Preparation of Thin Nuclear Targets by the HIVIPP Method

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Abstract. Knowledge of the structure of atomic nuclei is based on the systematic study of what happens when their structure or energy changes. This leads to the need to study such events - nuclear reactions under controlled conditions. One of the most important parts of the experimental equipment is the nuclear target - the medium in which the desired reactions take place. It is necessary to know all its parameters so that the experimental results are not negatively affected. The properties of the target used also determine the method of its preparation. One of the available and versatile techniques is the HIVIPP (High-Intensity Vibrational Powder Plating) method, which allows the preparation of thin targets (layers) with high efficiency from various powder mixtures that could not be processed by other techniques. Using this method, thin targets of the elements Cu, Mg, Mn and Nb have been prepared on various substrates. The quality and parameters of the prepared samples were examined by optical microscope and measured by an XRF spectrometer.