

Activity Determination of  $^{14}\text{C}$  and  $^{204}\text{Tl}$  by Applying  
the 3-PM LSC Technique

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Abstract

We have developed an improved LSC(Liquid Scintillation Counting) method using a three photomultiplier tubes as detectors and developed a three dimensional data acquisition method with which pulse heights from an array of detectors can be multi-scaled with dwell time 10 ns. Since the method enables to obtain the absolute detection efficiencies directly overall the regions of interests by measuring the triple to double coincidence counting ratios, the method is particularly suitable for experiments such as both double and triple coincidence distributions are required. Virtues of the method are demonstrated by measuring the activity of  $^{14}\text{C}$  and  $^{204}\text{Tl}$ . The computer discrimination together with the MCTS (multi-channel time scaling) technique is applied to determine the TDCR efficiency functions in the analysis. Fuller details of accounts of applying the technique is given in this report.