

Parameters of Heavy Ion Elastic Recoil Detection Analysis (HI ERDA) ToF Telescope

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Abstract. In material research, the need to determine the composition of thin layers in the range of thickness from nm to few microns often arises. If light elements have to be measured in a material containing heavy elements, the Time of Flight Elastic Recoil Detection Analysis (ToF ERDA) is the optimal choice. The ToF ERDA provides the quantitative depth profiles of elements in the sample. The parameters of the ToF ERDA telescope for STU ion beam laboratory in Trnava were proposed based on the application requirements and on the results and experience from ToF ERDA telescopes already implemented in other ion beam laboratories, especially in recent years. The depth of analysis in the range of several microns was tested using conventional ERDA measurements.