

---

**EVALUATIONS OF K, CA, TI, V, CR, MN, FE, CO, NI AND ZN FOR JENDL-HE**Kazuaki Kosako<sup>1</sup>, Tokio Fukahori<sup>2</sup>, Yukinobu Watanabe<sup>3</sup><sup>1</sup> *Sumitomo Atomic Energy Industries, Ltd.*<sup>2</sup> *Japan Atomic Energy Research Institute*<sup>3</sup> *Kyushu University*

---

In recent year, high-energy nuclear data are required for various applications of accelerators and space development. Proton data as well precision as neutron data are necessary in these high-energy applications. Medium-heavy nuclei are very important for radiation shielding and structure material of accelerators. The neutron and proton cross sections of medium-heavy nuclei were evaluated up to 3 GeV for JENDL High Energy Files (JENDL-HE). The nuclei are natural isotopes of K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni and Zn, and total number is 34. The cross section data up to 250 MeV was calculated with the ECIS and GNASH codes. In the energy region from 250 MeV to 3 GeV, the TOTELA and NMTC/JAM codes were used. For neutron incident, the cross section data above 20 MeV is merged into the evaluation of JENDL-3.3. The optical potential parameters of neutron and proton were newly determined by isotopes. The evaluated data were compared with experiment data such as reaction cross section, production cross section and differential cross section. There are acceptable agreements between both. Iron was investigated the double differential cross sections and the leakage energy spectrum by the comparison with benchmark experiments and LA150.