

## Coal Characterization – impact of coal quality on power stations

Formation of coal deposits - Global tectonic history - Comparison of characteristics - Formation of lignite deposits - Comparison of rank and type - Petrographic composition

Coal specifications- for combustion – Proximate analysis- Ultimate analysis- Ash analysis and Minerals-

Forms of Sulfur , Chlorine and Trace Elements –Mineralogy - Petrography-Maceral determination

Vitrinite reflectance-Computer-Controlled scanning electron microscopy of minerals in coal

Handling and Milling coal-Grindability -Abrasion and erosion – Hard Grove Index – YGP index

Combustion – Indices -- Volatile matter – Fuel ratio --Thermal gravimetric analysis --Chemical analysis Burning profiles --Heated wire mesh system --Drop tube furnaces --Ash deposition -- Empirical indices-- Ash fusion temperatures

Pre-combustion performance --coal handling and storage --Plugging and flowability --Freezing - Dusting --Oxidation/spontaneous combustion --Mills –Drying --Grinding -Size classification and transport -Fans

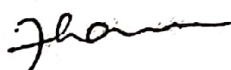
Coal-related effects on overall power station performance and costs

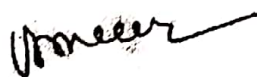
Capital costs --Cost of coal --Power station performance and costs --Capacity -Heat rate Maintenance --Availability

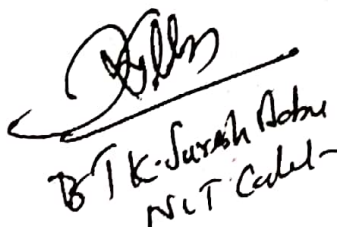
Ref:

- 1) Hand book of coal analysis –James G Speight –John Wiely , New Jersey –soft copy ready
- 2) COMBUSTION: FOSSIL POWER SYSTEMS , BY JOSEPH G. SINGER-Publisher: COMBUSTION ENGINEERING INC
- 3)Coal quality assessment – the validity of empirical tests-CCC/63-Anne M Carpenter-ISBN 92-9029-376-4
- 4) Coal resources—from--Technology of coal utilization IEA Clean Coal Centre 2003
- 5) Coal specs -Impact on power station performance-IEACR 52-Nina M Skorupska- ISBN 92-9029-210-5







  
BTK-Suresh Babu  
NIT Calicut

N. Anand 7.11.2013

S. Selvakumar  
07.01.13  
(S. SELVAKUMAR)  
Chairman

