



Contribution ID: 133

Type: Poster

## A Compact High-Yield DD Neutron Generator

This paper introduces the development of a compact high-yield DD neutron generator in China Institute of Atomic Energy. The generator uses a 2.45 GHz high current ECR ion source to generate a 10 mA D beam. The experimental results show that the 200 keV beam energy can be reached. A copper drive-in target structure with water-cooled is adopted. The target surface does not need to be charged with D in advance. This structure can greatly extend the life of target to thousands of hours. In this work, a preliminary measurement of the neutron yield of the generator was carried out. A  $^3\text{He}$  neutron detector has been used. The neutron yield of reached  $2.4 \times 10^8$  n/s when the beam was 7.5 mA, energy 130 keV. During the test-runs, the operation of the neutron generator was stable, that is no component damaged. The generator has the characteristics of small size, high neutron yield and long life, which can meet the needs of 2.5 MeV neutron source in scientific or some industrial applications.

### E-mail for contact person

### Funding Information

**Primary author:** TANG, Bing (China Institute of Atomic Energy)

**Co-author:** CHEN, Lihua (CIAE)

**Presenter:** TANG, Bing (China Institute of Atomic Energy)

**Session Classification:** Poster Session 1

**Track Classification:** Applications and related technologies