Expert Opin Environ Biol 2018, Volume 7
DOI: 10.4172/2325-9655-C3-027

Development of carbonaceous materials with high added value from the oil shale of Morocco

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Currently, the carbonaceous materials are widely used despite their expensive development from raw material to finished product. A large number of potential precursors have been subject to many studies, which were unable to match the global performance with carbon fibers production cost. The work is focused on the enhancement of the obtain asphaltenes by the oil shale organic matter extraction. Their carbonaceous materials transformation in an intense added value such as fibers and foams carbon was realized by using supercritical extraction technique with a different solvent. Our study is oriented to the oil shale valorization. For the optimization of the extraction conditions, we first study the influence of the mineral matrix on the yield of the supercritical extraction of the organic matter of the rock. To improve the physicochemical parameters, a series of experiments were carried out. For a better extraction efficiency of the material, we used the methodology of the experimental designs. The second part of this work was devoted to the separation of light "maltenes" and "asphaltenes" heavy fractions. The characterization of the fractions carried out by different analysis techniques, which highlighted that the extracted oils obtained were of a good quality. The quality of the obtained oils depends on the operating conditions adapted to extract the organic matter from the shale under supercritical conditions.

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