IREL (India) Limited

R & D Projects Completed

1. Augmentation of PREE Solvent Extraction Test facility at RED.
2. Pilot Scale Production for Nanosize Rare Earth Phosphates and Development of Industrially Potential Application areas.
3. Design and Development of Environmentally Secure Rare Earth based Colorants.
4. Inflight processing of metallised ilmenite in a DC plasma furnace for continuous production of Titania Rich Slag and Pig iron.
5. Development of Cerium Oxide based Nano materials for applications as Chemical-Mechanical Planarisation/Polishing (CMP) Slurry.
6. Recovery of Heavy Rare Earths from Phosphoric Acid using Phosphorous Based Commercial Extractants and their mixtures.
7. Synthesis and properties of electrodeposited nickel/ceria nanocomposite coatings.
8. Catalysis by Nano Crystalline Ceria Modifies with Transition Metals.
9. Design and scale up of Annular Centri-fugal Extractor (ACE).
10. Processing of monazite through sulphuric acid for the recovery of Rare Earths, Thorium and Uranium.
11. Preparation of Mullite and Zirconia Toughened Mullite from Sillimanite.
12. Study of suitability of magnetic separators as replacement for air tables for recovery of monazite.
13. Versatile Nano Zirconia production facility at IREL, OSCOM.

14. High-field composite varistors based on Rare Earth Oxides.

15. Smart Magneto Rheological Elastomers Based on Rare Earth Magnets.

16. Production of Nano Titania from ilmenite and setup a pilot plant to process 1 ton/batch.

17. Production of Environmentally Secure Rare Earth Oxide Brown Pigment for Surface Coating Applications.

18. Optimization of Processing parameters to produce high aspect ratio synthetic Wollastonite.

19. Improving recovery of heavy minerals at IREL plants using spiral separators.

20. Suitability of Rare Earth Drum Magnetic Separator to increase plant efficiency at IREL, Chavara.