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Preparation of Self-supporting targets of 11B and 13C YOSHIKO SASAMOTO, TAKAHIRO KAWABATA, Center for Nuclear Study, University of Tokyo, ISAO SUGAI, YASUHIRO TAKEDA, High Energy Accelerator Research Organization — Alpha inelastic scattering measurements are planned in order to examine cluster structures in ^{11}B and ^{13}C. For precise measurements, self-supporting and high-quality targets with a thickness of $\sim$500 μg/cm^2 must be prepared. The vapor deposition is widely used to make thin carbon and boron films, but it is difficult to prepare self-supporting films thick enough by this method. Pressing method is also effective for preparation of high- purity films, but the films prepared by this method are thicker than 10 mg/cm^2. In the present work, a ^{11}B target was prepared by the sputtering method with the electron-beam-excited plasma(EBEP). Argon plasma was produced by irradiating argon gas with the electron beam, and the argon ions extracted from the EBEP sputtered an isotopically enriched boron tablet. Finally, the sputtered boron particles were deposited on a substrate. A ^{13}C target was prepared by the thermal cracking method. Cracking was performed by heating a Ta strip in a chamber filled with $^{13}CH_4$ gas. Then, the cracked carbon layer was formed on the Ta strip. The thickness, uniformity and purity of the prepared targets were investigated.

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