

# Research Progress of E-STONE

Jiang Wengang

*Northwest Institution of Nuclear Technology, Xi'an 710024, China*

## Abstract

The E-STONE (the Expert Setup for Nuclear-mission Explorer) is a set of detectors for the study of neutron-induced fission physics processes. It can also be used to measure the basic nuclear data needed for nuclear energy development and application of nuclear technology, such as mass distribution, charge distribution, relationship between fission yield and neutron energy, prompt neutron, prompt gamma-ray.

At present, the high performance E-V measuring system has been developed and tested, including: (1) A low-pressure thin window Frisch-grid ionization chamber was developed, the energy resolution for low-speed heavy ions was less than 0.7% (80 MeV  $^{129}\text{Xe}$ ). (2) The SE-MCP time-of-flight detector was developed, and the intrinsic time resolution was less than 60 ps. (3) Based on the waveform difference of heavy ions in ionization chamber, the measurement method of the nuclear charge number  $Z$  was studied. The accuracy of the recognition of the nuclear charge number  $Z$  for Xe, I and Cs was 75%. (4) The performance of E-V measurement system was measured using  $^{252}\text{Cf}$  spontaneous fission source.