OPTIMIZING THE FEATURES OF THE SCA TOWARDS IMPROVEMENT OF MÖSSBAUER SPECTRA PRODUCTIVITY

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The statistical quality (productivity) of Mössbauer spectra is one of the most important features characterizing Mössbauer spectrometer. Optimizing the discrimination part of spectrometer including the novel way of selection represents a route how to increase the spectrum productivity.

Here, we present a new type of selection utilizing the two fast comparators, D-type flip flop and chip with programmable delay (see Figure 1). The procedure is then based on controlling the delay of trigger pulse by which we improve the productivity of the final spectra. The main advantage of this optimizing is a possibility to use different detectors 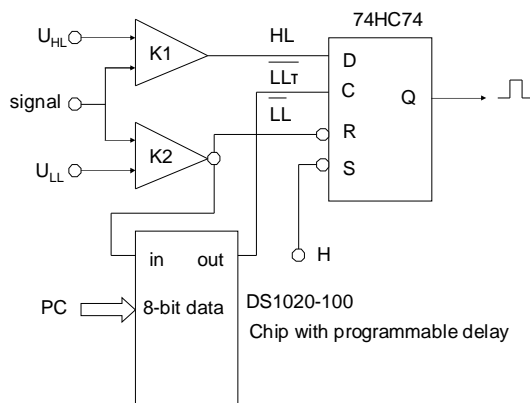of gamma rays where we can setup the discriminator depending on the signal from the detector. A simple solution, short death time and stability of the analyzer area another suitable properties of this system. A comparison with commonly used discrimination systems, including those previously developed in our laboratory [1] shows that newly suggested discriminator results in a significant improvement in the productivity of Mössbauer spectra.

Figure 1. SCA with programmable delay.

References:

[1] M. Mashlan, D. Jancik and A.L. Kholmetskii: in *Mössbauer Spectroscopy in Materials Science*, *NATO Science Series*, Vol.66, eds. M. Miglierini and D. Petridis, Kluwer Academic Publishers, Dordrecht, 1999, pp 391-398.