



Hydrogen Peroxide

[Source: PIB](#)

Researchers have developed an **efficient, eco-friendly, and energy-saving** method to synthesize [hydrogen peroxide \(H₂O₂\)](#).

- **About Hydrogen Peroxide (H₂O₂):** It is a **colorless liquid** with a **bitter taste** at room temperature, highly **unstable**, and **decomposes into oxygen and water**, releasing heat.
- **Uses: Antiseptic** for wounds (diluted solutions), disinfectant in hospitals and clinics.
 - **Industrial Uses: Bleaching agent** in paper, textile, and cosmetic industries.
 - **Rocket Propulsion:** High-concentration H₂O₂ used as a [propellant](#).
 - **Chemical Applications:** Employed in **food processing** for sterilization.
 - **Hazards:** It is a **strong oxidizer** and may cause **spontaneous ignition** with combustible materials.
- Peroxide chemicals are **organic compounds** that contain a peroxide functional group (**two linked oxygen atoms**).

Read More: [Explosive Substances Act and Peroxide Chemicals](#)

Ancient Stone and Bone Tools

[Source: IE](#)

A recent study found that **ancient ancestors** used **bone tools 1.5 million years ago**, nearly **a million years earlier** than believed, **challenging** the idea that toolmaking was **unique to humans**.

- **Origin of Toolmaking:** The earliest **stone tools (3.3 million years)** and **bone tools (1.5 million years)**, indicating that tool use **predates Homo** and was likely practiced by **earlier hominins**.
 - It is argued that toolmaking required **conceptual thought** and was **unique to humans**.
- **Fossil of Human Evolution:** Discovered in **1974**, Lucy, a **3.2-million-year-old human ancestor**, played a key role in evolution, possibly **using her hands for tools**.
- **Stone Tools in India's Human History:**

Period	Tools & Technology	Key Sites
Lower Palaeolithic (600,000 - 150,000 BCE)	Hand axes , cleavers, choppers (for cutting, chopping, skinning)	Bori (Maharashtra), Son & Sohan valleys (Punjab) , Didwana (Rajasthan), Bhimbetka (MP)
Middle Palaeolithic (150,000 - 35,000 BCE)	Flakes, blades, points , borers, scrapers (from small stone pieces)	Narmada valley, Belan valley (UP) , Tungabhadra region (South India)
Upper Palaeolithic (35,000 - 10,000 BCE)	Blades, burins, scrapers (more refined and diverse)	Bhimbetka (MP) , Karnataka, Maharashtra, Gujarat sand dunes

Mesolithic Age (9000 - 4000 BCE)	Microliths (tiny stone tools, often used as composite tools)	Bagor (Rajasthan), Adamgarh (MP) , South of Krishna River
Neolithic Age (7000 - 5500 BCE)	Rectangular axes , polished stone axes	Mehrgarh (Balochistan) , Burzahom (Kashmir), Gufkral (Kashmir), Senuwar (Bihar)

Read More: [Wooden Artifacts of Stone Age](#)

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