

Abstracts of Papers

The following 32 papers are the second part out of 89 papers, read before the semi-annual meeting of the Institute on June 2 and 3, 1951.

1. The Nuclear Reaction of N^{14} with Low Energy Neutrons. (II)

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With the same apparatuses as those have been used to measure the Q-value of N^{14} (n, p) C^{14} reaction (Rep. Inst. Chem. Res., Kyoto Unive., 19, 19 (1949)), we studied the energy distribution of emitted charged particles of low energy region from nitrogen gas irradiate by thermal neutrons.

Two peaks were found at 0.28 MeV and 0.42 MeV. The half width of the peak corresponds to about 0.07 MeV, which almost comes from the amplifier noise. Consequently the appearance of the peak is broad. The lower peak is covered a little by the gamma-ray disturbances.

The change of the energy distribution curve of emitted charged particles with the increase of the thermal neutron flux was studied by changing the paraffin wall geometry, but no distinguished variation was found except the rapid increase of 0.6 MeV proton peak of the N^{14} (n, p) C^{14} reaction and the background due to the edge effect and wall effect of it.

The two peaks also suffered no distinguished change with 1 mm Cd absorber applied around the counter wall.

From these results we can consider that these peaks are not due to thermal neutrons, but to somewhat higher energy neutrons.

Further studies are now being continued.

2. On the Positively Charged Particles Accompanying the β -Decay of P^{32}

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A cloud chamber with 17cm diameter and 3.5cm height was constructed. P^{32} , in the form of $NaHPO_4$, was sealed in a glass capillary tube of 2mm diameter