



CMEC-2026



**AMD-INS INTERNATIONAL SYMPOSIUM
CRITICAL MINERALS AND MATERIALS AS ELEMENTS OF CHANGE:
A GLOBAL PERSPECTIVE**

October 08-09, 2026

Venue: Homi Jehangir Bhabha Auditorium, AMD, Hyderabad, India-500 016

About the Symposium

Critical Minerals and Materials as Elements of Change: A Global Perspective (CMEC-2026) is a two-day scientific symposium focussed on the growing importance of critical minerals and materials in enabling global clean energy transition and technological advancement. The event will bring together expert geoscientists, material scientists, academicians, researchers and students to deliberate on the evolving energy landscape of India and the world, discuss sustainable exploration and extraction of critical minerals besides materials design, synthesis and characterisation techniques. Through invited lectures, engaging deliberations and panel discussions, the symposium aims to enhance scientific understanding, address emerging challenges and promote collaboration across national and international institutions, supporting India's journey toward energy security and Net Zero goals.

**Critical Minerals and Materials in Evolving
Energy Landscape**

Strategic autonomy is no longer defined solely by access to natural oil and gas resources; it is about the Critical Minerals that underpin the high-tech economy. Lithium is essential for Electric Vehicle (EV) batteries and Rare Earth Elements (REE) for permanent magnets in wind turbines, advanced electronics and strategic defense systems. Such resources form the material backbone of the emerging low-carbon and digital future. In this backdrop, the **CMEC -2026** symposium is envisaged as a strategic platform to undertake systematic assessment and characterization of critical minerals and materials, identifying them as the "Elements of Change" in driving India's transition towards technological self-reliance, energy security and Net Zero. The initiative seeks to promote an integrated understanding of advanced exploration methodologies and novel extraction technologies for critical and strategic minerals within the broader framework of national resource security. As the global energy landscape shifts from hydrocarbon dependence toward strategic autonomy in green energy systems, this novel initiative of Atomic Minerals Directorate for Exploration and Research (AMD) and Indian Nuclear Society (INS) Hyderabad Branch focusses on strengthening resilient domestic supply chains for strategically important minerals. Special emphasis will be placed on the design, development and characterisation of advanced materials and their significance in clean energy transition and strategic technological applications. It is envisaged that the deliberations during the symposium will help to identify key research gaps and foster collaboration among national and international institutions, thereby strengthening India's mineral security and supporting sustainable, low-carbon industrial development.

Organized by

Atomic Minerals Directorate for Exploration and Research (AMD), Hyderabad, in association with Indian Nuclear Society, Hyderabad Branch.

Scope of the Symposium

A. Critical & Strategic Minerals

- Integrated Exploration Methodologies
- Geology, Metallogeny and Mineralogical Characterization
- Geochemical Fingerprinting
- Prospectivity Mapping using AI & ML
- Mining, Beneficiation and Extractive Metallurgy
- Sustainable Recovery from Secondary Sources
- Value chain and circular economy
- Analytical Research and Development
- Certified Reference Materials (CRM)

B. Advanced Materials

- Energy & sustainability: Materials for H storage, photovoltaics, super capacitors, etc.
- Nanotechnology & 2D materials
- Smart & Functional Materials
- Computational Materials Science
- Bio-materials & Health care
- Advanced Manufacturing

Abstract Submission Guidelines

- Authors are invited to submit **extended abstracts** for **oral/poster presentations**.
- The abstract (maximum **two pages**) must be formatted in **A4 size, single spacing, Times New Roman, font size 12**. Submissions should be sent via email to **cmec2026.hyd@gmail.com** on or before **15th August 2026**.
- All submitted abstracts will undergo a **peer-review process**.
- The **acceptance of abstracts** will be communicated to the authors by **11th September 2026**.
- Abstracts should be addressed to the **Convener of the Conference at the above email**.

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Uraninite
U



Lepidolite
Li



Columbite
Nb-Ta



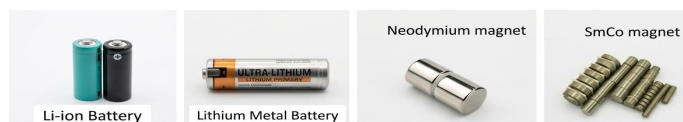
Beryl
Be



Xenotime
REE



Spodumene
Li



Be metal rod



Ta-Nb alloy

Souvenir

A souvenir of the proceedings of CMEC-2026 containing accepted abstracts from the registered participants will be published.

Award: The best three oral and five poster presentations will receive a certificate and a cash prize.



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Atomic Minerals Directorate for Exploration and Research (AMD)

AMD is an R&D unit under the Department of Atomic Energy (DAE). It is mandated with the exploration and augmentation of atomic and critical mineral resources essential for supporting and successful implementation of India's Nuclear Power Programme. AMD utilizes diverse range of exploration methodologies, including remote sensing, geological and radiometric surveys, geophysical techniques, ultra-trace level geochemical methods and drilling to investigate, evaluate and augment the mineral resources of U and Th besides Li, Be, Ti, Nb, Ta, Zr and REE.

With its Headquarters at Hyderabad, AMD has seven Regional Exploration and Research Centres located at New Delhi, Bengaluru, Jamshedpur, Shillong, Jaipur, Nagpur and Hyderabad and three Sectional Offices at Thiruvananthapuram, Vishakhapatnam and Kolkata. Since its inception in 1949, AMD has developed robust and versatile expertise in conducting geological and geophysical surveys, prospecting activities and mineral processing operations related to atomic and critical minerals.

The multidisciplinary exploration programme of AMD is ably supported by state-of-the-art equipment at Petrology, XRD, EPMA, XRF, Stable Isotope (IRMS), Geochronology (TIMS), Mineral Technology, Physics (INAA, Gamma Ray Spectrometer) and Chemistry (ICP-OES, GF-AAS, LED Fluorimetry) laboratories.

In the past seven decades of exploration, AMD has successfully identified substantial resources of uranium, thorium, lithium, niobium, tantalum, zirconium, beryllium, titanium and rare earth elements in the country.

Indian Nuclear Society (INS)

INS is a professional body of pan India presence consisting of nuclear scientists, engineers, technologists and academicians with Headquarters at Mumbai. It has more than 5000 Life Members. INS organizes frequent seminars and conferences across the country on relevant topics related to Indian Nuclear Power Programme

Registration Fee

Delegates: ₹4000

Students: ₹1500

INS Life Members: ₹2500

Overseas delegates: USD400

Registration fee can be paid online to "Indian Nuclear Society, Hyderabad Branch" A/C No. 10184727510, SBI, Nuclear Fuel Complex, Mallapuram Branch, ECIL Post, Hyderabad-500062 (IFSC SBIN0009071)

Accommodation: Accommodation can be arranged in hotels on payment basis.

For further updates regarding the symposium please visit AMD. Website <https://www.amd.gov.in/app16/index.aspx>

Address for correspondence

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