

## CHARACTERS OF EOCENE COAL, PYNURSLA COALFIELD, EAST KHASI HILLS, MEGHALAYA, AS PARAMETERS FOR GEOENVIRONMENTS

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In Pynursla coalfield, the Sylhet Sandstone (Lakadong Sandstone) of the Shella Formation of the Jaintia Group (Eocene) houses four coal seams ranging in thickness from 0.3-1.6 m.

The coal contains low moisture (1.0-2.6%), low ash (3.1-10.6%) and high volatile matter (40.2-45.4%). The total sulphur is high (1.8-5.44%) with dominant organic (0.63-3.15%) and pyritic (0.5-3.08%) sulphurs.

In petrographic composition the dominant vitrinite (mostly collinite) varies from 59.5-65.6%, exinite from 6.5-17.1%, inertinite from 14.3-25.7% and mineral matter including framboidal pyrite varies from 6.7-9.0%. The vitrinite reflectance (in oil) varies from 0.50-0.71% which determines the rank of coal as High volatile Bituminus-C.

The low moisture indicates maturity of the coal whereas the high volatile matter infers low rank. The low ash indicates a short distance transportation of the plant debris. The high organic sulphur indicates that the parent plant communities were rich in sulphur and the high pyritic sulphur is a positive indication of marine environment.

The collinite variety of vitrinite is indicator of marine environment. The presence of framboidal pyrite and limestone band confirm the marine influence in the depositional basin. The trimacerite nature of the coal indicates a warm and humid climate with a mixed floral complex in the basin. The inertinite content indicates slow subsidence of the basin.

The high rank of the coal is due to tectonic events of the region and is evidenced by the presence of the regional fault (Dawki fault) on the south of the Pynursla coalfield.