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Application of a digital data acquisition system for time of flight Positron annihilation-induced Auger Electron Spectroscopy R W GLADEN, V A CHIRAYATH, A D MCDONALD, A J FAIRCHILD, M D CHRYSLER, S K IMAM, A R KOYMEN, A H WEISS, Univ of Texas, Arlington — We describe herein a digital data acquisition system for a time-of-flight Positron annihilation-induced Auger Electron Spectrometer. This data acquisition system consists of a high-speed digitizer collecting signals induced by Auger electrons and annihilation gammas in a multi-channel plate electron detector and a BaF2 gamma detector, respectively. The time intervals between these two signals is used to determine the times of flight of the Auger electrons, which are analyzed by algorithms based on traditional nuclear electronics methods. Ultimately, this digital data acquisition system will be expanded to incorporate the first coincidence measurements of Auger electron and annihilation gamma energies.

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