Prediction of fission barrier height for induced fission reactions with $^{16}\text{O}$ at several energies

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Abstract
We have calculated the fission barrier height for $^{16}\text{O} + ^{208}\text{Pb}$, $^{16}\text{O} + ^{209}\text{Bi}$, $^{16}\text{O} + ^{232}\text{Th}$, $^{16}\text{O} + ^{238}\text{U}$ and $^{16}\text{O} + ^{248}\text{Cm}$ systems in energy range between 90 MeV to 215 MeV. This method is based on the experimental data for angular anisotropies of fission fragments. In present work, we have used the transition state model (STM) for two different cases: the first case is without neutron emission correction and the second case is with neutron emission correction. In this paper, we have predicted the fission barrier for the two super heavy nuclei that were not reported previously with experimental methods.

Keywords: fusion, fission, saddle point model, angular anisotropy, fission barrier height

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