



HBNI

Alumni Webinar

**Friday,
24 April 2026
at 5:00 PM**

Venue:

**Conference Hall ,
First Floor, Training
School Complex,
Anushaktinagar,
Mumbai**

Link of : -

YouTube:

[https://youtube.com/
live/KD2SxjFYKZo](https://youtube.com/live/KD2SxjFYKZo)

Webex :

[https://hbni.webex.co
m/hbni/j.php?MTID=
m14929a38b030f3e4e
1e219c7734ffe9d](https://hbni.webex.com/hbni/j.php?MTID=m14929a38b030f3e4e1e219c7734ffe9d)

Dr. Soumyadip Mondal

**Scientific Officer-G,
Materials Processing Division (MPD),
BARC, Trombay, Mumbai, INDIA**



“Hydrometallurgy and its Role in Rare Earth Extraction”

Dr. Soumyadip Mondal obtained his Bachelor of Engineering in Metallurgy from Bengal Engineering College, Shibpur (Howrah, West Bengal) in 2002. He joined BARC through the 46th batch of the Training School and is currently working in the Rare Earth Development Section, Materials Processing Division, Materials Group, BARC. He was awarded his Ph.D. by Homi Bhabha National Institute (HBNI), Mumbai, in 2023.

Dr. Mondal has over 23 years of experience in developing hydrometallurgy-based processes for critical metals such as uranium, cobalt, nickel, and rare earth elements from diverse sources. In the area of rare earths, he has contributed to process development for mapping, estimation, and recovery from industrial wastes such as coal fly ash, phosphogypsum, and red mud.

His expertise in extractive metallurgy spans laboratory-scale process development, systematic scale-up, and plant design and operation at bench and pilot scales. He has authored 15 peer-reviewed journal papers and 30 conference papers. He has also been a recipient of four DAE Group Achievement Awards as a team member.

Abstract

Hydrometallurgy plays a crucial role in the extraction of metals, particularly from lean and complex ores. Although it has traditionally received comparatively less emphasis within extractive metallurgy, it has gained significant importance in recent years and is now a key area of focus in scientific discussions and industrial applications.

Hydrometallurgical processing involves selective leaching of metal values into aqueous solutions, followed by recovery through unit operations such as solid-liquid separation, solvent extraction, ion exchange, and precipitation. These processes generally require simpler instrumentation and control systems and often result in lower capital and operational costs. For the exploitation of rare earth mineral resources—particularly monazite, xenotime, and bastnaesite—hydrometallurgy is often the most viable and economical approach. In addition to extraction, the separation of individual rare earth elements is also predominantly achieved through hydrometallurgical techniques.

This talk will provide an overview of hydrometallurgy, with emphasis on its role in rare earth extraction and subsequent separation processes.

All are cordially invited for in person attendance