

Pyroprocessing

June 8, 2026 • vajiramandravi.com



Pyroprocessing Latest News

Pyroprocessing is being used in many sectors across the globe.

About Pyroprocessing

- It is a **way to change a solid material** physically or chemically **using high temperature**.
- It is a **dry process** and very energy-intensive. Three sectors that use it most are cement-making, metallurgy, and nuclear power.

Applications of Pyroprocessing

- **Cement Making**
 - This sector uses pyroprocessing the most and it involves
 - First, **finely ground limestone**, clay and iron — the raw materials — are fed into a rotary kiln.
 - As the **temperature increases to 900° C**, the limestone loses its carbon dioxide, and at around 1,450° C, the mix partly melts to form marble-sized nodules called clinker.

- The clinker is then ground to produce cement.

- **Metallurgy Sector**

- Pyroprocessing is **used to extract metals from their ores** in multiple stages.
- For example, sulphide ores are heated in air — or roasted — to convert them into metal oxides, like zinc sulphide.
- Smelting melts an ore to separate the metal from waste impurities called slag.

- **Nuclear industry**

- It uses pyroprocessing to **reprocess spent nuclear fuel**.
- First, used **nuclear fuel is broken up into pieces** and placed in a salt bath — usually a mixture of lithium and potassium **chlorides at 500° C or more**.
- Then, an electric current is passed through the salt bath, causing different elements to become separated depending on their electrochemical properties.
- Operators then recover the elements of interest in separate streams.

Source: TH

Source: <https://vajiramandravi.com/current-affairs/pyroprocessing/>

© Vajiram & Ravi. For personal use only.