

Unlocking the chemistry and properties of oil-containing sludge for potential utilization

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Abstract. At present, possible utilization of oil-containing sludge so as to achieve the sustainable environment has become a subject of considerable interest. The oleochemical factory generates nearly two metric tons of sludge per day from the effluent processing plant. Its disposal is costly and strenuous towards the environment, therefore different alternatives to handling and utilization were studied. The sludge and its derivatives were characterized for elemental composition, proximate analysis, ash and oil constituents, surface analysis, leaching tests and calorific value. Results show that the oil-containing sludge is rich in carbon, calcium, and iron. It has a high calorific value of 33.8 MJ/kg, that is partly attributed to the oil content of 68 %. These preliminary characteristics data offer insight into several promising applications of converting “trash” into “treasure” towards sustainable environment.

Keywords: oil-containing sludge; scheduled waste; sustainable environment; characterization; utilization.

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