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Humic acids from siliceous sapropel: IR spectroscopy and thermal analysis

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Abstract

It has been shown that humic acids can be isolated by the action of alkali on the sapropel with subsequent precipitation by acid. We used varying experimental conditions for the most complete extraction of humic acid from sapropel. The equations of regression showing the influence of concentration of alkali, temperature and process duration on efficiency of allocation of humic acids and their ash-content are derived. Transformations of the humic acids emitted from sapropel in the range of temperatures 40-1000 ºC on air by means of the thermal analysis are studied. IR spectroscopy confirmed the existence of humic acids of sapropel of various functional groups in the composition. The number of oxygen-containing functional groups is determined by Boem's technique. Large number of groups allows to assume that humic acids can be used as a sorbent of heavy metals.