Abstract Submitted
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Elastic and inelastic scattering of neutrons from ^{56}Fe[1] ANTHONY PAUL RAMIREZ, M.T. MCELLISTREM, S.H. LIU, S. MUKHOPADHYAY, E.E. PETERS, S.W. YATES, University of Kentucky, Lexington, KY USA, J.R. VANHOY, T.D. HARRISON, B.G. RICE, B.K. THOMPSON, United States Naval Academy, Annapolis, MD USA, S.F. HICKS, T.J. HOWARD, D.T. JACKSON, P.D. LENZEN, T.D. NGUYEN, R.L. PECHA, University of Dallas, Irving, TX USA — The differential cross sections for elastic and inelastic scattered neutrons from ^{56}Fe have been measured at the University of Kentucky Accelerator Laboratory (www.pa.uky.edu/accelerator) for incident neutron energies between 2.0 and 8.0 MeV and for the angular range 30° to 150°. Time-of-flight techniques and pulse-shape discrimination were employed for enhancing the neutron energy spectra and for reducing background. An overview of the experimental procedures and data analysis for the conversion of neutron yields to differential cross sections will be presented. These include the determination of the energy-dependent detection efficiencies, the normalization of the measured differential cross sections, and the attenuation and multiple scattering corrections. Our results will also be compared to evaluated cross section databases and reaction model calculations using the TALYS code.

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