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BOOK OF ABSTRACTS



BIOGENIC COMPONENT DETERMINATION IN LIQUID FUELS - COMPARISON OF DIFFERENT LSC METHODS

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There are few novel methods for biogenic component determination in liquid fuels by direct measurement of ¹⁴C via liquid scintillation counting (LSC) technique. The basic idea of all used methods is the same: different ¹⁴C signatures of the biogenic and the fossil components – in the case of biogenic component there are a presence of modern ¹⁴C activity from the atmosphere and in the case of fossil fuels there should not be ¹⁴C activity in the sample. This paper presents inter-laboratory comparison between two different methods used in Laboratory for Nuclear Physics from University of Novi Sad, Serbia and in Laboratory for Low-level Radioactivities from Rudjer Boskovic Institute, Croatia. Both laboratories used the same samples, the same detectors – liquid scintillation counter Quantulus 1220 but different calibration methods. Laboratory for Low-level Radioactivities is using quenching properties of modern liquids for calibration (I.Krajcar Bronic et al, 2016) and Laboratory for Nuclear Physics is using two step method for calibration (I.Stojkovic et al, 2017).

References:

I. Krajcar Bronic, J. Baresic, N. Horvatincic, A. Sironic, 2016, Determination of biogenic component in liquid fuels by the ¹⁴C direct LSC method by using quenching properties of modern liquids for calibration, Radiation Physics and Chemistry, <http://dx.doi.org/10.1016/j.radphyschem.2016.01.041> (Article in press).

I. Stojkovic, J. Nikolov, M. Tomic, R. Micic, N. Todorovic, 2017, Biogenic fraction determination in fuels – Optimal parameters survey, Fuel, Volume 191, 1 March 2017, Pages 330–338.

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