



## Fission experiment using $^{254}\text{Es}$ target material at JAEA tandem accelerator facility

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From the measurements of fission-fragment mass distributions for nuclides around  $A=258$  for spontaneous fission, a unique sharp change from asymmetric fission to symmetric fission mode was found by moving from  $^{256}\text{Fm}$  to  $^{258}\text{Fm}$  [1]. To understand such specific phenomenon will give a unique opportunity to study the fission mechanism.

We have developed a measurement system for multinucleon transfer fission and performed experiments using actinide targets and  $^{18}\text{O}$  beams at the Tokai tandem accelerator facility of Japan Atomic Energy Agency [2,3,4]. The multinucleon transfer reaction is a powerful tool to populate a variety of nuclides with a wide range of exciting energies. For example, 23 nuclides from U to Bk with excitation energies up to 70MeV were produced in the reaction  $^{18}\text{O}+^{237}\text{Np}$  [5]. The availability of  $^{254}\text{Es}$  material from Oak Ridge National Laboratory allowed us to initiate an extended campaign to study fission of nuclides in this region. This presentation will review the results from several experiments which we performed in fusion-fission of  $^4\text{He}+^{254}\text{Es}$  reaction, spontaneous fission in  $^{18}\text{O}+^{254}\text{Es}$  and multinucleon transfer fission in  $^{18}\text{O}+^{254}\text{Es}$ .

### References

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