

# **Validation of the McStas-MCNPX Interface Features in Calculation of Shielding and Gamma/Neutron Backgrounds**

Sy Minh Tuan Hoang<sup>1\*</sup>, Gwang Min Sun<sup>2</sup>, Hoai-Nam Tran<sup>1</sup>

<sup>1</sup>*Institute of Fundamental and Applied Sciences, Duy Tan University, 10C Tran Nhat Duat, Ho Chi Minh, Vietnam*

<sup>2</sup>*Korea Atomic Energy Research Institute, 111 Daedeok-Daero 989 Beon-Gil, Yuseong-gu, Daejeon, Republic of Korea*

*\*Email Address: [hsmtuan@gmail.com](mailto:hsmtuan@gmail.com)*

The interfacing McStas and MCNPX (Virtual\_mcnp\_ss\_Guide component) have been developed since 2012 for overcoming the limitations of the gap between McStas and MCNPX such as complex moderator geometries, backgrounds, and interference between beam-lines as well as shielding requirements along the neutron guides. In the present, there is no study about the validation of this feature. The aim of this study is to validate the McStas-MCNPX interface by comparison between the calculated results of the McStas-MCNPX interface with the other codes (VITESS, PHITS) and experiments. Based on the validation, the calculation of the shielding and gamma/neutron background along the neutron instruments can be easy by using the interfaces.

Keywords: McStas-MCNPX interface, VITESS, PHITS, Neutron instrument.