ELASTIC ANGULAR MEASUREMENT OF ^{7}Be+d AT $E_{c.m.}$ = 4.4 MeV*

S. Barua[1], J. J. Das[2], S. Verma[4], A. Jhingan[2], V. M. Datar[3], N. Madhavan[2], A. Navin[3], T. Varughese[2], P. Sugathan[2], K. Kalita[4], B. Bhattacharjee[1], R. Singh[4], and K.Baruah[1]

[1]*Department of Physics, Gauhati University, Jalukbari-Guwahati-787014, India*

[2]*Nuclear Science Centre, P.O. Box 10502, Aruna Asaf Ali Marg, New Delhi-110067, India*

[3]*Nuclear Physics Division, Bhabha Atomic Research Centre, Trombay, Mumbai-400085, India*

[4]*Department of Physics and Astrophysics, University of Delhi, New Delhi-110007, India*

Measurement of elastic scattering cross-section in the ^{7}Be+d$\rightarrow^7$Be+d has been a topic of considerable discussion. The Optical Model parameters at low energy of ^{7}Be+d may reduce the uncertainties associated with the determination of S_{17} factor by ANC method. However, experimentally, measuring the elastic angular distribution of ^{7}Be+d is also associated with the uncertainties because of the overlap of highly forward focussed scattered ^{7}Be and the beam like particles and also because of the uncertainties associated with the deuteron target. In case of gaseous target, the inhomogenity of the target, or in case of solid target like CD2, the contamination of scattering events from higher mass (Carbon) causes the uncertainty in clean measurement.

Elastic angular distribution of ^{7}Be+d were measured at $E_{c.m.}$ = 4.4 MeV for the first time at this low energy using RIB facility at NSC, trying to remove the uncertainties associated with the measurement. Both the scattered ^{7}Be and recoiled d were detected simultaneously and from the kinematic coincidence the unwanted events were filterd out. A very high efficiency detector system was used to overcome the limitations put by the low intensity of ^{7}Be.

The OM parameters were also extracted. This may have a significant role in reducing the uncertainty in extraction of S_{17} factor by ANC method.