, the Chin-Kuki-Mizo people speak languages from the Tibeto-Burman family, originating from southern China and Northern Burma.
- ☛ The Linguistic Survey of India in the 1890s traced their territory from the Jaintia and Naga Hills to the Sadoway district of Burma, characterized by mountainous terrain.



RECENT CHANGES:

- Maheshwar Thounaojam, Republican Party Secretary, submitted a representation.
- Meitei groups appealed for ST status in 2023, including Meitei Pangals.
- Proposal to grant Meiteis ST status by excluding Kuki and Zomi communities.
- Union government emphasized the need for a State government proposal for ST list changes.
- Constitutional provisions under Article 342 require the recommendation of the concerned State Government for changes in the ST list.
- The representation seeking delisting of "Nomadic Chin-Kuki" forwarded to Manipur government.
- Argument based on the assertion that Kuki and Zomi are not indigenous to the region.
- Maheshwar Thounaojam advocates prioritizing indigeneity for defining STs in Manipur.



	<p>OTHER TRIBES OF MANIPUR</p> <ul style="list-style-type: none"> ❖ Naga Group: <ul style="list-style-type: none"> ☛ Zeliangrong, Tangkhul, Mao, Maram, Maring, Tarao. ❖ Chin-Kuki Group: <ul style="list-style-type: none"> ☛ Gangte, Hmar, Paite, Thadou, Vaiphei, Zou, Aimol, Chiru, Koireng, Kom, Anal, Chothe, Lamgang, Koirao, Thangal, Moyon, Monsang. ❖ Chin-Kuki Identity Distinction: <ul style="list-style-type: none"> ☛ Chins in Myanmar, Kukis in India; Some groups like Paite, Zou, Gangte, Vaiphei prefer the name Zomi.
<p>Supreme Court Decision on Bilkis Bano Case Remission</p>	<p>WHY IN NEWS?</p> <ul style="list-style-type: none"> ❖ <i>The Supreme Court nullifies the remission granted by the Gujarat government to 11 convicts in the Bilkis Bano gangrape case during the 2002 Gujarat riots.</i> <p>KEY TERMS IN LEGAL CONTEXT</p> <ul style="list-style-type: none"> ❖ Pardon: <ul style="list-style-type: none"> ☛ Absolves convict from sentence and conviction, removing all penalties and disqualifications. ❖ Commutation: <ul style="list-style-type: none"> ☛ Substitution of a harsher punishment with a milder one, e.g., changing death sentence to rigorous imprisonment. ❖ Remission: <ul style="list-style-type: none"> ☛ Reduction of sentence duration without altering its nature, e.g., cutting a two-year rigorous imprisonment to one year. ❖ Respite: <ul style="list-style-type: none"> ☛ Awarding a reduced sentence due to special circumstances, like physical disability or pregnancy of the offender. ❖ Reprieve: <ul style="list-style-type: none"> ☛ Temporary stay of sentence execution, often for death penalty, allowing time to seek pardon or commutation from the President. <p>PARDONING POWER OF PRESIDENT AND GOVERNOR:</p> <ul style="list-style-type: none"> ❖ Constitutional Provisions: <ul style="list-style-type: none"> ☛ Article 72 grants the President power to pardon, reprieve, or commute sentences, including death sentences. ☛ Article 161 empowers Governors of States to exercise similar pardoning powers. ❖ Difference Between President and Governor's Powers: <ul style="list-style-type: none"> ☛ President can pardon Court Martial cases and death sentences, while Governor's power doesn't extend to these. ❖ Purpose of Granting Pardon: <ul style="list-style-type: none"> ☛ Aimed at correcting judicial errors, promoting prison discipline, and serving public welfare. 
<p>DRDO's Counter-Drone System and UAV</p>	<p>WHY IN NEWS?</p> <ul style="list-style-type: none"> ❖ <i>DRDO's counter-drone system, designed to detect, identify, and neutralize drones, is ready for production.</i>



Development

- ❖ *Already demonstrated to armed services and security agencies, with some orders placed.*

ANTI-DRONE TECHNOLOGY IN INDIA:

- ❖ **Key Development:**

- ☛ DRDO focusing on **advanced anti-drone technology for the Indian defence market.**
- ☛ **First indigenously developed system, Drone Detect, Deter and Destroy system (D4S), inducted into the Indian Armed Forces.**

- ❖ **D4S Capabilities:**

- ☛ Capable of **detecting rogue drones and jamming micro drones (soft kill).**
- ☛ Ability to use **lasers for destroying drones (hard kill).**
- ☛ Displayed at **Aero India 2023, showcasing its capabilities.**



DRDO'S UAV DEVELOPMENT

- ❖ **High-End Drones:**

- ☛ DRDO focusing on **high-end drones.**
- ☛ **Tapas Medium Altitude Long Endurance (MALE) UAV** in advanced stages of developmental trials for intelligence, surveillance, and reconnaissance.

- ❖ **Archer UAV Development:**

- ☛ **Short-range armed UAV Archer** under development for reconnaissance, surveillance, and **low-intensity conflict.**
- ☛ Developmental flight trials in progress.

- ❖ **Collaboration with Industry:**

- ☛ Private industries involved in the development and production, including BEL, receive **Transfer of Technology (ToT) for DRDO-developed technologies.**

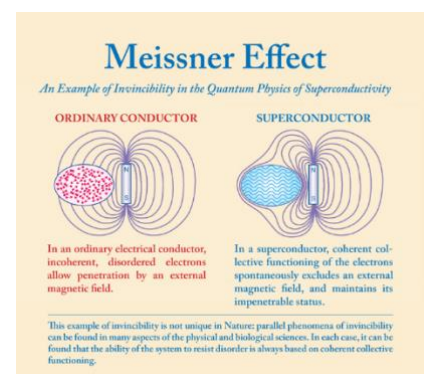
South Korea superconductivity claim revived with new data

WHY IN NEWS?

- ❖ *In a recent preprint paper, scientists from China and Japan reported a potential sign of superconductivity in the controversial material LK-99, a copper-substituted lead apatite. The study focused on the Meissner effect, a characteristic of superconductors, and suggested the material might exhibit near-room-temperature superconductivity.*

MEISSNER EFFECT:

- ❖ Researchers observed the Meissner effect, a **sign of superconductivity, in LK-99.**
- ❖ The Meissner effect is the **expulsion of a magnetic field from the interior of a superconductor.**
- ❖ Superconductivity enables **materials to conduct electric currents with zero resistance.**





- ❖ Scientists **seek room-temperature and pressure (RTP) superconductors** for various applications, including **efficient power transmission**.

RECENT CONTROVERSIES

- ❖ **Scientific Hype:**

- ☛ Prospect of discovering **RTP superconductor led to scientific hype** and controversies in 2023.
- ☛ Rushed findings and **faulty data in previous superconductor-related studies**.

- ❖ **Previous Controversies:**

- ☛ Controversies **around superconductivity claims in lutetium hydride and manganese sulphide**.
- ☛ Another controversy involved a **material called LK-99, claimed to be an RTP superconductor but later refuted**.

NEW STUDY ON LK-99:

- ❖ **Research Approach:**

- ☛ Chinese scientists **studied LK-99 using a "state-of-the-art" approach** after previous controversies.
- ☛ They **applied a magnetic field to LK-99 samples, observing changes in magnetization to detect superconductivity**.

- ❖ **Hysteresis Loop Experiment:**

- ☛ Conducted hysteresis **loop experiments at various temperatures (-173.15 to 26.85 degrees C)**.
- ☛ Measured how the **material's magnetization responded to changing magnetic fields**.

- ❖ **Critical Temperature Claim:**

- ☛ Reported **LK-99 samples might exhibit a critical temperature of around -23 degrees C**.
- ☛ Suggested a **"great chance" of observing room-temperature superconductivity**.

