

## CALCULATION OF NEUTRON SELF-SHIELDING FACTOR FOR $^{186}\text{W}$ TARGET USING THE PHITS CODE

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Thermal and epithermal neutron self-shielding correction factors for the (n,g) reaction in the  $^{186}\text{W}$  target were determined by simulation using the PHITS code. The  $^{186}\text{W}$  cylindrical target was in the form of metal powder diluted in an aluminum (Al) matrix at various concentrations. A Maxwellian neutron source with an average peak energy at 0.0253 eV was applied to the thermal neutron group and a 1/E distribution was applied to the epithermal neutron group. Neutron correction factors were investigated for different dilution concentrations of  $^{186}\text{W}$  in the  $^{186}\text{W}(\text{Al})$  sample under two irradiation conditions: an isotropic neutron field and a collimated neutron beam. Additionally, neutron correction factors were calculated for various wire diameters under irradiation with a collimated neutron beam.

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