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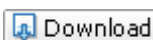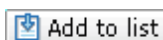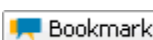
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FT-IR spectroscopic investigation of high sulphur assam coals and their solvent-extracts

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Abstract

The FT-IR spectroscopic techniques were used to understand the structural feature of four samples of high sulphur Assam coals and their extracts in polar solvents. Pyridine, N, N-Dimethyl Acetamide and Ethyl Acetate were used for extraction of the coals at their reflux temperatures in a Soxhlet apparatus. The difference-FT-IR spectroscopic technique was used to characterize the compositions of extracts. The extracts were found to contain characteristic absorption bands of original coals. Both aromatic and aliphatic C-H stretching bands were observed in the spectra of extracts. The spectral interpretations of the extracts closely resembled the parent coal structures. The relative transmittances of characteristic bands in extract spectrum suggest that the distribution of functional groups in coals were somewhat effected due to the interaction with the solvents. The spectra show some depletion of bands along with increase in some regions. The information regarding the structure of coal and extracts obtained by this method are qualitative in nature but very much useful in coal utilizations. © Geol. Soc. India.

Author Keywords

Assam coal; FT-IR of coal; High sulphur coal

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