

Spectroscopic Comparison of the Physico-Chemical Properties of Humic Acids Extracted from Sewage Sludge and Bottom Sediment

J. Polak, M. Bartoszek, M. Kantor, W.W. Sułkowski

*Department of Environmental Chemistry and Technology, Institute of Chemistry,
University of Silesia, Szkolna 9, 40-006 Katowice, Poland
e-mail: wsulkows@us.edu.pl*

Comparison of the physico-chemical properties was carried out for humic acids extracted from sewage sludge and bottom sediment.

The isolated humic acids were investigated by means of EPR, IR, UV/VIS spectroscopic methods and elementary analysis AE.

On the basis of earlier studies it was stated that humic acids extracted from sewage sludge can be divided into humic acids extracted from raw sewage sludge and from sewage sludge after digestion process. The digestion process was found to have the most significant effect on physicochemical properties of humic acids extracted from sludge during sewage treatment [1-3].

Humic acids extracted from sewage sludge had higher free radical concentration than humic acid extracted from bottom sediment. However, g-factor values were similar for all studied samples but it is noteworthy that g-factor values for humic acid extracted from raw sewage sludge and from bottom sediment were lower as compared with humic acid extracted from sewage sludge after fermentation processes.

The IR spectra of all studied humic acids confirmed the presence of functional groups characteristic for humic substances.

It was observed that humic acids extracted from bottom sediment had more aromatic character and contained less carbon, nitrogen and hydrogen than these extracted from sewage sludge.

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