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6Li(d,xt) reaction total cross section measurements by secondary activation method

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6Li(d,xt) reaction total cross sections were measured at electrostatic tandem accelerator EGP-10 (RFNC-VNIIEF) at 2.5-12 MeV deuteron energy (fig.1). Secondary activation method proposed by B.Ya. Guzhovskii was used. Cross section was determined by registration of 18F collected yield from 16O(t,n)18F reaction (β+, T1/2=109 min.) produced by 6Li(d,xt) tritons in three quartz tubes situated along deuteron beam direction. 4π-geometry registration was achieved. Li(3)N targets at 250-400 mu-g•cmˆ2 thickness with different lithium isotope composition (6Li - 91.2% and 7Li - 8.8%, 7Li - 99.5% and 6Li 0.5%) on thin (10-15 mu-g•cmˆ2) hydrocarbon (C(8)H(8)) backings were used. 16O(t,n)18F and 17O(d,n)18F reaction yields from thick quarz disks were measured for implementation of the method. The obtaining of the results was possible after our 6,7Li+d reaction spectral measurements have been performed [1]. 6Li(d,xt) reaction cross section measured by different methods are presented in fig. 1. for comparison.

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