

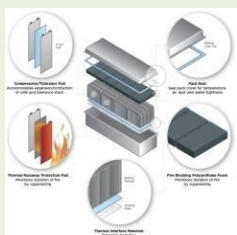
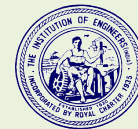


# ENGINEERING STAFF COLLEGE OF INDIA

(An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 50001:2018 & ISO/IEC 17025:2017 Certified, AICTE & CEA Recognised Institution)

Autonomous Organ of the Institution of Engineers (India)

Old Bombay Road, Gachibowli, Hyderabad – 500 032. Telangana, India



## Mining Division

3-Day Residential / Classroom Continuing Professional Programme

### **“Critical Minerals & Elements: Exploration, Mining & Sustainability”**

**17 – 19 October 2023**

#### INTRODUCTION

Mineral commodities that have important uses and no viable substitutes, yet face potential disruption in supply, are defined as critical to the Nation's Economic and National Security. The Rare Earth Elements (REE) are necessary components across a wide range of applications especially high-tech consumer products like mobile phones, computer hard drives, electric hybrid vehicles, flat screen monitors and television. Realizing their necessity in a plethora of technological applications, concern exists over whether supply can meet the needs of the economy. Mineral criticality can be assessed in terms of supply risks, vulnerability to supply restrictions and environmental implication. REE are a group of 17 elements which are vital for renewable energy and energy storage.

Technology has advanced so fast in the last few years that many minerals that were just part of research are now essential for modern applications especially for clean energy. The high importance and low occurrence renders these critical minerals susceptible to supply risks especially due to trade wars, conflicts or civil unrests.

Critical Minerals Strategy- 2016 identified 49 minerals vital for India's economic growth. National Electric Mobility Mission Plan 2020 has a projection of 6-7 million Electrical Vehicles (EV) on road and complete switch to EV by 2030. The National Mineral Policy put forward a vision for accelerated growth of production of non-fuel minerals. Lithium is a key ingredient in rechargeable batteries of the sort used in EV. Therefore, there is a huge need to access the raw materials, such as Lithium deposits. Lithium is a key ingredient in rechargeable batteries used in EV. Therefore, India needs to act fast on exploration, excavation, and setting up critical material value chain through adequate downstream investment.

#### OBJECTIVES

The objectives of the programme are:-

- Identification of critical minerals/elements vital for India's economic growth
- Evaluate resource potential for mining critical minerals
- Thoughts for accelerated growth of critical minerals
- Collaboration on action for Stable, Secure and Resilient supply for critical and strategic minerals
- Defining focus areas

#### COURSE COVERAGE

The key areas to be deliberated in the programme are:

- Introduction to the critical minerals/Elements
- Characterize the primary critical minerals/ Elements
- Potential supply chain disruption
- Geological /Geo-physical mapping to identify critical mineral resources
- Strategic framework for planning, coordination & execution

- Understanding of the spectral indication using lab based studies
- Compile and examine mineral maps of the known Lithium deposits using field and remote sensing data.
- To trace the Lithium geo chemical cycle with an emphasis on pathways that lead to the development of Lithium clay and brine resources

## BENEFITS TO THE PARTICIPANTS

- Evaluate critical mineral resource potential, production, consumption and impact on environment
- Defining focus areas enabling the energy transition
- Know the fundamental ore processes

## METHODOLOGY

- Lectures/presentations by expert and eminent faculty/resource persons
- Case studies, Sharing of experiences

## RESOURCE PERSONS

The faculty/resource persons consists of experts from the Industry, Research establishments and Academia besides that of ESCI.

## TARGET PARTICIPANTS

This programme would be useful to Engineers, Executives, Managers, Scientists, Researchers, Regulatory Authorities, Officials of Government, Entrepreneurs, etc. in the field of Mining, Geology, Geo-physics, and Chemical Engineering.

## PROGRAMME DATES & TIMINGS:

**Dates : 17 – 19 October 2023**

**Timings : 10.00 am to 5.30 pm each day with tea & lunch breaks**

## COURSE FEE

- **INR 25,000/- (Rupees twenty five thousand five hundred only)** per participant. Fee includes course material, course kit, twin-sharing/single AC accommodation, breakfast, lunch, dinner, tea and snacks during the actual days of training programme.
- **Non-Residential: INR 20,000/- (Rupees Twenty thousand only)** per participant which includes course material, course kit, lunch, tea and snacks during actual days of training programme.
- *Special concession of 10% in course fees to organization for 5 or more nominations and attendance.*

**Goods and Service Tax @ 18%** is to be paid extra over and above the programme fee. **PAN Card No AAATT3439Q; GST No. 36AAATT3439Q1ZV. H.S. No. 999293** (Under commercial training or coaching services – clause 65(105) (ZZC) of Finance act – 1994).

Course fee is to be paid in favour of **“THE I.E.(I) – ENGINEERING STAFF COLLEGE OF INDIA”** in the form of demand draft payable at Hyderabad. Alternatively the payment may be made by **Electronic Fund Transfer (EFT)** to ESCI –**SB A/c No. 33705165550 with State Bank of India, Manikonda Branch, Door No.2-30/1, Indira Nagar, Gachibowli, Hyderabad – 500032, our NEFT/RTGS/IFSC Code No. SBIN0011076 – MICR No. 500002107.** *While using EFT method of payment, please ensure to communicate your company name, contact details, our invoice reference and programme title.*

## REGISTRATION

To register, please send your nominations by providing name, designation, contact address, email address, mobile no, telephone and fax number of the participant along with the details of mode of payment of fee, addressed to: [mining@escihyd.org](mailto:mining@escihyd.org).

## CERTIFICATION

A Certificate of participation will be awarded to each participant on conclusion of the programme.

## Profiles of Experts



**Dr Yamuna Singh** is a Post Graduate and PhD in Geology. Currently he is a visiting faculty at the Centre for Earth, Ocean & Atmospheric Sciences, University of Hyderabad. He has 36 years of experience in Exploration Research, Resource Evaluation and Characterization of Atomic and “Rare Earth Elements Resources: Indian Context”. He published 154 technical papers and authored a book on Rare Earth Minerals. He is a fellow of the Telangana Academy of Sciences.



**Mr Dipesh Dipu**, an Energy and Resources expert is the founder and partner at Jenissi Management Consultants. He is a Mining Engineer from IIT (ISM) Dhanbad and did his post-graduation in Finance and Management from IIM Calcutta and IBS Hyderabad.

Mr Dipesh has experience of about fourteen years in strategic and performance improvement consulting and financial advisory in the mining and energy sector with a major focus on coal and metals. He has worked on corporate planning and strategy formulation assignments with leading India mineral resources companies. He has been a leader of performance improvement initiatives for the clients. He has led the team in transactions in the mining sector, through bidding and negotiated routes. He has worked on assignments ranging from the target identification and transaction support for acquisition of the mines and mineral blocks in India & abroad.



**Dr H Sarvothaman** functioned in different scientific capacities in Geological Survey of India in many places of India before retiring as Deputy Director-General. He conducted Geological Mapping and Mineral Exploration for tungsten, graphite and limestone, besides other research activities of GSI.

He authored 4 (four) books. 1. WATER: Resource Augmentation, Management & Policies. 2. Disaster Management: Engineering & Environmental Aspects. 3. Environment Science—Issues & Solutions. 4. Disasters and Hazards: Risk Reduction, Mitigation and Management. These books are used as text books in Universities, libraries and references.

Currently, he is (i) Visiting Faculty in the Earth Science Department of University of Hyderabad; (ii) Member, Training Quality Improvement in Centres for Agrarian Studies (CAS) and Natural Resources Management (CNRM), NIRD&PR, Hyderabad; (iii) Guest Faculty in GSI Training Institute, Hyderabad and Badruka College, Hyderabad; and (vi) Treasurer, Vivekananda Educational Centre, an NGO managing Vivekananda Public School for the economically and socially downtrodden students.



**Dr V Balaram** is an Emeritus Scientist & Former Chief Scientist & Head, Geo-Chemistry, National Geophysical Research Institute, Hyderabad. He has a vast experience in Geology, Geochemistry, Mineral Exploration, Analytical Geochemistry and Environment. He published many articles and also authored many books on Rare Earth Minerals.



**Dr D Venkat Reddy, Doctor of Philosophy [Ph.D.]**-Geology, Osmania University, Hyderabad, Telangana State, India in 1985

**Master of Science** in Hydrogeology, University Science College, Osmania University, Hyderabad, Telangana State, India in 1978

**Master of Science in Geology**- Engineering Geology specialization -University Science College, Osmania University, Hyderabad.

Professor, Department of Civil Engineering, National Institute of Technology Karnataka.

Consulting Faculty, Larsen & Toubro (L&T) Construction-Heavy Civil Infrastructure, Chennai, Tamil Nadu.

**Present Position:** Adjunct Professor, Dept. of Civil Engineering – Dr. Babasaheb Ambedkar Technological University, Maharashtra and visiting faculty, Reva University, Bengaluru.

Advisor, CCC, CTE & EM Divisions in Engineering Staff College of India, Hyderabad.



**Mr BRV Susheel Kumar** is a graduate in Mining Engineering from Kothagudem of School of Mines, Osmania University and secured distinction. He started his career in The Singareni Collieries Company Limited and worked as Under Manager. Later he was selected in the Department of Mines & Geology as Group-I officer from AP Public Service Commission and joined as Assistant Director (Mines) in March 1993 and was promoted as Director in the year 2011. He underwent full time Intensive Training on Implementation of Information Technology conducted by IIM, Ahmedabad and designed Online Filing and Processing of Mineral Concession Application. He played a vital role in bringing in amendments to MMD&R Act 1957 and also took a lead role in conceptualizing the documentary film on Extraction of Bauxite to create awareness among the tribes. He participated in the World Mining Congress in Iran, PADAC in Canada, Granite Expo Exhibition in Italy-Verona, and Granite International Fair in China. He is a good sportsman and played Football for State for Subroto Mukherjee Trophy and played hockey & cricket at the District Level.



**Er K J Amarnath** a Gold Medalist, in BE (Mining Engineering) from College of Engineering, Osmania University, Hyderabad. He retired as Chief General Manager from The Singareni Collieries Company Ltd. (A Government Company). Further, he was Director in NSGPVL, A Joint Venture Company of NTPC Ltd, A Central Government PSU and The Singareni Collieries Company Ltd, A Government Company.

He is a Fellow of Institution of Engineers (FIE) and Life Member of Institution of Engineers, MEAI (Mining Engineers' Association of India), MGMI (Mining, Geology, Metallurgical Association of India), Alumni of Mining Engineers' Association (Osmania University and Kakatiya University).

Presently he is working as Senior Faculty-Head, Mining Division, Engineering Staff College of India, Hyderabad.

### **Contact Persons**

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### **Mining Division**

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