

**5-day Training Course on “ALUMINA-MAKING PROCESS” for
Alumina Refinery Personnel**

Day -1		
S. N.	Program	Time
1.	Registration	09:00 - 09:30
2.	Inauguration: Introduction, objectives & Centre activities	09:30 - 10:30
Tea Break		
3.	Indian bauxite mines and its characteristics	11:00 - 11:45
4.	Introduction to Bayer's process	11:45 - 12:30
5.	Beneficiation of sub-grade bauxite and laterite	12:30 - 13:15
Lunch Break		
6.	Bauxite value addition for product development	14:30 - 15:15
7.	Alternative processes for Alumina production	15:15 - 16:00
Tea Break		
Lab Visit	Bauxite sample preparation, characterisation & beneficiation	16:30 - 18:00
Day-2		
1.	Volumetric, Gravimetric, Spectrophotometric characterisation of bauxite	09:30 - 10:15
2.	Significance & determination of reactive silica in bauxite	10:15 - 11:00
Tea Break		
3.	Concepts & determination of Total Available Alumina & Bond work Index	11:30 – 12:15
4.	Importance of De-silication in Bayer Process	12:15 - 13.00
5.	Basics of Technological testing (Digestion & Desilication process)	13:00 - 13.45
Lunch Break		

6	Principle of Digestion in Bayer process	14:30 – 15:15
7	Concepts of Red Mud Settling and Washing	15:15 – 16:00
Tea Break		
Lab Visit	Digestion and Settling tests	16:30 – 18:00
Day-3		
1	Basics of Precipitation Technology	9:30 – 10:15
2	Concepts of Precipitation process and Technological testing	10:15 – 11:00
Tea Break		
3	Red mud Disposal practices: Indian and Global	11:30 – 12:15
4	Advances in Alumina Technology	12:15 – 13:00
5	Red mud utilization, value addition & polymerization	13:00 – 13:45
Lunch Break		
6	Development in Bayer Process (Equipment)	14:45 – 15:15
7	Role of lime in Bayer process	15:15 – 16:00
Tea Break		
Lab Visit	Precipitation test	16:30 – 18:00
Day-4		
1	Organics in Bayer Process and their removal	9:30 – 10:15
2	Recovery of Vanadium and Gallium from Bayer Liquor	10:15 – 11:00
Tea Break		
3	Energy-saving opportunities in the Bayer process	11:30 – 12:15
4	Bayer Process: Simulation and Mathematical Modeling	12:15 – 13:00
5	Use of Additives in Bayer Process	13:00 – 13:45
Lunch Break		

5	Synthesis, Characterization & application of Special Alumina	14:45 – 15:15
6	Alumina properties for Smelting	15:15 – 16:00
Tea Break		
Lab Visit	Simulation / modelling demonstration	16:30 – 18:00
Day -5		
1	Introduction to Analytical Chemistry & Chemical Analysis of bauxite	09:30- 10:15
2	Trace elements impurities and control in Bayer's Circuit	10.15 – 11:00
Tea Break		
3	Physical characterisation of bauxite and alumina	11:30- 12:15
5	Red mud beneficiation and Extraction of Rare earths	12:15 -13:00
6	Principles of X-Ray: Quantification technique-XRF/XRD	13:00 – 13:45
Lunch Break		
7	Fundamentals of Boiler Water Chemistry	14:45 – 15:30
Lab visit	Analytical Facility for Characterization of Bauxite, mud and Alumina	15:30 - 16:30
	Valedictory function	16:30 – 17:30
High Tea		