

# Nuclear Data Needs for Advanced Reactors

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A wide spectrum of advanced-reactor concepts are being envisaged around the world. The generation VI reactors selected by the Generation IV International Forum in the early 2000's covers 6 new categories of advanced reactors. They are 1) supercritical water-cooled reactor (SCWR), sodium-cooled fast reactor (SFR), lead-cooled Fast Reactor (LFR), very high temperature reactor (VHTR), gas-cooled fast reactor (GFR) and molten salt reactor (MSR). These new reactor concept introduces the new needs for nuclear data. In order to discuss the nuclear data needs for analysis and design of these reactors, Workshop on Nuclear Data Needs for Generation-IV Systems were held on 5 ~ 7 April 2005 in Antwerp. Discussion there can be summarized from two view-points, namely, the quality and the variety of nuclear data. As for the quality, most of the speaker stressed the urgent necessity for the variance-covariance matrix. As for the variety, the needs come from the exotic materials introduced into the cores of the generation IV reactors. For example LFR and VHTR introduce new need for the reliable lead and silicon cross-section data, respectively. The inelastic scattering in Pb isotopes influence much to form the LFR neutron spectrum.