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Release of Indigenously Developed Certified Reference Material for Major and Rare Earth Elements in Ferrocarbonatite (BARC – B1401)

On 17 November 2025, Dr. A.K. Mohanty, Chairman of the Atomic Energy Commission and Secretary of the Department of Atomic Energy (DAE), formally released an indigenously developed Certified Reference Material (CRM) named 'Ferrocarbonatite (FC) – (BARC B1401).' This CRM will play a pivotal role in exploration, extraction and process control for Rare Earth Elements (REEs) ore mining and allied production industries. The FC-CRM has been developed to support the development and validation of analytical methods, instrument calibration and quality control across scientific, industrial, and academic fields.

REEs are indispensable for strategic sectors such as electronics, renewable energy, manufacturing, and medical sciences. Ferrocarbonatite, a proven source rock for REEs, occurs in significant quantities in the carbonatite complexes across India and is extensively explored by Atomic Minerals Directorate for Exploration and Research (AMD). Matrix-matching Certified Reference Materials (CRMs) are essential for the accurate quantification of individual REEs; however, such CRMs are rarely available globally and are often prohibitively expensive.

Driven by the vision of "Atmanirbhar Bharat" of self-reliance, this indigenously developed FC-CRM bridges a crucial gap in nation's analytical capability. The CRM has been jointly prepared by National Centre for Compositional Characterisation of Materials (NCCCM) - BARC and AMD, Hyderabad, following ISO guidelines for certification.

The developed FC-CRM certifies thirteen (13) REEs (Ce, Dy, Er, Eu, Gd, La, Nd, Pr, Sc, Sm, Tb, Y and Yb) along with six (06) major elements (Al, Ca, Fe, Mg, Mn and P). This landmark achievement represents the first such CRM in India and the fourth in the world.

The release ceremony was graced by distinguished DAE officials including Shri Vivek Bhasin, Director, BARC; Shri Dheeraj Pande, Director, AMD; Dr. A.C. Bhasikuttan, Associate Director, Chemistry Group, BARC; Shri K. Jayakumar, Controller, BARC, Shri Daniel P. Babu, Head, Public Awareness & Media Interaction Division (PA&MID), DAE and Dr. K. Dash, Head, NCCCM-BARC.



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