

familiar with all of the techniques discussed in experiment 11. The only real difference is that we will use two NaI(Tl) detectors for the two input channels instead of the pulse generator used in experiment 11.

Figure 12.3 shows a plan view of the angular correlation table that will be used for this experiment. After the timing has been set for the electronics that will be used (fig. 12.4), it is a simple matter to fix one of the detectors

and then record coincidence events as a function of $\pm \theta$. Since the annihilation radiation $\gamma_1 + \gamma_2$ leave the source with an angular separation of 180 degrees, our maximum counting rate will be observed at $\theta = 0$ in fig. 12.3. For the experiment, we will record coincidence events for the angles listed in Table 12.1. We will also make a similar table for angles on the other side of zero ($-\theta$). When we have finished with the experimental data, a plot of the data similar to fig. 12.5 will be made for the data.

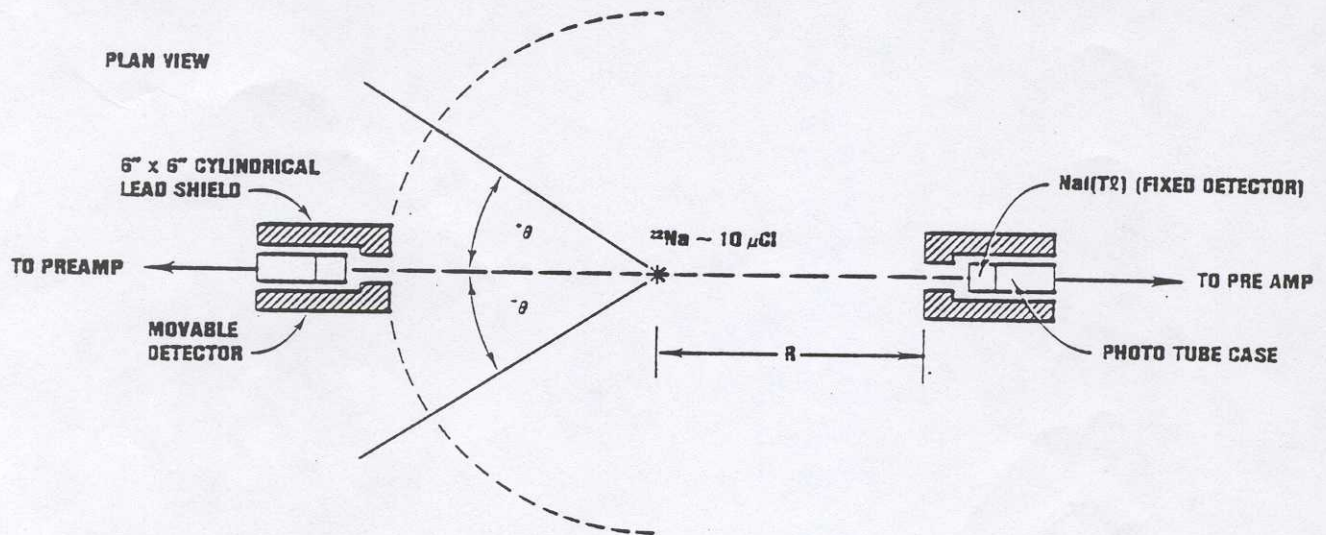


Figure 12.3. Angular correlation table with heavy rotating lead shields for the NaI(Tl) detectors.

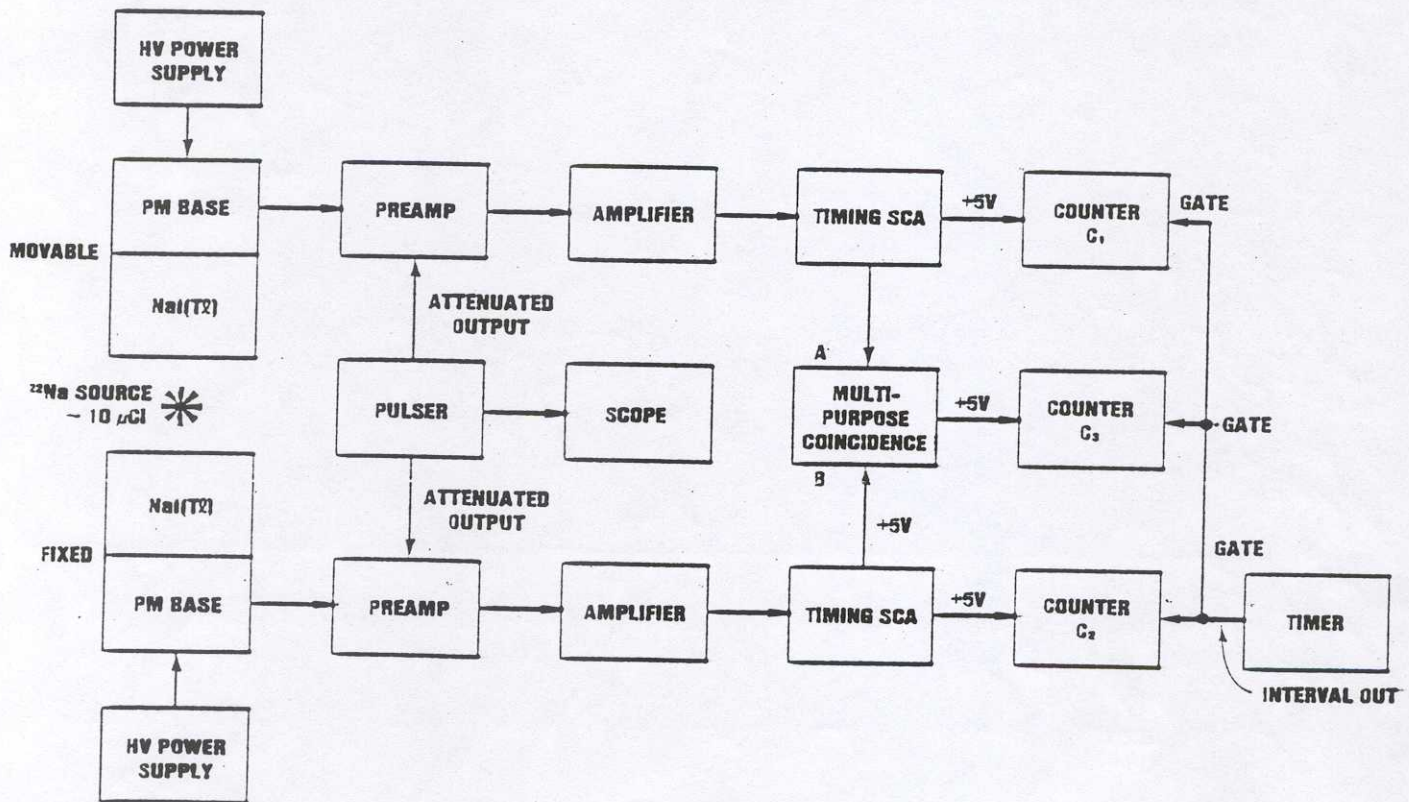


Figure 12.4. Electronics for annihilation measurements with a multipurpose coincidence circuit.