

# **PETROGRAPHIC CHARACTERIZATION AND RANK EVALUATION OF COAL SEAMS BELONGING TO KORBA BASIN, CHHATTISGARH, INDIA**

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## **ABSTRACT**

Korba coal basin is one of the largest producers of power coal in Central India and coal produced from it finds its applicability in various industries also. The authors have selected 13 coal samples from Lower Barakar and Upper Barakar Formation of Korba coal basin and have investigated petrographic characteristics and shaping of coal rank. The moisture ( $W^a$ ), volatile matter ( $V^{daf}$ ) and ash content ( $A^d$ ) in coal samples vary from 6.22 – 12.40, 31.62 – 45.65 and 9.87 – 35.16 (wt %) respectively. Here, the vitrinite ( $Vt^{mmf}$ ) and inertinite ( $I^{mmf}$ ) maceral group show wide variation in their volume contents. The fuel ratio (FR) exhibit a range of 1.19 – 2.16 whereas mean vitrinite reflectance ( $R^o$  m %) varies from 0.41 – 0.50%. The petrographic study indicates an increase in vitrinite content and decrease in inertinite content from older (Lower Barakar) to younger (Upper Barakar) seam. This may indicate probable evolution of woody plants and accumulation in forest swamps associated with increase in water level. The coal facies of Korba coal basin varies from telmatic – limno-telmatic – limnic. Technological properties and elemental composition indicate that the rank of the coal varies from sub-bituminous to bituminous. The coal of Korba coal basin have large amount of carbominerites and rocks which may be separated during beneficiation.

**KEYWORDS:** Carbominerite, Coal Facies, Coal Petrography, Rank